

**Microsoft Network Client Version 2.2**  
**User's Guide for MS-DOS Clients**

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## Preface

The *User's Guide for MS-DOS® Clients* is for users of Microsoft® LAN Manager for the MS-DOS operating system. This manual describes how to use the LAN Manager Screen menu commands for the Enhanced version and how to use typed commands for the Basic version. It also shows you how to use NetWare® Connectivity, the feature that allows you to use a Novell® NetWare network from your LAN Manager workstation, and the Remote Access service (RAS), the feature that allows off-site PC users transparent access to network resources.

LAN Manager can also be used through the Microsoft Windows™ operating system, version 3.0 or higher. LAN Manager version 2.2 integrates well with networks that include Windows NT™ workstations, Microsoft Windows for Workgroups clients, and Microsoft Workgroup Connection clients. These clients can all connect to the Windows NT workstations or Windows NT Advanced Servers or to the LAN Manager servers, and LAN Manager client workstations can connect to Windows for Workgroups resources. For information about using the Windows for Workgroups client or the Workgroup Connection client, see the documentation accompanying the product. For information about using a LAN Manager client to connect to a Windows for Workgroups resource, see the Microsoft Windows for Workgroups documentation or the *User's Guide for Microsoft Windows Clients*.

This manual assumes that you know how to use a personal computer and that you are familiar with MS-DOS. If you are not familiar with MS-DOS, see your MS-DOS manual(s).

### **How LAN Manager for MS-DOS Works**

LAN Manager expands the features of MS-DOS to connect your computer to a Windows NT or LAN Manager local area network (LAN). A local area network is a group of personal computers that communicate with each other and share resources such as disk drives, directories, and printers.

A network is made up of workstations and servers. Workstations are computers that can use the network resources. They may be on a desk in an office, or they may be in a manufacturing area or at a customer service desk.

Servers are the computers that control the network resources. Your workstation runs MS-DOS; other workstations on the network may run Windows NT, MS-DOS, Operating System/2® (OS/2®), Microsoft Windows, or Windows for Workgroups.

Resources are made available to you and to other network users through a process called sharing. The servers on a network share resources with network users at workstations. First you gain access, or log on, to the network and connect your workstation to a server. Then you can use the network resources as though they were attached directly to your workstation. For example, you can connect to a network printer that's down the hall or in another part of the building, and then print as though the printer were physically attached to your workstation.

You can also use your workstation to use client-server applications that your administrator has set up for you. Client-server applications use the capabilities of both your workstation (the client) and the server to perform a task. For example, a massive database that is to be shared by all users on the network can be kept on a server to assure that all users see the same data and that security and business policies are enforced for the data it contains. Individuals can access this data as needed, using the processing power of the client computers to provide the interface and to work with the data.

To simplify administration and security, a network with Windows NT Advanced Servers or LAN Manager servers can be divided into unique groups of workstations and servers called domains. When you start your workstation, you log on in a domain — usually the one that has the servers you use most often. But because all the domains are part of the same local area network, you can use shared resources on servers in other domains. Computers running Windows NT can be grouped into workgroups, which function much like domains.

A network is maintained by one or more network administrators, who share resources at servers and manage network security. If you need a password to connect to a shared resource, or if you have trouble using your workstation, ask your administrator for help.

### **Different Versions of LAN Manager**

LAN Manager client software for MS-DOS is available in two versions, Basic and Enhanced. If you are not sure which version you have, ask your

## Preface

administrator.

### **Basic Version**

You use LAN Manager Basic by typing commands at the MS-DOS prompt. With LAN Manager Basic, you can:

- Add your computer to a network.
- Use shared disk drives, directories, files, and printers.
- Get online Help.
- Display the contents of printer queues.
- Pause and continue connections to network resources.
- Use client-server applications.

To learn how to use LAN Manager Basic, see Part 2 of this manual.

### **Enhanced Version**

LAN Manager Enhanced offers you all the features of the LAN Manager Basic, plus the added convenience of the LAN Manager Screen. With LAN Manager Enhanced, you can:

- Choose between using menu commands and typing commands.
- Get online Help with the LAN Manager Screen and command-line commands.
- Display the contents of printer queues and control print jobs in a queue.
- Move and copy files between any two directories on the network.
- Exchange messages with other network users.
- Use named pipes.
- Use client-server applications.

To learn how to use LAN Manager Enhanced, see Part 1 of this manual.

### **Finding Further Information**

This manual is written for users of LAN Manager 2.2 for MS-DOS. In addition to this manual, this documentation set includes the following LAN Manager manuals:

*User's Guide for Microsoft Windows Clients*

Provides instructions on how to log on and off, send and receive messages, and

browse, connect to, and disconnect from network resources, all through Microsoft Windows icons.

*Installation Guide for Clients*

Provides procedures to install LAN Manager software, and information about the network device drivers used with LAN Manager and about configuring workstations and servers.

*NetWare Connectivity Guide*

Provides information about installing and administering the NetWare Connectivity feature of LAN Manager, which allows MS-DOS workstations to access Novell NetWare servers as well as Windows NT computers and LAN Manager servers.

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**Getting Started with LAN Manager  
Enhanced**

## Getting Started with LAN Manager Enhanced

This chapter introduces LAN Manager Enhanced and explains how to start your workstation and log on to the network, how to use the LAN Manager screen, how to get Help, and how to quit LAN Manager.

If LAN Manager Enhanced is not installed on your workstation, contact your administrator.

## Starting LAN Manager Enhanced

Starting LAN Manager Enhanced involves two separate actions:

- Starting the Workstation service
- Logging on to the network

A service is a program that performs one of the major functions of LAN Manager. The Workstation service connects your workstation to the network, so that you can use network resources. The Workstation service must be running in order for other services to run.

When you start the Workstation service, information that lets you use shared resources and send and receive messages is loaded into your computer's memory.

Logging on identifies you on the network and establishes you as the user of the workstation you logged on from. When you log on, you supply your username and password, which identify you as a member of a domain, a collection of workstations and servers on the network. Logging on also restores the connections that were in effect the last time you logged on. If you don't want to have connections restored each time you log on, you can turn this feature off, following the directions in Chapter 2, "Using Shared Directories."

Domains are used on networks that have Windows NT Advanced Servers or LAN Manager servers.

Domains keep the network organized and simplify administration. They have names, just like workstations and servers. When you log on, you automatically log on in the workstation domain. You don't need to specify the workstation domain name; it is specified in the LAN Manager Enhanced software. You can override the workstation domain by supplying the name of a different domain in which to log on. This domain is called the logon domain.

A server called a domain controller or logon server verifies that you are allowed to log on in a particular domain. On this server, the administrator maintains a record of user accounts, which define the hours that each user can log on and the access that users have to resources in the domain.

## Starting the Workstation Service and Logging On

You must start the Workstation service before you can log on to the network or use the LAN Manager screen.

To start the Workstation service

- At the MS-DOS prompt, type **net start workstation**.

After the Workstation service starts, you must log on to the network.

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**NOTE:**

When using R:BASE 3.10 on a computer with expanded or Lotus/Intel/Microsoft (LIM) memory, do not allow the LAN Manager Workstation service to reside in expanded memory. Make sure the **lim** parameter has not been set to **yes** in the [workstation] section of LANMAN.INI, or start the workstation with the following command:

```
net start workstation /lim:no
```

If the **lim** parameter is not specified in the LANMAN.INI file, the value will default to **no**, and you need not specify it in the **net start workstation** command.

---

To log on to the network

- 1 Start the LAN Manager screen from the MS-DOS prompt by typing **net**.

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**NOTE:**

Typing **net /mono** improves the LAN Manager screen display for some computer screens. Try typing the command with and without the **/mono** option to determine which display you prefer.

The Log Onto Network box appears.

Your username should appear in the Username text box. A text box is an area in a dialog box surrounded by brackets that contains or receives information you type. If your username does not appear in the Username box, see your administrator. You can specify a different username by typing over the username that appears.

- 2 Press TAB to move the cursor to the Password box, and then type your password. (Your administrator will give you a password. You can change it later.)

The password does not appear when you type it. If you enter the wrong password, access is denied and you will have to try again. If you enter the wrong password on several tries, you may be locked out of the system. This protects your account from anyone who may try to guess your password. Your network administrator can remove the lock by re-enabling your account.



If your password is within three weeks of expiring, a warning appears to remind you to change it. If the password has already expired, you must change the password in order to log on. See “Changing Your Password,” later in this chapter.

- 3 Press TAB to move to the Domain box. This box displays the workstation domain. To specify another domain, type a new domain name.

---

**NOTE:**

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To use other domains, the **othdomains** parameter must be specified in the LANMAN.INI file, or as an option to the **net start workstation** command. For more information, see the *Installation Guide for Clients*.

- 4 Press TAB to move to the OK button, and then press ENTER.

Message boxes appear, telling you that your logon was successful and what privilege level you have on your workstation. The privilege level defines the range of action you have on your workstation (or on a server).

If you cannot log on—for example, if you mistype your password, or if a loose cable or similar hardware problem prevents communications—a message appears telling you the type of problem that occurred.

- 5 To clear message boxes from the LAN Manager screen, press ESC.

### Additional Network Services

Along with the Workstation service, LAN Manager Enhanced automatically starts three other services:

- The Messenger service, which lets you send and receive messages, and log messages in a file.
- The Encrypt service, which encrypts passwords before sending them across the network.
- The Netpopup service, which displays messages on your workstation screen when they are received from another user or a server on the network.

These services are described in more detail in Chapter 4, “Sending and Receiving Messages.”

## Using the LAN Manager Screen

Using the LAN Manager screen, you can browse around the network, locate shared resources, and connect to those resources without having to memorize commands or syntax.

These are the elements of the LAN Manager screen:

### Menu bar

Displays the names of menus from which you can choose commands.

### Current focus

Shows the computername of your workstation or the server that is the focus of activity when using LAN Manager screen commands.

### Workstation information

Provides the following information about your workstation:

#### Your username

The username you specified when you logged on to the network.

#### Your computername

The computername specified when you started the Workstation service.

#### Your domain

The name of your logon domain. This is the domain name you specified when you logged on to the network. If you didn't specify a domain name, you automatically logged on in the workstation domain. Note that the workstation domain and the logon domain are the same when you log on in the workstation domain.

### Servers in the logon and workstation domains

Lists the servers in your logon and workstation domains.

### Scroll bar

Lets you use a mouse to scroll through the servers in the list box.

### Message line

Provides a brief statement about the menu, command, or current task.

To perform tasks using the LAN Manager screen, you select a menu, which displays a list of commands. When you choose a command, a dialog box appears. In the dialog box you type information necessary to perform a task.

### **Using CTRL+BREAK to Break Out of Network Requests**

You can stop network requests that were initiated at the MS-DOS command line or in the LAN Manager screen with the CTRL+BREAK key combination.

If you are using the Windows operating system version 3.1, and an uncompleted network request that was initiated from an MS-DOS window appears to have halted your computer, press CTRL+ALT+DEL to reach the MS-DOS window, and then press CTRL+BREAK to stop the network request.

Do not use CTRL+BREAK to stop network requests that were issued through a Microsoft Windows program such as File Manager.

### **Using Menus and Menu Commands**

LAN Manager operations begin with the menus that appear in the bar across the top of the LAN Manager screen. When you select a menu, a list of commands appears. Commands lead to dialog boxes where you supply additional information. Every command name contains a highlighted letter that you can use to choose that command from the keyboard (press the corresponding letter to choose the command). When a menu command is unavailable, no letter is highlighted.

You can select a menu with a mouse, positioning the pointer on the menu name and clicking the left mouse button. The menu appears, and you can choose a menu command the same way.

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**NOTE:**

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The LAN Manager screen does not recognize a left-handed mouse.

## Getting Started with LAN Manager Enhanced Using the LAN Manager Screen

You can also use the following keys to view and select menus and choose commands:

<b>Key</b>	<b>Action</b>
ALT	Activates menu names on the menu bar.
Highlighted letter	When menu names are activated with ALT or menu commands are displayed, selects the menu or chooses the menu command that contains the highlighted letter.
← →	When a menu appears, moves from one menu to another.
↑ ↓	When a menu appears, moves from one command to another.
ENTER	Selects the highlighted menu or menu command.
ESC	Clears a menu from the screen.

### **View Menu**

With commands from the View menu, you can view shared resources on the server of current focus, make connections to shared resources, view your workstation's connections, view information about users of LAN Manager servers on the network, and exit the LAN Manager screen.

These are the View menu commands:

#### **Available resources**

Displays the various resources available on the server of current focus. These resources include shared directories (disks) and printers.

#### **Printer queues**

Displays the print queues on the server of current focus and the print jobs in each queue.

#### **Used resources**

Displays the resources that your workstation is connected to on the server of current focus. You can connect your workstation to resources shared by servers other than the server of current focus, as well as to resources shared by non-LAN

Manager servers.

#### Users on a server

Displays the users that are logged on to the server of current focus, if that server is a LAN Manager server.

#### Users on a domain

Displays the users that are logged on to LAN Manager servers in a domain.

#### Exit

Removes the LAN Manager screen. Also, you can press ALT+F4 to exit the screen at any time.

### **Message Menu**

With commands from the Message menu, you can send, log, and read messages, and add and delete aliases.

These are the Message menu commands:

#### Send a typed message

Sends a message to one or more users on the network.

#### Log messages to file

Selects the log file that stores your messages, and pauses and continues message logging.

#### Read message log file

Displays the messages in your message log file.

#### Aliases

Displays the message aliases on your workstation. With this command, you can add message aliases to and delete message aliases from your workstation.

### **Config Menu**

With commands from the Config menu, you can log on and log off, and view your workstation configuration.

## Getting Started with LAN Manager Enhanced Using the LAN Manager Screen

These are the Config menu commands:

Log on to LAN

Logs you on to the network.

Log off from LAN

Logs you off from the network.

Workstation options

Displays information about your workstation's configuration.

### **Accounts Menu**

With commands from the Accounts menu, you can view information about your account and change your password.

These are the Accounts menu commands:

Your account

Displays information about your account.

Change your password

With this command, you can change your password at a server.

### **Help Menu**

With commands from the Help menu, you can access online Help.

These are the Help menu commands:

General help

Describes the LAN Manager screen and how to use it.

Keyboard

Describes using the LAN Manager screen with a keyboard.

Mouse

Describes using the LAN Manager screen with a mouse.

Table of contents

Displays a list of tasks you can perform from the LAN Manager screen.

### Glossary of terms

Displays an alphabetical list of terms and definitions used with LAN Manager Enhanced.

### Using Help

Explains how to use Help.

### About LAN Manager

Describes the version of LAN Manager installed and displays a copyright notice.

## Using Dialog Boxes

You use dialog boxes to supply information needed for performing a task. Dialog boxes contain as many as five types of areas, or elements. Each dialog box has a title, which appears at the top of the dialog box.

### Dialog Box Elements

Dialog boxes contain one or more of the following elements:

- Text boxes, in which you type information
- List boxes, which present a list of items to select from
- Option buttons, which let you select one of several options
- Command buttons, which perform an action
- Check boxes, which let you select or clear an option

Use the following keys to move around in dialog boxes:

<b>Key</b>	<b>Action</b>
Highlighted letter	Moves the cursor to the element that contains the highlighted letter. (If the cursor is in a list or a text box, hold down ALT while pressing the highlighted letter.) Pressing the highlighted letter in a command button activates the command.
TAB	Moves the cursor to the next field.
SHIFT+TAB	Moves the cursor to the previous field.

## Getting Started with LAN Manager Enhanced Using the LAN Manager Screen

<b>Key</b>	<b>Action</b>
ENTER	Carries out the actions you specify.
ESC	Cancels any specified actions and closes the dialog box.

### **Text Boxes**

You type information in a text box. A text box is surrounded by brackets and contains a series of dots that are replaced with characters as you type. A text box sometimes holds more characters than appear between the brackets. You can view these characters by using the right arrow key to scroll to the left. Sometimes a text box appears with information already in it. For example, your username already appears in the text box LAN Manager displays when you log on to the network.

When in a text box, use the following keys:

<b>Key</b>	<b>Action</b>
←	Moves the cursor one space to the left.
→	Moves the cursor one space to the right.
HOME	Moves the cursor to the first character in the text box.
END	Moves the cursor to the last character in the text box.
DEL	Deletes the character that the cursor is on.
BACKSPACE	Deletes the character to the left of the cursor.

If you are using a mouse, you can scroll the text in a text box by clicking the left or right bracket.

### **List Boxes**

In a list box, you can view items by scrolling through the list, and you can select one of the items. For example, you can view lists of resources on a server or print jobs waiting to print in a list box.



Use the following keys to move around in a list box:

<b>Key</b>	<b>Action</b>
↑	Moves the cursor up one line.
↓	Moves the cursor down one line.
PAGE UP	Moves the cursor up one page. A page is the portion of a list that appears on the screen.
PAGE DOWN	Moves the cursor down one page.
HOME	Moves the cursor to the top of a list.
END	Moves the cursor to the bottom of a list.
F5	Updates a list.

Pressing a letter while the cursor is in a list box (including the list box of server names on the LAN Manager screen) moves the cursor to the next item that begins with that letter.

A scroll bar and a scroll box appear at the right of a list box. The scroll bar lets you use the mouse to move through a list that contains more than one screen of information. Click the up or down arrow to move the view up or down one line. The position of the scroll box reflects the position of the information in the window relative to the total contents of the list. You can move through the list with the mouse by dragging the scroll box. Drag the scroll box by positioning the pointer on the scroll box, holding the left mouse button down, and then moving the mouse.

To select an item in a list box with the mouse, click the item. If the dialog box containing the list box has a Zoom button, double-clicking an item in the list (positioning the pointer on the item and quickly pressing and releasing the left mouse button twice) zooms, presenting more information about the item. Otherwise, double-clicking performs the action corresponding to the first command button in the dialog box.

If a dialog box has a pair of list boxes, double-clicking an item in one list box often moves it to the other list box.

### **Check Boxes**

With a check box, you turn an option on or off. When a check box is marked with an X, the option is on. When the cursor is in a check box, you can use the SPACEBAR as a toggle to select or clear the box.

To select or clear a check box with the mouse, click inside it.

### **Option Buttons**

With an option button, you select one option from a group of options. One option button is always selected, and you can select only one option button at a time.

To select an option button, use the following keys:

<b>Key</b>	<b>Action</b>
↑	Changes the selection to the previous option.
↓	Changes the selection to the next option.

To select an option button with the mouse, click it.

### **Command Buttons**

A command button performs a specific LAN Manager task. To choose a command button, press TAB to move to the button, and then press ENTER. You can also choose a command button by pressing the key that corresponds to the highlighted letter in the command button. When a command button does not contain a highlighted letter, the command button is unavailable.

To choose a command button with the mouse, click it.

### **Getting Help from the LAN Manager Screen**

There are two ways to get Help while using the LAN Manager screen: by selecting the Help menu and by pressing F1. The Help menu provides access to Help topics, which appear on your screen in message boxes called Help boxes.

To get information about a menu, command, or dialog box, press F1 while that item is displayed. If you press F1 when no dialog box or menu is displayed, the Help û Using the LAN Manager screen box appears. You can use the arrow keys to scroll the text, or you can use a mouse to scroll.

To remove a Help box from the screen, choose the Done button or press ESC.

## Viewing Network Resources

With commands from the View menu, you can view servers and shared resources on the network, and you can view users on a server or in a domain. You can also view Windows for Workgroups resources.

After you log on, a list of servers in your workstation domain (or in your logon domain when you specify a domain other than your workstation domain at logon) appears in the list box on the LAN Manager screen. You may not have access to all the servers listed, and not all of the servers you have access to may be visible. Your administrator determines whether a server is visible on the network. Check with your administrator to find out which servers are available to you.

For information about using a LAN Manager client to connect to a Windows for Workgroups or Workgroup Connections resource, see the Microsoft Windows for Workgroups or Microsoft Workgroup Connections documentation.

---

**NOTE:**

To view resources on the server, the network server running the Netlogon service and the MS-DOS workstation must both run the same protocol (for example, NetBEUI). If the workstation and server are not running the same protocol, attempts to view resources on the server will fail.

If you are experiencing problems viewing resources, see your network administrator.

---

## Setting the Current Focus

When you start the LAN Manager screen, the Current Focus line and the Set Current Focus On text box display your workstation's computername. These displays indicate that the current focus of your activity when you use menus and dialog boxes is your workstation.

To connect to shared resources and perform other tasks on servers, you must first change the current focus to the server sharing the resources you want to view or use. This makes the server the current focus of activity.

To set the current focus on a server

- 1 Select the computername of the server you want to focus on by:
  - Pressing the first letter of the server's computername  
Or
  - Scrolling through the list box until the name appears in the Set current focus on text box  
Or
  - Typing the server's computername in the Set current focus on text box
- 2 Press ENTER, or double-click the server name.

The server's computername appears on the Current focus line, and a message box appears that shows your privileges on that server.

## Viewing Shared Resources

After setting the current focus on a server, you can view that server's shared resources, such as directories and printers available to network users.

To view shared resources on a server

- 1 Set the current focus on the server that you want to view.
- 2 From the View menu, choose Available Resources.

The Resources Available at \\computername dialog box appears.

The Resources Available at \\computername dialog box shows the resources available on the server you specified. The information in the Type column indicates the type of each resource in the list. Disk refers to shared directories; Printer refers to shared printers.

- 3 Choose the Done button.

For more information about connecting to and using shared resources, see Chapter 2, "Using Shared Directories," and Chapter 3, "Using Shared Printers."

## Network Paths

Every shared resource on the network is identified by a network path. A network path is the computername of the server sharing the resource, followed by the resource's sharename--the name an administrator assigns to

it. Network paths are used in dialog boxes and in commands typed at the MSDOS prompt. When you type a network path at the MS-DOS prompt, precede the computername by two backslashes (\\), and precede the sharename by one backslash (\).

For example, \\SALES\REPORTS specifies the network path for the REPORTS shared directory on the \\SALES server.

For UNIX servers only, computernames for servers end with the suffix .SERVE. Therefore, computernames are in the form of computername.SERVE, where computername is the name of the UNIX system computer that is running the LAN Manager server software.

Throughout this document, servernames and computernames are used interchangeably.

## Viewing Users on the Network

You can view a list of users whose workstations are connected to a particular LAN Manager server that is running the Netlogon service or who are logged on in a particular LAN Manager domain. Otherwise, you can only view users on LAN Manager domain controllers that are running the Netlogon service.

To view information about users connected to a server

- 1 Set the current focus on the server that has the users you want to view.
- 2 From the View menu, choose Users on a server.

The Current Users on Server \\computername dialog box appears.

For each user with a connection to the server you specified, the Current Users on Server \\computername dialog box lists the username, the computername of the workstation where the user is logged on, the length of time elapsed since the connection was established, and the user's full name.

If the Netlogon service is not running on the server of focus, you see an error message.

- 3 To view more information about a user, select the username in the list box, and choose the Zoom button.

The Information on user username dialog box appears.

- 4 Choose the Done button.

**5** Choose the Done button again.

To view users logged on in a domain

**1** From the View menu, choose Users on a domain.

The Select a Domain to View dialog box appears.

**2** In the Known domains list box, select the domain that has the users you want to view.

**3** Choose the OK button or press ENTER.

**4** The Current Users on Domain domainname appears. This dialog box lists the users logged on in the domain you specified, and it contains the same types of information as the Current Users on Server \\computername dialog box.

**5** To view information about a user, select the username in the list box, and choose the Zoom button.

The Information on user username dialog box appears. This dialog box provides more information about the user you specified.

**6** Choose the Done button.

**7** Choose the Done button again.

## Understanding User Accounts

User accounts control access to shared resources. On a server, user accounts specify which users have access to shared resources. In a Windows NT Advanced Server or LAN Manager domain, user accounts specify which users can log on.

Your account on a server includes your username and the password you must supply to gain access to the server's resources. If the password you supply when you log on matches the password in a server's account, you can use the server's resources. Otherwise, you must supply a password when connecting to a resource to gain access. Note that having an account on a server does not guarantee access to all of its resources. Your administrator can control access to each resource on a server by setting permissions for every user individually.

In a Windows NT Advanced Server or LAN Manager domain, your account includes the username and password that you must supply to log on to that domain, your full name, a comment about you, and a record of the hours during which you can log on. When you log on in a domain, the domain controller or a logon server verifies that the username and password you supply match those in your existing user account.

In Windows NT Advanced Server domains, there are trust relationships between domains. Trust relationships let you access other domains even though you only have an account in one domain.

---

**NOTE:**

To log on, the network server running the Netlogon service and the MS-DOS workstation must both run the same protocol (for example, NetBEUI), and the workstation must run this protocol as its designated first protocol. If these conditions are not met, logon requests will fail.

---

**NOTE:**

If you are experiencing problems logging on, see your network administrator.

## Viewing Information About User Accounts

If your workstation participates in a LAN Manager logon domain, you can view your username, account privileges, date of last logon, and logon times, among other information, as they are listed in your user account.



To view information about your user account

- 1 To view information about your account in the logon domain, set the current focus on your workstation. To view information about your account at a server, set the current focus on that server.
- 2 From the Accounts menu, choose Your account.

The View Your Account at \\computername dialog box appears.

If the current focus is set on your workstation, the computername displayed in the title of the dialog box is that of the LAN Manager primary domain controller or Windows NT Advanced Server domain controller. If the current focus is set on a server, the computername displayed in the title of the dialog box is that of the server.

You can enter a comment about yourself that others on a LAN Manager network can read, such as your office location or phone extension, in the User Comment text box. If you are logged on to a LAN Manager domain, this comment appears after your name in the Information on User username dialog box under the Users on a server or Users on a domain command in the View menu. It also appears when you type the net who username command from the command line. The User comment field can have as many as 48 characters. The Users on a server, Users on a domain and net who commands do not give information about Windows NT Advanced Server users or domains.

The Country code number specifies the language in which servers display messages. For more information about country codes, see Appendix A, "Country Codes."

Except for the User comment and Country code text boxes, you cannot change the information in this dialog box.

- 3 Choose the Logon times button.

The Hours You May Log Onto Server \\computername dialog box appears.

The Hours You May Log Onto Server \\computername dialog box displays the times during which you can use the server's resources. Your administrator determines these times. You cannot edit any of the fields in this dialog box.

- 4 Choose the Done button.
- 5 Choose the OK button.

## Changing Your Password

You sometimes have to change the password for your account--for example, when your password is about to expire. If your account information is kept on a LAN Manager server, LAN Manager alerts you when you need to change your password.

See your administrator if you forget your password.

If your account information is kept on a LAN Manager server, several weeks before your password expires, you will be notified when you log on that you need to change your password. It is strongly recommended that you change the password during a network session before the day the password expires.

If you have not changed the password by the expiration date, you will be required to change the password in order to log on. You may then experience a delay before you are able to make network connections. (In later sessions, you will be able to make network connections as usual.)

To change your password

- 1 To change your password in your logon domain account, set the current focus on your workstation. To change your password on a server, set the current focus on that server.
- 2 From the Accounts menu, choose Change Your Password.  
The Change Password at \\computername dialog box appears.
- 3 In the Old password box, type your current password.
- 4 In the New password box, type a new password.
- 5 Choose the OK button.

## Starting LAN Manager Services

You must start the Workstation service before you can log on to the network, start any other LAN Manager service, or use the LAN Manager screen. When you start the Workstation service, LAN Manager Enhanced automatically starts the Messenger and Netpopup services. Or you can start one of these services individually--if you stopped it temporarily--by specifying its name from the command line.

When you start a service, you can adjust certain aspects of its configuration. For example, you can specify a computername when starting the Workstation service, or you can specify a log file for storing messages when starting the Messenger service. These adjustments are made by including an option on the command line. Specifying an option on the command line temporarily overrides the default setting for the service. When the service stops and restarts, the default setting is restored.

Always consult your administrator before including an option when starting a service. The options available with each service are listed on its “Net Start” reference page in Chapter 5, “Enhanced Reference.”

To start a service

1 Type `net start service [options]`.

For more information about starting services, see “Net Start Messenger,” “Net Start Netpopup,” and “Net Start Workstation” in Chapter 5, “Enhanced Reference.”

## Stopping LAN Manager Services

When you stop the Workstation service, all network services stop, and connections to the network end. You must restart the Workstation service and log on if you want to use the network again.

Alternatively, you can pause your workstation, which is similar to stopping your workstation but doesn't log you out or cancel connections. Pausing puts your workstation on hold but keeps your username and password active. It also pauses the Messenger and Netpopup services. For more information about pausing services, see "Pausing LAN Manager Services," later in this chapter.

---

**NOTE:**

Do not load terminate-and-stay-resident (TSR) programs after the Workstation service has been loaded. LAN Manager Enhanced is a TSR program, which means that it stays in your workstation's memory even after you stop the program. If other TSR programs are loaded into your workstation's memory after the Workstation service is started, the **net stop** command may not work. If this occurs, remove the other TSR programs and try again.

---

To stop the workstation service

- Type **net stop workstation**.

For more information about stopping LAN Manager services, see "Net Stop Workstation" in Chapter 5, "Enhanced Reference."

## Pausing LAN Manager Services

You can pause all running LAN Manager services by pausing the Workstation service. Or you can pause services individually by specifying the service name from the command line. Pausing a service puts it on hold. Unlike stopping, pausing does not cancel connections or change settings.

When you pause the Workstation service, you can use your computer's devicenames for local resources instead of shared resources. For example, the LPT1: devicename might be assigned to a shared printer queue. By pausing the Workstation service, you can use the devicename for a printer attached to the LPT1 port on your computer.

To pause a service

- Type `net pause service`.

For more information about pausing a service, see “Net Pause” in Chapter 5, “Enhanced Reference.”

## Continuing LAN Manager Services

When you continue a service, it resumes running as it was before you paused it.

To continue a service

- Type `net continue service`.

For more information about continuing a service, see “Net Continue” in Chapter 5, “Enhanced Reference.”

## Pausing and Continuing Connections to Resources

In addition to pausing a service, you can pause your workstation's connections to shared directories and printer queues.

When you pause connections, your workstation no longer recognizes the devicenames assigned to the connections. If you assigned a local devicename to a network connection (for example, LPT1), pausing the connection lets you use the devicename for a local resource.

You use the **drdr** option with the **net pause** and **net continue** commands to pause and continue connections to shared directories. You use the **prdr** option to pause and continue connections to shared printer queues.

To pause and continue connections to shared directories or printer queues

- Pause connections to shared directories or printer queues by typing:

```
net pause {drdr | prdr}
```

- Continue connections to shared directories or printer queues by typing:

```
net continue {drdr | prdr}
```

For more information about using these options, see “Net Pause” and “Net Continue” in Chapter 5, “Enhanced Reference.”

## Viewing the Workstation Configuration

Your workstation configuration includes information such as your username and the domains that you participate in.

To view your workstation's configuration

- 1 From the Config menu, select Workstation options.

The View Configuration dialog box appears.

Xs in the Messenger and Netpopup fields mean the services are running. You cannot change these fields in this dialog box.

- 2 Choose the Done button.



## Using Home Directories

Your administrator may have set aside a directory on a remote server for your own personal use. This directory is your home directory.

For a LAN Manager Enhanced workstation, you can assign a drive letter to your home directory with the command:

```
net use drive: /home
```

You can use your home directory to store files, create and remove subdirectories, and perform any other tasks that you ordinarily perform with a directory on your workstation. Your administrator can also set LAN Manager permissions for files and subdirectories, allowing other people to use the contents of your home directory. Your administrator can also monitor the disk space used for your home directory.

For information about permissions, see “Net Access” and “Net Use” in Chapter 5, “Enhanced Reference.”

## Exiting the LAN Manager Screen

Exiting the LAN Manager screen returns you to the MS-DOS prompt but does not log you off from the network or stop LAN Manager Enhanced services. From the command line, you can still use the connections you set up with the LAN Manager screen. For more information about using the command line, see Chapter 5, “Enhanced Reference.”

To exit the LAN Manager screen

- 1 Press ESC to close each open dialog box.
- 2 Do one of the following:
  - Press ALT+F4.
  - From the View menu, choose **Exit**.

The LAN Manager screen disappears, and the MS-DOS prompt appears on your workstation's screen.

To restart the LAN Manager screen

- Type **net**.

## Quitting LAN Manager Enhanced

Quitting LAN Manager Enhanced involves two steps:

- Logging off from the network
- Stopping the Workstation service

Logging off from the network is described in the next section. For details on stopping the Workstation service, see “Stopping LAN Manager Services,” earlier in this chapter.

### Logging Off from the Network

Logging off from the network removes your username and password from your workstation and cancels any existing connections to shared resources, but it does not stop LAN Manager Enhanced services. Log off when you won't be using your workstation for a while. That way, no one else can use your identity and your workstation to access resources.

To log off from the network

- 1 From the Config menu, choose Log off from LAN.

If you are connected to shared resources on the network, the logoff message box appears.

- 2 To continue logging off, choose the OK button.

The confirmation message box appears.

- 3 Choose the OK button.

After you log off, you can't use any shared resources. However, the Workstation service is still running.

If you are still using the LAN Manager screen, you can log on again from the screen.

To log on again

- 1 From the Config menu, choose Log on to LAN.

The Log Onto Network message box appears.

## Getting Started with LAN Manager Enhanced

### Quitting LAN Manager Enhanced

- 2 In the Password box, type your password.
- 3 Choose the OK button, and then press ENTER.

To log on again from the MS-DOS prompt

- 1 Type **net**.  
The Log Onto Network message box appears.
- 2 In the Password box, type your password.
- 3 Choose the OK button, and then press ENTER.

## Starting LAN Manager Enhanced Automatically

LAN Manager Enhanced commands that you can type at the MS-DOS prompt can be put in a batch program so that they run automatically. A batch program contains groups of commands. When you run a batch program, you can perform a series of tasks without typing their individual commands.

To start the Workstation service when you start your workstation, put the following command in the AUTOEXEC.BAT file (before any other network-related commands):

```
net start workstation
```

---

***NOTE:***

To maintain network security, do not put your password in a batch program.

To learn more about batch programs, see your MS-DOS manual(s). For more information about LAN Manager Enhanced commands, see Chapter 5, “Enhanced Reference.”

## Running Other Network Protocols

The computer resources you need may be on more than one network, each of which uses its own communications protocol. Demand Protocol Architecture (DPA) allows you to load a protocol when you need to connect your workstation to a resource on the network that uses that protocol, and then unload it when you are done, thereby freeing your workstation's memory for other tasks. Your network administrator can tell you whether you will need to use DPA and the names of the protocols being used.

To load a protocol

- Type **load protocol**.

To unload the last-loaded protocol and break the connection

- Type **unload protocol**.

To view a list of loaded protocols

- Type **load /i**.

You may be using a permanently loaded protocol that cannot be dynamically loaded or unloaded. Permanently loaded protocols will not appear in response to the **load /i** command.

If you want one or more protocols to always load when you start your workstation, include the **load** command in your AUTOEXEC.BAT file (after the net start workstation line).

## **Using the TEMP Environment Variable**

If you are using MS-DOS version 5.0 and want to set the temp environment variable to an HPFS386 drive on a remote server, be sure you have Create permission on that drive. This is not an issue if you are using a version of MS-DOS earlier than version 5.0, or if you are using a non-HPFS386 drive.

Getting Started with LAN Manager Enhanced  
Using the TEMP Environment Variable



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## **Using Shared Directories**

*A shared directory* is a disk directory on a server that contains files to which users on a network have access. Using a shared directory, one person can write a report, another person can review it, and a third person can format and print it, all without passing a floppy disk around the office.

## Using Shared Directories

This chapter explains how to use shared directories. It includes procedures for viewing, connecting to, and disconnecting from a shared directory, and for seeing which shared directories your workstation is connected to. In addition, the command-line syntax for moving and copying files over the network is provided.

## Viewing Shared Directories

The first step in using a shared directory is seeing which directories and other resources are available to you. To see which shared resources are available to you, the Workstation service must be running, and you must be logged on to the network. For information about starting the Workstation service and logging on, see Chapter 1, “Getting Started with LAN Manager Enhanced.”

Once you start the Workstation service and log on to the network, you can use the LAN Manager screen to display a list of the servers you can view. This list includes servers in your workstation domain, your logon domain, and other domains (if any) specified in the LANMAN.INI file. The LANMAN.INI file is an initialization file that determines default settings for workstations on a network.

### To view shared directories

- 1 In the list of servers on the LAN Manager screen, set the current focus on the server that has shared directories you want to view.
- 2 From the View menu, choose Available resources.  
The Resources Available at `\\computername` dialog box appears.  
Shared directories are listed as Disk in the Type column.
- 3 Choose the Done button.

## Connecting to a Shared Directory

Connecting to a shared directory allows you to use the directory as if it were a disk drive on your workstation. When you connect to a shared directory, you can use files or programs in that directory. You can also copy files or programs to the directory for use by others. When you connect to a shared directory, you assign a devicename to the directory. A devicename is a name by which your computer identifies a device. In this case, the device is the disk drive the directory you are connected to is on. A disk drive devicename is a letter followed by a colon.

### To connect your workstation to a shared directory

- 1 Set the current focus on the server with the shared directory you want to use.
- 2 From the View menu, choose Available resources.

The Resources Available at `\\computername` dialog box appears. The list box displays available resources on the server you specified. Shared directories are listed as Disk in the Type column.

- 3 In the list box, select the directory to which you want to connect.
- 4 Choose the Use Resource button.

The Use the resource `\\computername\sharename` dialog box appears.

LAN Manager Enhanced provides the next available devicename in the Local device text box, but you can type a different devicename over the one that appears.

- 5 In the Password text box, type a password if needed.
- 6 Choose the OK button.
- 7 Choose the Done button.

Your workstation connects to the directory you selected. You can now use the directory the same way you use your workstation's disk drives. The connection exists as a logical disk drive on your workstation.

## Connecting to a Shared Directory Without Setting the Focus

The LAN Manager screen allows you to connect your workstation to shared directories on servers other than the server of current focus. This includes servers that are not visible on the LAN Manager screen and servers in other domains.

LAN Manager Enhanced also lets you connect your workstation to servers on the network that are not running LAN Manager. Because non-LAN Manager servers have different interfaces, their computernames do not appear on the LAN Manager screen. Instead, you connect by specifying each server's path in a dialog box.

To connect to a directory on a server other than the server of current focus

- 1 From the View menu, choose Used resources.

The Resources in Use by username at `\\computername` dialog box appears.

- 2 Choose the Add use button.

The Use a Network Resource dialog box appears.

LAN Manager Enhanced preselects Disk in the Type of Use box and provides the next available devicename in the Local device box. You can type a different devicename over the one that appears.

- 3 In the Network resource box, type the network path of the shared directory — for example, `\\computername\sharename`
- 4 In the Password box, type a password if needed.
- 5 Choose the OK button.
- 6 Choose the Done button.

## Controlling Persistent Connections

If you often use the same connections (for example, you connect to the same printer every day), having LAN Manager save and restore your connections can save you time and trouble. LAN Manager provides the persistent connections feature, which saves the connections you have when you log off and restores them the next time you log on (if the resources are currently available).

## Using Shared Directories

### Connecting to a Shared Directory

You use the `net use` command to control the persistent connections feature. By default, the persistent connections feature is turned on.

To change the settings for persistent connections

- Type `net use /p[ersistent]:{yes | no | freeze | save}`.

The **yes** setting saves all connections as they are made, and restores them the next time you log on. This is the default setting.

The **no** setting does not save or restore connections.

The **freeze** setting stops saving connections.

The **save** setting saves your current connections, overwriting any previously saved connections. These settings will be restored each time you log on. Connections made after using the `net use /p:save` command are neither saved nor restored.

### Connecting to an IBM LAN Server Resource

If the directory you are connecting to is on an IBM® LAN Server, it may be known by an alias. The alias is a short name that replaces the full path to the resource. To use the resource from LAN Manager, you must supply the full path, since LAN Manager does not support this naming convention.

### Making a Onetime Connection to a Shared Directory

You can use a shared directory without assigning a devicename to the connection. For example, to use Microsoft Word to edit the LIST.DOC file in the shared directory with the network path `\\SALES\FARWEST`, start Word and load the file by typing

```
word \\sales\farwest\list.doc
```

Microsoft Word loads the shared file even though you haven't made a previous connection to `\\SALES\FARWEST`. Note that this procedure doesn't work when you need a password to gain access to `\\SALES\FARWEST`. In this case, you must first establish access to the directory.

### **If You Have Trouble Connecting**

When you try to connect, you may see this error message:

**SYS0071: The network request was not accepted.**

This may mean that the server has reached its limit for simultaneous connections or there may be some problem with the server or with your account. Contact your network administrator for help.

In rare cases, you may get an “out of resources” message. If this happens, you probably need to increase the values for the **sessions** and **ncbs** keywords in the LANMAN.INI file. See the *Installation Guide for Clients* for more information on the LANMAN.INI file.

## Viewing Your Connections to Shared Directories

You can view directories connected to your workstation anytime during a working session.

To view directories connected to your workstation

- 1 From the View menu, choose Used resources.

The Resources in Use by username at `\\computername` dialog box appears. Devicenames D: through Z: in the Device column identify connections to shared directories.

- 2 Choose the Done button.



## Copying Files over the Network

Use the **net copy** command to copy a file over the network, to or from your workstation, or between servers. The MS-DOS **copy** command can be used in place of **net copy**, but **net copy** is faster when both the source and the destination are on the same server. You can only copy files from the MS-DOS prompt.

To copy a file

- Type **net copy source [destination]**

For example:

```
net copy \\product\lists\sales.doc \\product\reports
```

For more information about copying files, see “Net Copy” in Chapter 5, “Enhanced Reference.”

## Moving Files over the Network

Use the **net move** command to move a file over the network, to or from your workstation, or between servers. You can only move files from the MS-DOS prompt.

The **net move** command differs from the **net copy** command in that it deletes a file at its source location when it moves the file.

To move a file

- Type **net move *source* [*destination*]**

If no destination is specified, the file moves to the current directory.

For more information about moving files, see “Net Move” in Chapter 5, “Enhanced Reference.”

---

## Running a Program on a Server

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**NOTE:**

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The **netrun** command can be used on LAN Manager OS/2 and UNIX servers, but not on Windows NT Advanced Servers or Windows NT workstations. It cannot be used to run interactive programs such as word processors or spreadsheets.

Use the **netrun** command to run a program on a LAN Manager OS/2 or UNIX server. You can run a program on a server only from the command line.

The server must be configured to accept remote program requests. See your administrator for help using this command.

To use the **netrun** command

- 1 Connect to a shared directory on the server with the **net use** command.
- 2 Change your current directory to the shared directory.
- 3 Type **netrun** followed by the filename of the program and any options or variables the program requires.

When you use **netrun**, the program output is sent to your screen unless you use the operating-system redirection symbol to send information to a file. To send information to a file, include >pathname in the **netrun** command line.

If the program being run has options or variables that include filenames, specify the full path for each file. If a drive letter is included in the path, LAN Manager assumes it's one of the server's drives.

For more information about running a program on a server, see "Netrun" in Chapter 5, "Enhanced Reference" or Chapter 7, "Basic Reference."

## Disconnecting from a Shared Directory

You can disconnect your workstation from a shared directory when you finish using a resource, or when you want to use the devicename for a different connection.

To disconnect your workstation from a shared directory

- 1 From the View menu, choose Used resources.  
The Resources in Use by username at `\\computername` dialog box appears.
- 2 Select the shared directory that you want to disconnect your workstation from.
- 3 Choose the Stop using button.
- 4 When prompted for confirmation, choose the OK button.
- 5 Choose the Done button.

---

## **Using Shared Printers**

With LAN Manager, you can print files by sending them from your workstation to shared printers through shared printer queues. This chapter explains shared printer queues and how to view, connect to, control, and disconnect from them.

## Printer Queues

A shared printer is a printer available to network users on a server. Users send their print jobs to the server, which passes them to a printer queue, where they are held until they are ready to print. Jobs sent to a printer queue print, one by one, usually in the order received.

Printer queues can be set up in two ways: One printer can handle jobs from several queues, or one queue can send jobs to several similar printers.

When a single printer receives jobs from several queues, the queues can have different priorities for printing. The printer might receive requests from a low-priority queue that accepts jobs from all network users, as well as from a high-priority queue that accepts jobs only from users who need files printed quickly.

When several printers receive jobs from a single queue, the server controlling the queue informs users which printer printed their jobs.

If the Messenger and Netpopup (or Winpopup or Minipop) services are running on your workstation, a message appears when your print job is printed. For information about the Messenger and Netpopup services, see Chapter 4, “Sending and Receiving Messages.”

## Viewing Printer Queues and Print Jobs

When you view a list of available printer queues, you can determine where to send a print job, or you can monitor jobs that you sent to a particular queue.

You cannot view the queue of an MS-DOS workstation running the LAN Manager Print Station utility.

To view printer queues and their print jobs

- 1 Set the current focus on the server sharing the printer queue that you want to view.
- 2 From the View menu, choose Printer queues.

The Print Queues on `\\computername` dialog box appears.

The Print Queues on `\\computername` dialog box displays the name, the number of waiting print jobs, and the status of each queue on the server you specified. Each print job is identified with a line containing the username, job number (assigned by the server), size of the job (in bytes), and status of the job.

When the list box containing the information about printer queues is more than one page long, scroll through the list to view its entire contents.

- 3 Choose the Done button.

## Connecting to a Printer Queue

Connecting to a printer queue allows you to use the queue as if a printer were attached directly to your workstation. You connect to a printer queue by assigning a devicename to the queue. You can use devicenames LPT1 through LPT3.

The procedure in this section is for connecting to printer queues on servers on which you can set the current focus. To connect to other queues, see the next section.

To connect your workstation to a printer queue

- 1 Set the current focus on the server sharing the printer queue that you want to use.
- 2 From the View menu, choose Available resources.

The Resources Available at `\\computername` dialog box appears.

Printer queues are listed as Printer in the Type column.

- 3 Select the printer queue that you want to use.
- 4 Choose the Use resource button.

The Use the resource `\\computername\sharename` dialog box appears.

LAN Manager Enhanced provides the next available devicename in the Local device box, but you can type a different devicename over the one that appears.

- 5 In the Password box, type a password if needed.
- 6 Choose the OK button.
- 7 Choose the Done button.

## Connecting to Printer Queues Without Setting the Focus

The LAN Manager screen allows you to connect your workstation to printer queues on servers other than the server of current focus. This includes servers that are not visible on the LAN Manager screen, servers in other domains, and MS-DOS workstations running the LAN Manager Print Station utility.



LAN Manager Enhanced also lets you connect your workstation to servers on the network that are not running Windows NT or LAN Manager. Because these servers have different interfaces, their names do not appear on the LAN Manager screen. Instead, you can connect by specifying the server's path in a dialog box.

To connect to a printer queue on a server other than the server of current focus

- 1 From the View menu, choose Used resources.

The Resources in Use by username at `\\computername` dialog box appears.

- 2 Choose the Add use button.

The Use a Network Resource dialog box appears.

- 3 In the Type of Use list box, select the 2 Printer option button.

LAN Manager Enhanced provides the next available devicename in the Local device box, but you can type a different devicename over the one that appears.

- 4 In the Network resource box, type the network path of the printer queue you want to use.

For example, to connect to the LASER queue on the `\\ADMIN` server, type:

```
\\admin\laser
```

To connect to a LAN Manager Print Station queue on an MS-DOS workstation, use LPT as the sharename. For example, to connect to the queue on the workstation `\\WILDWOOD`, type:

```
\\WILDWOOD\LPT
```

- 5 In the Password box, type a password if needed.
- 6 Choose the OK button.
- 7 Choose the Done button.

### Making a Onetime Connection to a Printer Queue

You don't have to assign a devicename to a printer queue if you only want to print one file. You can copy the file directly to a printer queue by specifying the network path as the destination of the **net copy** command.

## Using Shared Printers

### Connecting to a Printer Queue

For example, if your current directory contains the PHONE.LST file and you want to send the file to the HOLES printer queue on the \\ADMIN server, type:

```
net copy phone.lst \\admin\holes
```

LAN Manager Enhanced connects your workstation to the printer queue and copies the file to the queue for printing. After copying, the connection cancels. Note that this procedure doesn't work when you need a password to gain access to \\ADMIN\HOLES. In this case, you must first connect to the queue by assigning it a devicename.

### Printing over the Network

After you connect to a printer queue, you can use a printer queue as if a printer were attached to your workstation. You simply direct your print job to the devicename that you assigned to the queue. Many applications print to LPT1 by default.

In addition, you can send a file to print with MS-DOS commands by using the devicename assigned to the queue in the syntax for the command — for example:

```
copy report.doc lpt2:-
```

Or –

```
print /d:lpt2 report.doc
```

For more information about using the MS-DOS **copy** and **print** commands, see your MS-DOS manual(s).

## Viewing Your Connections to Printer Queues

You can view the printer queues connected to your workstation anytime during a working session.

To view your workstation's connections to printer queues

- 1 From the View menu, choose Used resources.

The Resources in Use by *username* at *\\computername* dialog box appears. If you have a connection to a printer queue, you see an LPT devicename under the Device column.

- 2 Choose the Done button.

## Holding, Releasing, and Deleting a Print Job

Holding a print job instructs the server to suspend printing until you release it. Deleting a print job removes it from the queue.

Your administrator can also hold, delete, or restart a print job. These actions may be necessary when a problem with the printer, such as a paper jam, causes printing to stop.

To hold a print job

- 1 Set the current focus on the server sharing the queue with the print job you want to hold.
- 2 From the View menu, choose Printer queues.  
The Print Queues on `\\computername` dialog box appears.
- 3 Select the print job that you want to hold.
- 4 Choose the Hold button.
- 5 Choose the Done button.

The job remains on hold until you release it.

To release a print job

- 1 Set the current focus on the server sharing the queue with the print job you want to release.
- 2 From the View menu, choose Printer queues.  
The Print Queues on `\\computername` dialog box appears.
- 3 Select the print job you want to release.
- 4 Choose the Release button.
- 5 Choose the Done button.

To delete a print job

- 1 Set the current focus on the server sharing the queue with the print job you want to delete.
- 2 From the View menu, choose Printer queues.  
The Print Queues on `\\computername` dialog box appears.

- 3 Select the print job you want to delete.
- 4 Choose the Delete button.
- 5 When prompted for confirmation, choose the OK button.
- 6 Choose the Done button.

## Disconnecting from a Shared Printer Queue

You can disconnect your workstation from a printer queue when you finish using the printer, or when you want to use the devicename for a different connection.

To disconnect your workstation from a printer queue

- 1 From the View menu, choose Used resources.  
The Resources in Use by username at `\\computername` dialog box appears.
- 2 Select the printer queue that you want to disconnect your workstation from.
- 3 Choose the Stop using button.
- 4 When prompted for confirmation, choose the OK button.
- 5 Choose the Done button.

### If a Print Job Fails to Send an End-of-Job Signal

In some cases, an application may not send an end-of-job signal that is recognized by the print spooler. Without this signal, the spooler cannot pass the job to the printer, and the spooler is not free to accept other jobs.

The `prtsc` utility solves this problem. The `prtsc` utility is a terminate-and-stay-resident (TSR) program. To load this utility, type:

```
prtsc
```

at the command line. To load the utility automatically, include it in the `wrkservices` entry and also in the `[services]` section of the `LANMAN.INI` file. For example, if `prtsc` is included in the `wrkservices` entry:

```
wrkservices = messenger,netpopup,prtsc,encrypt
```

then the `[services]` section should include the following:

```
prtsc = netprog\prtsc.exe
```

If the workstation has `prtsc` loaded, you can release the print job by pressing `CTRL+ALT+PRINT SCREEN`.

LAN Manager Enhanced workstations also have a time-out feature that sends an end-of-job signal if no data is sent to the spooler within a specified time.

## Managing a Shared Printer

---

**NOTE:**

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Read this section only if a shared printer is attached to your workstation. If you have a printer attached to your workstation, but are unsure if it is a shared printer, ask your administrator.

If a shared printer is attached to your workstation, follow the guidelines in the next section when using the printer. These guidelines not only ensure that you get the most out of your printer but also ensure that it is accessible to users at other workstations on the network. In addition to following these guidelines, you and your administrator often share responsibility for managing the shared printer.

This section describes the following:

Information on troubleshooting shared printers is provided in Appendix D, “Troubleshooting.”

- Guidelines for using a shared printer attached to your workstation
- Your administrator’s responsibilities for managing a shared printer
- Your responsibilities for managing a shared printer
- Maintaining a link to the server
- Disabling and enabling the printer

### Recommendations for Using a Shared Printer

Follow these recommendations when using your shared printer:

- Access your printer as a shared resource rather than a local resource. Accessing the printer as a shared resource enables you to:
  - Hold print jobs.
  - Supply reset sequences for the printer.
  - Print banner pages.
  - Use the server as a personal print spooler, queueing jobs before printing.
- Always use an unused port ID when you link to the printer queue on the server. Using the port ID that connects your printer to your workstation will prevent your



job and other jobs from printing. For example, if you have a shared printer attached to the LPT1 (or PRN) port on your workstation, link to the printer queue (or to other shared printer queues) using LPT2 or another port ID.

- If you must use your printer locally, use the MS-DOS **print** command, or disable the printer as a network resource and use it locally. For more information about the MS-DOS **print** command, see your MS-DOS manual. For information on disabling the printer, see “Disabling and Enabling the Printer,” later in this section.

### Administrator’s Responsibilities

Your administrator is often responsible for connecting the shared printer to your computer and ensuring that the appropriate LAN Manager Spooler Agent software is automatically loaded on your workstation. LAN Manager supports three workstation print spooling programs:

- The LAN Manager Print Station utility (**printsta** command) shares a workstation’s printer with one other workstation at a time, without involvement of a server.
- The LAN Manager Clispool program (the **clispool** command) supports the print spooler (the **print** command) that comes with MS-DOS. This program is only available if you have a LAN Manager for UNIX Systems server on your network.
- The LAN Manager Clipcach program (the **clipcach** command) supports the print spooler that comes with LaserTools™ PrintCache™ version 2.4a. This program is only available if you have a LAN Manager for UNIX Systems server on your network.

---

**NOTE:**

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LaserTools PrintCache must be purchased separately.

The Clispool and Clipcach programs receive print jobs sent through the server from workstations and pass them to the appropriate print spooling program for printing. For more information about the **clispool** and **clipcach** commands, see Chapter 5, “Enhanced Reference.” For more information about the LaserTools PrintCache software, see the LaserTools PrintCache manual.

With **clispool** and **clipcach** your administrator is also responsible for maintaining the printer queue (including such tasks as deleting jobs from other users) and for setting printer parameters.

For more information about the **printsta** command, see Chapter 5, “Enhanced Reference.”

---

**NOTE:**

---

The Print Station utility cannot be added simultaneously with **clispool** or **clipcach**; they are mutually exclusive.

### Your Responsibilities

You are responsible for the following tasks:

- Maintaining the printer’s link to the server (for **clispool** or **clipcach**)
- Disabling the printer when necessary

When you use the LAN Manager Print Station utility, you are fully responsible for the printer; print jobs come directly to your workstation and not through an intermediary server.

The remainder of this section provides information for maintaining the printer as a shared resource. Of course, the printer also requires the same routine maintenance any printer requires, such as maintaining the paper supply and replacing the ribbon or toner. For information about routine printer maintenance, see the guide packaged with your printer.

#### Maintaining the Link to the Server for Clispool or Clipcach

When a user sends a print job to the shared printer connected to your workstation, the server automatically establishes a link between itself and your workstation. This link uses the drive identification specified by your administrator. You do not need to establish this link yourself.

When you boot your workstation and automatically load the printing programs, the drive identification used for shared printing is displayed, along with a copyright notice. Do not use this drive identification for another link, because you might disrupt a print job.

#### Disabling and Enabling the Printer

You can disable the printer by turning it off or by using the **clispool** or **clipcach** command, depending on which print spooler you use. You may need to turn your printer off if it needs to be serviced. You may want to disable your printer using the **clispool** or **clipcach** command if you need

exclusive use of the printer or if you must use the printer locally. The printer queue continues to accept jobs, but the jobs will not print until you re-enable the printer.

---

**NOTE:**

---

If you want to use your printer locally without disabling it, use the **print** command. For example, type **print myfile**. At most, one print job from the server may print before your job is printed.

### Turning Off the Power

If you turn off your workstation or printer, any print jobs sent to the printer will accumulate in the printer queue on the server. These jobs will start printing when your workstation and printer are turned on again.

To disable the printer

- Type **clispool /d** or **clipcach /d** and press ENTER.

To enable the printer

- Type **clispool /e** or **clipcach /e** and press ENTER.

### Using the Print Station Utility

When the LAN Manager Print Station utility is started on a workstation, the workstation appears as a server to the network. This allows other users to connect to the printer, as they would to any other network printer. However, you cannot view the queue with the **net view** command.

In the default implementation of LAN Manager Print Station, print jobs are written to a file on the host computer (the one running **printsta**) and then sent to the printer. This process, called spooling, allows the person sending the print job to regain control of his or her computer without waiting for the job to print. If the disk space for temporary print files is not available, you can load LAN Manager Print Station with spooling disabled.

Printing takes place as a background task on the host computer; the person using that workstation will not be interrupted by print jobs from other users.

The Netpopup or Winpopup utility sends messages to the host workstation when the LAN Manager Print Station encounters errors such as “printer out of paper.”

Using Shared Printers  
Managing a Shared Printer

If you load Print Station in nonspooling mode, or if print jobs will be spooled from workstations running OS/2, you should not have messages sent to the host workstation. Loading Print Station in nonspooling mode automatically disables Netpopup or Winpopup. If jobs will be spooled from workstations running OS/2, disable Netpopup or Winpopup manually.

**Disabling and Enabling the Printer**

You can disable the printer by turning it off or by using the **printsta** command. You may need to turn your printer off if it needs to be serviced. You may want to disable your printer using the **printsta /d** command if you need exclusive use of the printer or if you must use the printer locally. The printer queue continues to accept jobs, but the jobs will not print until you re-enable the printer.

For more information, see Chapter 5, “Enhanced Reference,” or Chapter 7, “Basic Reference.”

---

## **Sending and Receiving Messages**

With LAN Manager Enhanced, you can exchange messages with other network users. Servers can send you messages about conditions that require your attention. You can store your messages in a *message log*.

## Sending and Receiving Messages

Workstations using several local area network adapters can exchange messages only through the first adapter.

This chapter discusses how to use the message features of LAN Manager Enhanced and provides procedures for sending a message or file, reading and managing your message log, and adding or deleting an alias.

---

***NOTE:***

---

Do not run the Messenger service on workstations running Norton® Commander 3.0. If messages are received at such a workstation, the computer will halt or reboot itself.

## Sending Messages

The Messenger service does not have to be running for you to send a message. However, it must be running for your workstation to receive messages.

You can send a message to an alias on the network or to a domain. An alias is a unique name that each user specifies. A workstation can have three kinds of aliases:

- A computername, which becomes an alias for a workstation when the workstation is added to the network
- An alias added with the Aliases command from the Message menu or with the **net name** command from the command line
- A username

A username does not necessarily become an alias when a user logs on to the network. This is because an alias must be unique on the network, but a user can be logged on at more than one workstation at a time. If a user logs on at several workstations, the username becomes an alias only at the first workstation where the user logs on.

A domain name is used like an alias for sending messages to a domain. All the workstations and servers that specify a domain as their workstation domain receive messages sent to the domain name.

### To send a message

- 1 From the Message menu, select Send a typed message.

The Send a Message dialog box appears.

LAN Manager preselects the Name option.

- 2 To send a message to a user, type that user's alias in the Name box.

If you are sending a message to more than one user, separate the aliases with a space. If you want a copy of the message, specify your own alias too.

- 3 To send a message to all the users in a domain, select the Domain option, and type the domain name.
- 4 In the Message box, type your message.

## Sending and Receiving Messages

### Sending Messages

The messages you send to all the users in a domain cannot exceed 128 characters.

- 5 Choose the OK button.



## Reading Messages

To receive messages from other users and from servers on the network, the Messenger service must be started. The Netpopup service must be started if you want messages to be displayed when you receive them.

---

**NOTE:**

If you are using LAN Manager with Microsoft Windows, your administrator may have configured your workstation to display messages only when the Windows operating system is running. If you are not seeing messages (from other network users or printer notifications, for example), see your administrator for information on how to change the configuration so that your workstation will display messages.

---

When your workstation receives a message, the Netpopup service displays the message in a message box on your screen for 1 minute. If the Netpopup service is paused, you can read your messages in the message log. If your workstation isn't running the Netpopup and Messenger services, you can't read the messages you receive, but your workstation beeps when a message arrives.

There are two ways to read messages: with the Netpopup service or in your message log. The message log is a file that stores your messages when they're received. By default, LAN Manager Enhanced stores messages in the MESSAGES.LOG file in the LANMAN.DOS\LOGS directory. Each workstation has its own message log.

### Using the Netpopup Service

When both the Messenger and Netpopup services are running, each new message appears in a message box on your screen.

The following is a typical message box:

To remove a message box from the screen, press ESC. Otherwise, the message box appears for one minute, and then disappears.

When you install LAN Manager on a workstation running the Microsoft Windows operating system, the LAN Manager Setup program installs the Winpopup utility instead of Netpopup. For details about Winpopup, see the *User's Guide for Microsoft Windows Clients*.

## Sending and Receiving Messages

### Reading Messages

If you ordinarily work only in Microsoft Windows and do not need Net-popup functionality in the MS-DOS environment, you can replace Winpopup with the smaller Minipop utility to save memory.

To replace Winpopup with Minipop

- 1 Exit the Windows operating system.
- 2 From your LAN Manager root directory, type **setup**.
- 3 From the Configuration menu, choose Workstation settings.
- 4 Make sure Yes is selected under Messaging Services, and then choose the OK button.
- 5 In the Support for the Windows Environment dialog box, Yes should be selected.
- 6 In the Messaging Popups dialog box, change the selection to Only while the Windows environment is running.
- 7 In the Configuration Complete dialog box, choose the Save button.

Your changes will take effect the next time you start the Workstation service.

### Reading Your Message Log

The message log is a file that stores a workstation's messages.

When a workstation receives messages for more than one user or alias, all the messages are stored in the same message log.

To read your message log

- 1 From the Message menu, choose Read message log file.  
The Contents of Current Message Log dialog box appears.  
Scroll through the list box to read your messages.
- 2 To delete the contents of the current message log from the message log file, choose the Clear log button.
- 3 When prompted for confirmation, choose the OK button.
- 4 Choose the Done button.

## Renaming the Message Log File

You can change the name of your message log by specifying a new path in a dialog box.

To change the name of the message log

- 1 From the Message menu, choose Log messages to file.  
The Specify Message Log File dialog box appears.
- 2 In the New file box, type the path of the new file, or use the Contents of path list box and the Dir button to select an existing filename.  
If you do not specify a path, the new log is stored in the LANMAN.DOS\LOGS directory. If you type a filename without an extension, LAN Manager Enhanced attaches the .LOG extension.
- 3 Choose the OK button.

## Stopping and Starting Message Logging

You can stop and restart message logging.

To stop message logging

- 1 From the Message menu, choose Log messages to file.  
The Specify Message Log File dialog box appears.
- 2 Press the SPACEBAR to select the Pause message logging check box.  
(An X in the check box means message logging pauses.)
- 3 Choose the OK button.

To restart message logging

- 1 From the Message menu, choose Log messages to file.  
The Specify Message Log File dialog box appears.
- 2 Clear the Pause message logging check box by pressing the SPACEBAR.
- 3 Choose the OK button.

Sending and Receiving Messages  
Reading Messages

### Printing Messages

Instead of storing your messages in a message log, you can print your messages as soon as they arrive. Note that you cannot print and then store messages. Messages that are printed are not stored in the message log.

To print messages as they arrive

- Type `net log devicename`.

To resume storing messages in a message log

- Type `net log [drive:path] filename`.

For more information about printing messages, see “Net Log” in Chapter 5, “Enhanced Reference.”

## Using Aliases

More than one person can receive messages at the same workstation. But because only one user can log on to a workstation at a time, you have to add an alias for every other person receiving messages at your workstation. You can't add an alias that is already in use at another workstation.

Aliases are deleted when the Messenger service stops. Therefore, each time you restart the Messenger service, you have to add all the aliases you want on your workstation. You may want to create a batch file that uses the **net name** command to add a list of aliases. For more information, see Chapter 5, "Enhanced Reference."

## Adding an Alias

You add an alias to your workstation by typing the alias in a dialog box. An alias can have as many as 15 characters.

---

**NOTE:**

---

Your administrator may need to make changes to the [messenger] section of the LANMAN.INI file if you want to add an alias.

To add an alias to a workstation

- 1 From the Message menu, choose Aliases.  
The Aliases for Messaging dialog box appears.
- 2 Choose the Add Alias button.  
The Add an Alias dialog box appears.
- 3 In the New alias box, type a new alias.
- 4 Choose the OK button.
- 5 Choose the Done button.

## Deleting an Alias

You can delete an alias on your workstation, or you can delete an alias that is forwarded to your workstation.

## Sending and Receiving Messages

### Using Aliases

To delete an alias from the workstation

- 1 From the Message menu, choose Aliases.  
The Aliases for Messaging dialog box appears.
- 2 Select the alias that you want to delete.
- 3 Choose the Delete button.
- 4 Choose the Done button.

---

***NOTE:*** You cannot delete a workstation's computername from the alias list.

---

---

## **Enhanced Reference**

This chapter contains a reference page for every LAN Manager Enhanced command and utility. Each page describes the purpose and syntax of the command or utility.

## **Abbreviating Commands and Options**

The reference pages in this chapter spell out all command and service names. If a command can be abbreviated, its abbreviation is listed on the reference page for the command. You can abbreviate any command option by typing enough letters to distinguish it from the command's other options.



## Using the /Yes and /No Options

Many LAN Manager Enhanced commands require confirmation to complete a task. To expedite this confirmation, you can append the **/yes** or **/no** option to the command. The **/yes** and **/no** options can be abbreviated **/y** and **/n**.

For example, the **net logon** command logs you on to the network. But when another user is already logged on at the workstation you are using, you must log off that user before you can log on.

To log on at a workstation at which another user is also logged on (your username is **chrisj** and your password is **daffodil**), type:

```
net logon chrisj daffodil
```

Be careful that no one sees your password. So that no one sees your password as you type, you can use an asterisk (\*) instead of your password. In this example you would type:

```
net logon chrisj *
```

LAN Manager Enhanced returns a series of prompts asking you to confirm logging off the current user and canceling the workstation's existing connections and prompting you for your password. You must respond to the yes/no prompt by typing **y** or pressing ENTER before you can proceed with the logon. To log on without prompts, add the **/y** option to the **net logon** command. Type:

```
net logon chrisj daffodil /y
```

Remember, you can protect your password by substituting an asterisk (\*). In this example, you would type:

```
net logon chrisj * /y
```

## Using Passwords with Commands

Some commands require a password to connect to a shared resource. With LAN Manager Enhanced, there are two ways to supply a password:

- Type the password with the command. For example, to provide the password `petunia` while assigning `LPT1` to the `LISTS` shared directory on the `\\ADMIN` server, type:

```
net use lpt1: \\admin\lists petunia
```

- Type an asterisk (\*) instead of the password. When you type an asterisk instead of a password, LAN Manager Enhanced prompts you for the password. For example, type:

```
net use lpt1: \\admin\lists *
```

LAN Manager Enhanced then displays this prompt:

```
Type the password for \\ADMIN\LISTS:
```

When you type the password at this prompt, the letters are not displayed. This keeps the password confidential.

## Controlling a Screen Display

Some commands (for example, net help) produce more than one screenful of text. In these cases, the screen scrolls automatically until you stop it.

To stop the display from scrolling

- Press PAUSE or CTRL+S.

To resume scrolling

- Press any key.

You can also use the MS-DOS **more** command to scroll one screen at a time. For example, to display one screenful of Help text at a time, type:

```
net help start workstation | more
```

Be sure to type the vertical bar, or pipe. To display another screenful, press any key at the --More-- prompt.

## Using Commands in Batch Programs

LAN Manager Enhanced commands can be used in batch programs (.BAT files), such as AUTOEXEC.BAT. For example, you can group the commands for starting the Workstation service, logging on to the network, and making network connections in one executable program. Command options can also be included in batch programs. To avoid confusion, do not abbreviate command options when putting commands in a batch program.

---

**NOTE:**

To maintain network security, do not put your password in a batch program. Instead, use an asterisk (\*) where the password would go, to be prompted for the password when the batch program is run. The password will not be displayed as you type it.

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## Command and Utility Summary

The following lists describe the LAN Manager Enhanced commands and utilities.

### Using the Network

To	Use this command
Log on	net logon
Log off	net logoff
Change your password	net password
Start the LAN Manager screen	net
Assign a drive letter to your home directory on a server	net use
Connect to a shared resource	net use
Disconnect from a shared resource	net use
Copy files from a source to a destination	net copy
Move files from a source to a destination	net move
Run a program or command on a LAN Manager OS/2 or UNIX system server	netrun
Send a message or short file to other users on the network	net send
Control print jobs	net print
Synchronize your workstation clock with the server or domain clock	net time
Load a different network protocol	load*
Bind a protocol that has been loaded statically	net bind*
Unload a network protocol (breaking any connections that use it)	unload*

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To	Use this command
Enable a workstation to emulate a terminal	kermit**
Access resources across a gateway (TCP/IP to TCP/IP)	addname*
Print jobs on a shared printer using LaserTools PrintCache software	clipcach**
Print jobs on a shared printer using the MS-DOS <b>print</b> command	clispool**
Print jobs on a shared printer without using a server to spool the jobs	printsta
Flush the print spooler, releasing a print job that has no end-of-job signal	prtsc*
Start NetWare using LAN Manager NetWare Connectivity	nwload*
Stop NetWare using LAN Manager NetWare Connectivity	nwunload**

\*This is a utility.

\*\*These commands are only available when you have a LAN Manager for UNIX Systems server on your network.

**Getting Information**

To	Use this command
Get general Help	net help
Get Help for a specific command	net help command
See an explanation of an error message	net helpmsg
See the time and date (on the server or domain)	net time
Learn what servers are available	net view
Learn what resources are shared on a server	net view

To	Use this command
Learn who is logged on a LAN Manager network	net who
Get information about a user on a LAN Manager network	net who
Learn about a shared printer queue	net print
Learn what settings are in effect for the Workstation service	net config workstation
Get Help with message logging	net log
See which version of LAN Manager is running	net version
Learn what workstation connections are in effect	net use
Learn which services are currently running on the workstation	net start
Get a list of the workstation's aliases	net name

### **Working with Services**

To	Use this command
Start a service	net start service
Pause a service	net pause
Continue a service	net continue
Stop a service	net stop
Change settings for a service	net config workstation

### **Other**

To	Use this command
Change a user's permissions for a directory or file on a LAN Manager server	net access
Add or delete aliases on a workstation	net name

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To	Use this command
Control message logging	net log
Check physical network connections (TCP/IP)	ping**

\*This is a utility.

### Using UNIX System Commands

To	Use this command
Change a user's permissions for a directory or file	uchmod*
Convert a UNIX System text file to MS-DOS	ud*
List files or directories, and display UNIX System access permissions	udir*
Rename or move a file using the UNIX operating system	uren*
Run a command or program on a LAN Manager server	netrun

\*These commands are only available when you have a LAN Manager for UNIX Systems server on your network.

### Getting Help from the Command Line

Several types of Help are available:

To get a list of commands and topics for which Help is available

- Type `net help`.

To display detailed information about a command

- Type `net help command`.

To display a command's options

- Type `net help command /options`.

To display a command's syntax

- Type `net command /?`.



For more information about getting Help with commands, see “Net Help,” later in this chapter.

### Getting Help with Error Messages

When an error occurs while you are using LAN Manager Enhanced, a message box appears that describes the error. To get Help with an error that is displayed while you are using the LAN Manager screen, press F1 while the message box is displayed. To get Help with an error from the command line, type **net helpmsg** and the number of the message you see in the message box.

To get Help with an error message

- Type **net helpmsg *message#***, where *message#* is the number associated with the error message.

For more information about getting Help with an error, see “Net Helpmsg,” later in this chapter.

## **Addname**

### **Purpose**

The **addname** utility lets TCP/IP users access resources of a server on a different TCP/IP network, using a network gateway.

### **Syntax**

**addname** *computername ipaddress*

**addname** *computername /delete*

**addname /load** | **/save** [*filename*]

where

*computername*

Is the name of the remote server whose entry you want to add or delete. Computernames can have as many as 8 characters (plus the .SERVE extension for LAN Manager for UNIX Systems servers). These computernames do not affect the assignment of any local computername or username.

*ipaddress*

Is the IP address that corresponds to computername. If the computername is stored in the LMHOSTS file, the new IP address temporarily replaces the existing IP address.

### **/delete**

Deletes the specified computername from the workstation's list of current entries but not from the LMHOSTS file.

### **/load**

Loads a set of entries from the specified file. All current entries are deleted, and all entries in the specified file are added. If there is not enough room for all new entries in the file, an error is reported, and no changes are made to the list of current entries. If you don't specify a filename, the default LMHOSTS file is used.

### **/save**

Stores the list of current entries in the specified file. All entries in the file are overwritten by the current entries. If you don't specify a filename, the default LMHOSTS file is used. To delete an entry from the default **addname**

configuration file, use **addname /save** after deleting the entry.

*filename*

Specifies the name of the file to load or save.

When you type **addname** with no options, the list of current **addname** entries is displayed.

### Comments

When your computer is configured as a LAN Manager workstation using TCP/IP, you can use the **addname** utility to access the resources of a server on another TCP/IP network accessible through a network gateway. The **addname** utility matches remote servernames to their IP addresses.

The **addname** utility temporarily adds entries to your workstation's memory. These entries are deleted when you unload TCP/IP from memory or when you restart your computer. To save the entries in the LMHOSTS file, use the **/save** option.

The **addname** utility can be used only when the TCP/IP software and the NetBIOS network software are loaded into your workstation's memory. You can add as many as four entries using **addname**.

### Examples

- To temporarily add the server FLAMINGO, whose IP address is 15.6.127.8, type:  
**addname flamingo 15.6.127.8**
- To see the list of current entries, type:  
**addname**
- To save the list of current entries in the LMHOSTS file, type:  
**addname /save**
- To delete the server FLAMINGO from the LMHOSTS file, type:  
**addname flamingo /delete**
- To load new entries from the file A:\USER\MYHOSTS, type:  
**addname /load a:\user\myhosts**

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This command deletes all existing entries before adding all entries from A:\USER\MYHOSTS. If there are more than 63 entries in A:\USER\MYHOSTS, an error occurs, and no changes are made to the list of current entries.

## Clipcach

### Purpose

The **clipcach** command enables an MS-DOS workstation to receive network print jobs from a server and to print these jobs on a shared printer physically connected to the workstation, using the LaserTools PrintCache software. This command is only available when you have a LAN Manager for UNIX Systems server on your network.

### Syntax

**clipcach /i /s:driveid [any | \\servername] [ /d | /e]**

**clipcach [any | \\servername] [/d | /e]**

where

#### **/i**

Loads **clipcach** into memory. To load **clipcach**, use this option only after you boot the workstation.

#### **/s:driveid**

Specifies the drive ID that **clipcach** will use to link to its spool directory on the server. Replace *driveid* with the intended drive ID. To load **clipcach**, use this option only after you boot the workstation. Do not add the colon after the drive ID, for example, enter only N for *driveid*.

#### **any**

Allows **clipcach** to accept print requests from any server. Unless you specify otherwise, **any** is the default when you load **clipcach**.

#### **servername**

Represents the name of the server from which **clipcach** will accept print requests. Replace *servername* with the name of the intended server. The *servername* must contain a maximum of 8 characters plus the .serve extension.

#### **/d**

Temporarily disables **clipcach**. Network print jobs will be submitted to the queue, but will not print while **clipcach** is disabled. The printer can continue to be used locally, however.

**/e**

Re-enables **clipcach**. Network print jobs will now be printed.

### Comments

**Clipcach** is an MS-DOS terminate-and-stay-resident (TSR) program that runs on the workstation to which a shared printer is connected. **clipcach** requires that the LaserTools PrintCache software be installed and loaded on the workstation to which the printer is connected. To receive print jobs from a server, **clipcach** automatically links to a shared spool directory on the server.

Placing PrintCache in raw or cooked mode is accomplished by using command-line switches to the PrintCache **print** command. In raw mode, tabs are not expanded and ^Z is not interpreted as the end of the file. In most cases, raw mode is acceptable for printing text files. Graphics files will not print while PrintCache is in cooked mode. Cooked mode may be required occasionally to print text files containing tabs if neither the printer nor the application generating the print job expands tabs. See the LaserTools PrintCache manual for more information.

### Examples

- To start the **clipcach** program automatically and use the N: drive, add the following line to your AUTOEXEC.BAT file:  

```
clipcach /i /s:N
```
- A shared printer is attached to your workstation and you want to use it locally. To do this you disable **clipcach** by typing:  

```
clipcach /d
```

With **clipcach** disabled, you can use your printer locally. Network print jobs will be submitted to the queue on the server but will only be printed while **clipcach** is enabled.
- When you are done using the printer locally, and want it to be used over the network, you enable **clipcach** by typing:  

```
clipcach /e
```

Network print jobs will now be printed.
- The shared printer attached to your workstation accepts print jobs from all the servers on your local area network. One of your coworkers needs to print out

several files as soon as possible. Your coworker will be sending these print requests from the server PRINT1.SERVE. To make sure that his or her files are printed in a timely manner, you allow the shared printer to accept requests from the PRINT1.SERVE server only by typing:

```
clipcach \\print1.serve u
```

- Once the files have printed, you once again allow the shared printer to accept print requests from all of the servers on the local area network by typing:

```
clipcach any
```

### See Also

For information about	See
Using clipcach	Chapter 3, “Using Shared Printers”
Other print spoolers	Clispool, Printsta

## Clispool

### Purpose

The **clispool** command enables an MS-DOS workstation to receive network print jobs from a server and to print these jobs on a shared printer physically connected to the workstation, using the MS-DOS **print** command. This command is only available when you have a LAN Manager for UNIX Systems server on your network.

### Syntax

**clispool /i /s:driveid [any | \\servername] [/r | /c] [/d | /e]**

where

#### **/i**

Loads **clispool** into memory. To load **clispool**, use this option only after you boot the workstation.

#### **/s:driveid**

Specifies the drive ID that **clispool** will use to link to its spool directory on the server. Replace driveid with the intended drive ID. To load **clispool**, use this option only after you boot the workstation. Do not add a colon after the drive ID; for example, enter only N for driveid.

#### **any**

Allows **clispool** to accept print requests from any server. Unless you specify otherwise, **any** is the default when you load **clispool**.

#### **servername**

Represents the name of the server from which **clispool** will accept print requests. Replace servername with the name of the intended server. The servername must contain a maximum of 8 characters plus the .SERVE extension.

#### **/r**

Places the MS-DOS **print** command into raw mode, which permits the printing of graphics files. In raw mode, tabs are not expanded and ^Z is not interpreted as the end of the file. In most cases, raw mode also is acceptable for printing text files, since tabs in text files are usually expanded by the printer or the application generating the print job. Unless you specify otherwise, raw mode is the default whenever you load **clispool**.



### **/c**

Places the MS-DOS **print** command into cooked mode. In cooked mode, tabs are expanded, and ^Z is interpreted as the end of the file. Graphics files will not print while **print** is in cooked mode. Cooked mode may be required occasionally to print text files containing tabs if neither the printer nor the application generating the print job expands tabs.

### **/d**

Temporarily disables **clispool**. Network print jobs will be submitted to the queue but will not print while **clispool** is disabled. The printer can continue to be used locally, however.

### **/e**

Re-enables **clispool**. Network print jobs will now be printed.

## **Comments**

To access the **clispool** command, first link to the appropriate shared directory. This command is stored in the DOSUTIL shared directory on a LAN Manager for UNIX Systems server. To perform this command, you must first link to this shared directory as in the following example:

```
net use d: \\server1.serve\dosutil
```

**Clispool** is an MS-DOS terminate-and-stay-resident (TSR) program that runs on the workstation to which a shared printer is connected. **Clispool** requires that the MS-DOS **print** command be installed and loaded on the workstation to which the printer is connected. To receive print jobs from a server, **clispool** automatically links to a shared spool directory on the server.

## **Examples**

- To start the **clispool** program automatically and use the N: drive, add the following line to your AUTOEXEC.BAT file:  

```
clispool /i /s:N u
```
- A shared printer is attached to your workstation and you want to use it locally. To do this you disable **clispool** by typing:  

```
clispool /d
```
- With **clispool** disabled, you can use your printer locally. Network print jobs will be submitted to the printer's queue but will only be printed while **clispool** is

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enabled.

- When you are done using the printer locally and want it to be used over the network, you enable **clispool** by typing:

```
clispool /e
```

Network print jobs will now be printed.

- The shared printer attached to your workstation accepts print jobs from all the servers on your local area network. One of your coworkers needs to print out several files as soon as possible. Your coworker will be sending these print requests from the server PRINT1.SERVE. To make sure that his files are printed in a timely manner, you allow the shared printer to accept requests from the PRINT1.SERVE server only by typing:

```
clispool \\print1.serve u
```

- Once the files have printed, you once again allow the shared printer to accept print requests from all of the servers on the local area network by typing:

```
clispool any
```

### See Also

For information about	See
Using clispool	Chapter 3, “Using Shared Printers”
Other print spoolers	Clipcach, Printsta

## Kermit

### Purpose

The **kermit** command enables an MS-DOS workstation to emulate a terminal in order to log on to a UNIX system host computer, upload and download files with a host that is also running Kermit, or exchange files with another workstation running the Kermit terminal emulator. This command is only available when you have a LAN Manager for UNIX Systems server on your network.

### Syntax

**kermit** [*command*, ... ]

where *command* is any valid Kermit command.

### Comments

To access the **kermit** command, first link to the appropriate shared directory. This command is stored in the DOSUTIL shared directory on a LAN Manager for UNIX Systems server. To perform this command, you must first link to this shared directory as in the following example:

```
net use d: \\server1.serve\dosutil
```

The **kermit** command is a full-featured terminal emulator and file transfer utility. For more information on Kermit, see Appendix C, "Connecting to a LAN Manager for UNIX Systems Server." For a complete description of all the options and features, see your Kermit documentation. The functions provided by Kermit allow you to:

- Create and use Kermit command scripts to automatically log on and transfer files.
- Redefine the keyboard so that any key can send any character or string while you communicate with a host computer.
- Define Kermit command macros.
- Start Kermit and execute Kermit commands from a batch file.
- Transfer files between two workstations running Kermit, and execute certain

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MS-DOS commands remotely between the workstations.

- Use Kermit over the local area network or over a serial port.
- Change the type of terminal Kermit emulates, and set terminal attributes.
- Use your printer from Kermit.
- Customize the colors in the Kermit screen.

Source code for Kermit on many different computers and operating systems is available from Columbia University, which holds the copyright to the file transfer protocol and to many Kermit implementations.

## Load

### Purpose

The **load** utility loads the specified protocol on workstations using Demand Protocol Architecture (DPA).

### Syntax

**load** *protocol* [/i]

where

*protocol*

Is the name of the protocol to be loaded. Information regarding protocols is placed in the PROTOCOL.INI file and in LANMAN\DRIVERS\PROTOCOL by the installation program. You should not edit these files yourself.

/i

Displays a list of protocols and the order in which they were bound.

### Comments

By default, the network (and protocol) are specified in the AUTOEXEC.BAT file. The **load** utility allows you to load protocols as you need them.

Do not use the **load** utility while running the Microsoft Windows operating system. Either load the protocol before running the Windows operating system, or stop the Windows operating system, load the protocol, and then restart the Windows operating system.

You may need to load a secondary protocol to access certain network resources. If you were using such a resource when you logged out, and the required protocol is not automatically loaded when you log on again, and you are using the persistent connections feature, you will receive a message that the resource is unavailable. You will be able to reconnect to the resource after you load the required protocol.

---

**NOTE:**

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In order to use DPA to load protocols, the line **dynamic = yes** must be included in the [protman] section of the PROTOCOL.INI file. Also, in the CONFIG.SYS file, the line specifying the protocols to be used must come before the line that begins **device =** and contains **\protman.dos**.

**See Also**

For information about            See

Other Demand Protocol        unload  
Architecture utilities

Installing and configuring    *Installation Guide for Clients*  
protocols

## Net

### Purpose

The **net** command starts the LAN Manager screen.

### Syntax

**net** [/mono]

where **/mono** improves the quality of the LAN Manager screen on a workstation with a monochrome screen display. Use this option if you have difficulty viewing the LAN Manager screen on your workstation.

### Comments

After you type **net**, the LAN Manager screen appears.

From this screen, you can use menus and dialog boxes to perform network tasks. To exit this screen, select the Exit button from the View menu.

### See Also

For information about	See
The LAN Manager screen	Chapter 1, “Getting Started with LAN Manager Enhanced”

## Net Access

### Purpose

The **net access** command displays the permissions for using a shared directory or file on a LAN Manager server. It can also be used to change the permissions on LAN Manager servers. The **net access** command does not work with Windows NT servers.

Note that you must have P permission for a resource to get information about it with **net access**. For more information, see your network administrator.

### Syntax

```
net access drive:path [/add name:permission[ ...]  
net access drive:path [/change name:permission[ ...]  
net access drive:path [/grant name:permission[ ...]  
net access drive:path [/revoke name:permission[ ...]
```

where

#### *drive*

Is the devicename assigned to a shared directory containing the resource with permissions you want to change. This devicename must be assigned to a shared directory.

#### *path*

Is a resource with permissions you want to change.

#### *name*

Names one or more users or groups who are to change permissions.

#### *permission*

Is one to seven letters (R, W, C, X, D, A, P) representing the types of permissions you want to display or change. See below for the definitions of these letters.

#### **/add**

Creates a new set of permissions for a resource that has none assigned. To create more than one user or permission while assigning a new set of permissions, type several *name:permission* strings separated by spaces. Before you can grant or



revoke permissions for that resource, you must create a set of permissions for a resource. To control the resource, give yourself P permission.

### **/change**

Changes one or more users' permissions for a resource. To change more than one user's permission, type several *name:permission* strings separated by spaces.

### **/grant**

Assigns additional permissions to a resource's existing set. To assign more than one permission, type several *name:permission* strings separated by spaces.

### **/revoke**

Cancels one or more users' permissions for a resource. To cancel permission for more than one user, type several *name:permission* strings separated by spaces.

### **Comments**

When your administrator assigns you a home directory (a directory on a server for your personal use) you can control this directory and the files on it so that only certain other users have access to them. You control access to your home directory by granting permissions after you connect to the server where your home directory resides. Permissions control a user's access to a file or directory.

Permissions and what they allow a user to do are as follows:

Permission	Description
R (read)	Read and copy files, and view subdirectories.
W (write)	Make changes to files.
C (create)	Create files and subdirectories.
X (execute)	Run a command or program.
D (delete)	Remove files and subdirectories.
A (attributes)	Change MS-DOS file attributes. For information about file attributes, see your MS-DOS manual(s).

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Permission	Description
P (permissions)	Assign or alter permissions for a resource. Your administrator initially must give you this permission for a resource. Once you have it, you can use <b>net access</b> to assign permissions, including P permission, to other users or groups. When you create a new file or directory, be sure to assign yourself P permission. Otherwise you are denied further access to the file or directory you just created.

When you use **net access**, you must specify the devicename assigned to the shared directory and the path of a resource. When you specify a drive (or path) with **net access**, you get information about a resource's current set of permissions, as shown in the following example:

Resource	Permissions	Permissions
D:\MASTERDIR	BILLRA:RWCXDAP *CORPOP:RWCDA	*USERS:RWCDA

This lists the resource you specified and gives a two-column list of usernames and groupnames representing those who can use the resource. Groupnames are marked with an asterisk (\*). Following each username and groupname is a list of the permissions assigned to the user or group.

You must have P permission for a resource to get information about it with **net access**.

If you create a new file or directory and want to assign permissions to it, first use the **/add** option to specify which users and groups have access. Be sure to add yourself (with P permission), or you are denied subsequent access to the new file or directory.

Use the **/grant** and **/revoke** options to add and cancel permissions for users and groups. Use the **/change** option to change existing permissions for a resource.

If you create a file in a directory with permissions, the new file inherits the directory's permissions. Use the **net access** command only if you want to change the file's permissions.

### Examples

- To view the permissions for the shared directory that connects to the G: devicename, type:

```
net access g:
```

- To add the user jamesro with read and write permissions to the users on the shared directory that connects to the G: devicename, type:

```
net access g: /grant jamesro:rw
```

### See Also

For information about	See
Connecting to shared resources	Net Use

## Net Config Workstation

### Purpose

The **net config workstation** command displays the current settings for a workstation.

### Syntax

**net config workstation**

### Comments

The **net config workstation** command displays settings for a workstation, such as the logon domain and the username.

### Example

- To display the current settings for a workstation, type:

```
net config workstation
```

### See Also

For information about	See
Controlling and adjusting services	Chapter 1, “Getting Started with LAN Manager Enhanced”
Changing workstation settings when starting the Workstation service	Net Start Workstation

## Net Continue

### Purpose

The **net continue** command reactivates services or network connections suspended with the **net pause** command.

### Syntax

**net continue {workstation | messenger | netpopup | drdr | prdr}**

where

#### **workstation**

Continues all workstation connections, including the Messenger and Netpopup services.

#### **messenger**

Continues the Messenger service.

#### **netpopup**

Continues the Netpopup service. Type **minipop** instead if your workstation is configured to display messages only when the Windows operating system is running.

#### **drdr**

Continues all workstation connections to shared directories.

#### **prdr**

Continues all workstation connections to shared printer queues.

### Comments

You can abbreviate the **net continue** command as **net cont**.

### See Also

For information about	See
Pausing and continuing a service or connections using the LAN Manager screen	Chapter 1, "Getting Started with LAN Manager Enhanced"

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For information about	See
Pausing a service or network connections	Net Pause

## Net Copy

### Purpose

The **net copy** command copies files across the network from a source to a destination.

### Syntax

**net copy** *source*[+*source*[+...]] [/a | /b] [*destination* [/a | /b] [/v]]

where

*source*

Specifies one or more files, directories, or devicenames to copy. You can specify multiple files by separating filenames with a plus sign (+) or by using MS-DOS wildcard characters.

*destination*

Specifies to which file, directory, or devicename *source* copies.

/a

Treats the source or destination as ASCII text.

/b

Treats the source or destination as a binary file.

/v

Verifies that information is properly recorded on the destination disk.

### Comments

The **net copy** command is similar to the MS-DOS **copy** command, but it is much faster for copying between directories on a server. You don't have to connect to shared directories to use the **net copy** command. LAN Manager Enhanced makes the connections for you during a copy.

You usually use the **net copy** command to copy files, but source can also be a directory (to copy all files in the directory), a devicename (such as A:, to copy all files in the current directory of drive A), or the MS-DOS **con** command (to copy what you type at the keyboard). *Destination* can be a devicename (such as LPT1:, to copy to the device connected to LPT1) or it can be a network path.

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When *source* is a filename, the file is assumed to be in the current directory on the current drive.

When *destination* is an existing file, the file is overwritten. If *destination* is a file that does not already exist, a new file is created. The new file is given the same name, creation date, and creation time as the source file.

When you specify only a drive as the destination, LAN Manager Enhanced copies to the current directory on that drive. When you specify no drive, the source copies to the current drive and directory.

The **net copy** command creates temporary connections between your workstation and directories shared by other network users as part of the copying process. When you have many connections to shared directories and no remaining drive letters to assign to the temporary connection that **net copy** needs to create, the **net copy** command fails. To correct this problem, temporarily end one of your connections before using **net copy**.

You cannot use the **net copy** command if you have used any of the switches while setting the MS-DOS environmental variable `comspec`. You can set the variable with a command such as

```
set comspec=c:\dos\command.com
```

However, if you specify any options such as **/p** or **/c**, you will be unable to use the **net copy** command.

### Using the **/a** or **/b** Option

The **/a** and **/b** options perform differently depending on whether they follow *source* or *destination*. The **/a** option is in effect in both cases unless the **/b** option is specified.

With the **/a** option the file is treated as ASCII text:

- When you place **/a** after *source*, the copy stops before the first end-of-file character (an invisible character that signifies the end of a file).
- When you place **/a** after *destination*, an end-of-file character is added as the last character of the new file.

With the **/b** option the file is copied in binary format:

- When you place **/b** after *source*, all end-of-file characters are copied.
- When you place **/b** after *destination*, all but the last end-of-file character are



copied.

### Using the /v Option

The /v option verifies that copied files are properly recorded. This process slows down the process of the **net copy** command.

### Examples

- To copy the MAIL.DOC file from the LISTS directory on the \\SALES server to the ADDRESS directory on the \\SALES server, type:

```
net copy \\sales\lists\mail.doc \\sales\address
```

- To copy all files from the root directory of the G: network drive ID to the root directory of the U: network drive ID, type:

```
net copy g: *.* u:\
```

See Also

For information about	See
Moving files	Net Move
MS-DOS <b>copy</b> command	MS-DOS manual(s)

## Net Help

### Purpose

The **net help** command displays a list of commands, utilities, and topics for which you can get Help. It also provides Help with a specific command or topic.

### Syntax

**net help** [*command* [/options] | *topic*]

**net** *command* {/help | /?}

where

*command*

Is the command you need help with. (Don't type **net** as part of *command*.)

*topic*

Is the topic you need help with.

### /options

Describes the options of the command you need help with.

### /help

Displays the Help text for the command you need help with.

/?

Displays the syntax for the command you need help with.

To view a list of all the commands and topics for which Help is available, type **net help** without options.

### Examples

- To view a list of all the commands and topics for which Help is available, type:

```
net help
```

- To view information about the **net print** command, type:

```
net help print
```

- Or -

```
net print /help
```

- To view the syntax for the **net print** command, type:

```
net print /?
```

- To view the options available for the **net continue** command, type:

```
net help continue /options
```

### See Also

For information about	See
Getting Help while using the LAN Manager screen	Chapter 1, “Getting Started with LAN Manager Enhanced”
Getting Help with error messages	Net Helpmsg

## Net Helpmsg

### Purpose

The **net helpmsg** command provides Help with a LAN Manager Enhanced error message.

### Syntax

**net helpmsg** message#

where message# is the four-digit number of the LAN Manager Enhanced message that you need help with.

### Comments

When a network operation fails, you see a message similar to the following:

```
NET2182: The requested service has already been started.
```

LAN Manager Enhanced precedes error-message numbers with NET, but you only have to type the number itself for message#.

The **net helpmsg** command explains why an error occurred and tells you how to solve the problem.

### Example

- To get Help with LAN Manager Enhanced error message NET2182, type:

```
net helpmsg 2182
```

The error message and Help information appear.

### See Also

Getting Help while using the LAN Manager screen	Chapter 1, "Getting Started with LAN Manager Enhanced"
Getting Help with LAN Manager Enhanced commands	Net Help

## Net Log

### Purpose

The **net log** command displays or controls information about message logging.

### Syntax

**net log** [*drive:path*] *filename* | *devicename*] [**/on** | **/off**]

where

*drive:path*

Tells where the message log file is stored. Without a drive letter and path, LAN Manager Enhanced assumes the file is stored in the LANMAN.DOS\LOGS directory.

*filename*

Is the name of the message log file. When filename has a .LOG extension, type only the name, without .LOG. By default, messages are saved in the MESSAGES.LOG file.

*devicename*

Is the name of a device at your workstation that connects to a printer queue. Devicename can be an LPT devicename (to print messages as they're received) or NUL: (to have no log file at all). If messages are printed, they are not saved in the MESSAGES.LOG file.

**/on**

Starts message logging.

**/off**

Stops message logging.

To display information about message logging, type **net log** without options.

### Comments

Message logging is on by default when the Messenger service starts.

The **net log** command controls the way messages are saved. You can stop and start message logging, change the name of the file that stores the messages, and print messages as they're received.

You can read the message log file with the MS-DOS **type** command. Use the MS-DOS **more** command to read the log file one screen at a time.

You can stop message logging with the **/off** option and still view messages when the Netpopup service is running. When the Netpopup service is stopped and message logging is off, your workstation emits a beep when it receives a message but neither displays nor logs the message.

Instead of storing your messages in a message log, you can print your messages as soon as they arrive. Note that you cannot print and then store messages. Messages that are printed are not stored in the message log.

### Examples

- To see if message logging is on and what the message log filename is, type:

```
net log
```

- To change the name of the message log file from MESSAGES.LOG to NOVEMBER.LOG, type:

```
net log november
```

- To print messages directly to the printer attached to LPT1:, type:

```
net log lpt1:
```

### See Also

For information about	See
Logging messages	Chapter 4, "Sending and Receiving Messages"
Starting the Messenger service	Net Start Messenger

## Net Logoff

### Purpose

The **net logoff** command logs a user off from the network.

### Syntax

**net logoff**

### Comments

The **net logoff** command removes the username and password associated with a workstation from the network. Logging off does not stop the Workstation service. It simply ensures that no unauthorized person can use a username and password to gain access to shared resources. Logging off cancels all of a workstation's connections.

You cannot log off if you are using a shared directory. If you are using a shared directory, you must change to a local drive on your workstation before using **net logoff**.

### See Also

For information about	See
Starting LAN Manager Enhanced	Chapter 1, "Getting Started with LAN Manager Enhanced"
Logging on	Net Logon

## Net Logon

### Purpose

The **net logon** command logs a user on to the network and establishes the username, password, and domain for a workstation.

### Syntax

**net logon** [username [password | \*]] [/domain:name] [/y]

where

*username*

Is the name by which you identify yourself on the network. A username can have as many as 20 characters.

*password*

Is the password for your user account.

\*

Produces a password prompt. A password does not appear when you type it at a password prompt.

**/domain:name**

Logs you on in a domain other than your workstation domain. This domain is called the logon domain.

**/y**

Answers any prompts that require a yes or no answer with a **yes**. You must include your username when using the **/y** option. You can use **\*** for the password when using the **/y** option.

To be prompted for your username and password, type **net logon** without options.

### Comments

The **net logon** command uses your username and password to establish a session on the network for your workstation, and grants you access to shared resources. If you are accessing a network with Windows NT Advanced Servers or LAN Manager servers, the username and password



also log you on in a domain. Logging on also restores connections that existed at a workstation when the last user logged off, if the persistent connections feature is in use.

Only one user can log on at a workstation at a time. You can use **net logon** to log on with a different username or to log on in a different domain to a network that supports domains, but you must first log off. If you try to use **net logon** when someone is already logged on at the workstation, a prompt will ask whether you want to log off. You do not need to issue a separate **net logoff** command.

---

**NOTE:**

---

To view resources on the server, the Windows NT computer or the LAN Manager server running the Netlogon service and the MS-DOS workstation must both run the same protocol (for example, NetBEUI). In addition, to log on, this protocol must be the workstation's designated first protocol.

#### **About Usernames**

If you don't specify a username with **net logon**, LAN Manager Enhanced suggests a username. This username comes from the **username** entry in the LANMAN.INI file. If the entry is blank, the computername is suggested.

#### **About Passwords**

A password is a confidential word that, together with your username, establishes your identity and gives you access to resources. When you log on to the network or connect to a shared resource, your workstation sends the username and password you specify with **net logon** to a server for verification. The server checks to see whether it has an account for you and whether the logon password you specified matches the password in your account.

LAN Manager Enhanced uses accounts in two ways. Individual servers use accounts to limit access to their resources. In a domain, a server maintains an account for each user. On Windows NT Advanced Servers, you can also use all resources of Windows NT Advanced Server domains that trust the domain you are logged on to. Once you log on, you can use all the resources in the domain to which your account is granted access.

Repeated attempts to log on when you don't remember your password are not recommended. If, after several tries, you have not supplied the correct password, you may be locked out of the account. Locking out protects your account from anyone who may try to guess your password. Your network administrator can remove the lock by re-enabling your account.

If your password is within three weeks of expiring, and your logon requests are handled by a LAN Manager server, LAN Manager warns you to change it. If the password has already expired, you must change the password in order to log on. See the **net password** command.

### About Domains

A domain is a group of workstations on a Windows NT Advanced Server or LAN Manager networks set up by an administrator. When you don't specify a **/domain:name**, LAN Manager Enhanced logs you on in your workstation domain, which is designated by the **domain** entry in the LANMAN.INI file.

Your workstation domain probably includes the workstations and servers you most often work with. When you specify a **/domain:name**, you are logged on in a domain other than your workstation domain. This domain is called the logon domain.

Use the **net view** command to display servers visible in your workstation domain, the logon domain, and the domains listed in the **othdomains** entry in the LANMAN.INI file.

When you log on in a domain, you get access to most of the shared resources in the domain. Computers running Workgroup Connections may be grouped into workgroups, which function much like LAN Manager or Windows NT Advanced Server domains.

When you log on there may be a delay while the workstation broadcasts your logon request and waits for a domain controller (a server that validates logon requests) to respond. If no domain controller is available, this delay can last more than 12 seconds. To avoid the delay, you can specify the **/domain:standalone** option.

### Examples

- To log on in your workstation domain, type:

```
net logon
```

LAN Manager Enhanced asks you for a username and then asks for a password.

- To log on with the username felix and be prompted for a password, type:

```
net logon felix *
```

You see the following display:

```
Type your password:
```

Your password does not appear when you type it.

- To log on in the accounting domain with the username felix and the password freddy, type:

```
net logon felix freddy /domain:accounting
```

### See Also

For information about	See
Logging on and off	Chapter 1, “Getting Started with LAN Manager Enhanced”
Logging off	Net Logoff
Changing your password	Net Password

## Net Move

### Purpose

The **net move** command moves files across the network from a source to a destination.

### Syntax

**net move** *source* [*destination*]

where

*source*

Is the path of one or more files to move. Specify multiple filenames with MS-DOS wildcard characters.

*destination*

Is the path to which *source* moves. When you are moving more than one file, *destination* must be a directory. When you omit *destination*, files move to the current directory. LAN Manager Enhanced won't overwrite an existing file during a move. If *destination* is an existing file, the move is canceled.

### Comments

Use this command to move files between any two directories you have access to on the network.

Moving a file is different from copying a file. Moving relocates the file; copying makes a duplicate. The moved file is given the date and time that the move occurred.

You can move files between two remote computers. For instance, while working at workstation A, you can move files between servers B and C. You don't have to connect to shared directories to use **net move**. LAN Manager Enhanced makes the connections for you.

---

**NOTE:**

When moving files from one shared directory to the root of another shared directory, specify the backslash (\) in the destination. For example:

```
net move e:\text\*.* f:\.
```

---

### Example

- To move all the files in the TEXT directory on drive C to the BUDGET

subdirectory in the \\ADMIN server's REPORTS shared directory, type:

```
net move c:\text\*.* \\admin\reports\budget
```

**See Also**

For information about	See
Copying files	Net Copy

## Net Name

### Purpose

The **net name** command adds or deletes a message alias and displays a workstation's list of aliases.

### Syntax

**net name** alias [/add | /delete]

where

*alias*

Is the alias you want to add or delete. An alias is a name to which you can send messages.

### /add

Adds an alias to a workstation. Typing /add is optional; typing net name alias performs the same task.

### /delete

Removes an alias from a workstation.

To display a list of aliases in use at a workstation, type **net name** without options.

### Comments

A workstation can have three kinds of aliases, each receiving messages:

- The workstation's computername, which is added when the Workstation service starts
- Your username, which is added when you log on, provided you are not logged on elsewhere on the network
- Aliases added with the **net name** command or through the Aliases option from the Message menu of the LAN Manager screen

### Receiving Messages

A workstation can only receive messages when the Messenger service is running. When the Netpopup service is also running, a message box displays messages on your screen. When message logging is on, the message is sent

to the message log. When the Netpopup service and message logging are both off, you only hear a beep when your workstation receives a message. In this case, the message is neither saved nor logged in the message log.

A workstation receives messages sent to any of its aliases. A user does not have to be logged on to the workstation for the aliases at the workstation to receive messages.

### **Adding and Deleting an Alias**

You can't add an alias to your workstation if that alias is already in use on the network. Similarly, you can't start the Workstation service with a computername that is in use as an alias at another workstation.

You can log on with a username that is in use elsewhere as an alias, but the username isn't added as an alias to your workstation, and you don't receive messages for that username at your workstation.

Use the **/delete** option to remove an alias. You can delete any alias in use at your workstation except the computername.

Logging off deletes your username alias. Other aliases on your workstation, including the computername, still receive messages as long as the Workstation service is running.

---

**NOTE:**

---

Before you can add new aliases, your administrator may need to make changes to the **nummsgnames** keyword in the **[messenger]** section of the LANMAN.INI file.

### **Examples**

- To view the list of aliases on your workstation, type:  
`net name`
- To add the alias juliewo to your workstation, type:  
`net name juliewo`
- To remove the alias juliewo from your workstation, type:  
`net name juliewo /delete`

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**See Also**

For information about	See
Messages	Chapter 4, “Sending and Receiving Messages”
Saving your messages in a file	Net Log
Sending messages	Net Send



## Net Password

### Purpose

The **net password** command changes the password for a user account on a server or in a domain.

### Syntax

```
net password [\\computername | /domain:name] username  
oldpass [newpass | *] ]
```

where

*computername*

Is the server with the user account for which the password will change.

**/domain:name**

Specifies a domain other than the workstation domain in which the password will change.

*username*

Is your username.

*oldpass*

Is your current password.

*newpass*

Is the new password. The new password can have as many as 14 characters.

To be prompted for entries, type **net password** without options.

### Comments

User accounts are set up to control a user's access to shared resources on a server or in a domain. An account includes the username and the password for a user. Accounts perform similar functions on servers and in domains. The difference is that an account in a domain controls access to most of the shared resources on the servers in the domain, rather than just one server's resources.

If you don't supply a *computername* or a */domain:name*, LAN Manager Enhanced assumes you are changing the password for your account in the workstation domain.

On LAN Manager servers, accounts may be set up so that the password expires after a certain length of time, and there may be a limit on how often a given password may be reused. When a password expiration date is approaching or has passed, the LAN Manager server sends a warning message during logon. If a new password is specified that is disallowed because it has been used too recently, a message appears requesting that a different password be used.

### Keeping Passwords Confidential

Keep your password confidential by typing an asterisk (\*) instead of your password. You are then prompted for your password, which does not appear as you type it at the prompt. When you are changing your password, LAN Manager Enhanced asks for the new password twice to ensure that it is correct.

If you forget your password, see your administrator for a new one. You can then use **net password** to change the new password to one that you want.

If, after several tries to log on, LAN Manager has not received the correct password, you may be locked out of the account. This protects your account from anyone who may try to guess your password. Your network administrator can remove the lock by re-enabling your account.

### Examples

- To change your password on the \\PRODUCT server from petunia to daffodil (your username is robertch), type:

```
net password \\product robertch petunia daffodil
```

To make the same change, but have LAN Manager Enhanced prompt you for a new password that won't appear when you type it, type:

```
net password \\product robertch petunia *
```

- To change your password in your workstation domain from carnation to orchid, type:

```
net password robertch carnation orchid
```

- To change your password in the accounting domain from magnolia to orchid, type:

```
net password /domain:accounting robertch magnolia  
orchid
```

**See Also**

For information about	See
Passwords	Chapter 1, “Getting Started with LAN Manager Enhanced”
Logging on with a password	Net Logon

## Net Pause

### Purpose

The **net pause** command pauses services or workstation connections to shared resources.

### Syntax

**net pause {workstation | messenger | netpopup | drdr | prdr}**

where

#### **workstation**

Pauses all workstation connections.

#### **messenger**

Pauses the Messenger service.

#### **netpopup**

Pauses the Netpopup service. Type **minipop** instead if your workstation is configured to display messages only when the Windows operating system is running.

#### **drdr**

Pauses all workstation connections to shared directories.

#### **prdr**

Pauses all workstation connections to shared printer queues.

### Comments

Pausing your workstation and its connections places them on hold while keeping your username and password active. Reactivate your workstation with the **net continue** command.

Pausing connections allows you to use a devicename for a device at your workstation instead of for a shared resource. For example, the LPT1: devicename can belong to a shared printer queue for a laser printer. If you also use LPT1: as the devicename for a dot-matrix printer at your workstation, you can pause the network connection and print a quick draft at your desk. To send print jobs back to the shared printer queue, reactivate the connection with the **net continue** command.

**See Also**

For information about	See
Continuing a paused service or connection	Net Continue
Stopping the Workstation service	Net Stop

## Net Print

### Purpose

The **net print** command displays information about a shared printer queue or controls a user's print jobs.

### Syntax

**net print** {\\*computername*[*sharename*] | *devicename*}

**net print** {\\*computername* | *devicename*} [*job#* {**/hold** | **/release** | **/delete**}]

where

*computername*

Is the name of a server sharing the printer queue(s) you want information about.

*sharename*

Is the name of a printer queue you want information about.

*devicename*

Is the name of a device at your workstation that connects to the printer queue you want information about.

*job#*

Is an identification number assigned to a queued print job you want to control. Job numbers are unique on a server.

### **/hold**

Suspends a print job. A suspended print job does not print until the **/release** option reactivates it.

### **/release**

Reactivates a print job that is on hold.

### **/delete**

Cancels a print job.

### Comments

The **net print** command shows you where in a printer queue a print job is. With this command, you can also hold, release, or delete a print job.

Sending a job to a printer queue usually requires connecting to the queue with the **net use** command, and then submitting the print job through an application. You can also send a job to a queue with **net copy** or the MS-DOS **copy** command.

When you specify a *computername* (for example, \\SALES) with **net print**, you get information about the shared printer queues on the server with the *computername* you specify. You don't have to make a connection to a queue to get information about it. The display is similar to the following.

```
Printer Queues at \\SALES
Name                Job #   Size   Status
-----
LASER Queue        3 jobs
  JACKST            1      2509   Printing on LPT1
  JENNYT            3        75   Waiting
  JENNYT            4        75   Waiting
PRT Queue          2 jobs
  BENST             5       180   Printing on LPT2
  JOHNOC            6       512   Waiting
```

The columns in this display give the following information:

**Name**

The sharename of each printer queue on the server you specified. Listed beneath the sharename are the usernames of people whose print jobs are printing or waiting to print.

**Job #**

The number of print jobs in each printer queue. Listed beneath the number of jobs is the unique identification number of each job in the queue.

**Size**

The size of each print job in bytes.

**Status**

The status of either the printer queue or a print job.

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An administrator controls the status of a printer queue. A printer queue's status can be:

<b>Status</b>	<b>Description</b>
Active	Available to receive print jobs
Held	Suspended
Held until	Suspended until the time displayed
Pending delete	Being shut down
Error	Unavailable because of malfunction

The status of a print job can be:

Status	Description
Printing on devicename	Printing on the printer attached to the server's devicename
Spooling	Transferring into the printer queue
Waiting	Waiting for a printer to become available
Held	Held by a user with the /hold option
Held on devicename	Held because an administrator put the queue on hold
Paused	Paused by a user or an administrator
Out of paper on devicename	Stopped because the printer is out of paper
Error on devicename	Stopped because of a malfunction
Offline on devicename	Stopped because the printer is offline

### Examples

- To see the printer queues shared on the \\PRODUCT server, type:  
`net print \\product`
- To learn about the DOTM queue on the \\PRODUCT server, type:



```
net print \\product\dotm
```

- If your workstation's LPT1 devicename attaches to the \\PRODUCT server's LASER queue, display the contents of the queue by typing

```
net print lpt1:
```

- Or -

```
net print \\product\laser
```

- To cancel a print job with the job identification number 7 on the \\PRODUCT server that attaches to your workstation's LPT1 devicename, type:

```
net print \\product 7 /delete
```

- Or -

```
net print lpt1: 7 /delete
```

### See Also

For information about	See
Shared printers	Chapter 3, "Using Shared Printers"
Connecting to a printer queue	Net Use
Viewing servers and queues	Net View
Sending an end-of-job signal to a printer	Chapter 3, "Using Shared Printers," and Prtsc

## Net Send

### Purpose

The **net send** command sends a message or short file to one or more users on a network.

### Syntax

**net send** { *alias* | \* | **/domain**[:*name*] | **/broadcast** } *message*

where

*alias*

Is the username, computername, or other name you want to send a message to. When the alias is a computername that contains blank characters, enclose the alias in quotation marks (" ").

\*

Sends a message to all the aliases in your workstation domain.

**/domain**:*name*

If you specify name, the message is sent to all the aliases in the specified domain.

**/broadcast**

Sends a message to all the aliases on the network.

*message*

Is the text of a message or the complete path of a text file (preceded by <) you want to send.

### Comments

Use the **net send** command to send a message to a single user, to users in a domain, or to all users on the network.

An alias must be logged on, or active on the network to receive a message, and the Messenger service must be running on the receiving workstation. If several local area network adapters are used, the workstation can exchange messages only through the first adapter.

The size of a message that a workstation can receive is limited to 128 characters.

The simplest way to send a message is to type it from the MS-DOS prompt. You can type a longer message (over several lines) by pressing ENTER after **net send alias** and after each line of text. To send the message, press CTRL+Z or F6, and then press ENTER.

LAN Manager Enhanced provides several ways to broadcast a message, meaning send a message to many users on the network. You can broadcast messages to all the aliases in your workstation domain (use \* or **/domain**), a different domain (use **/domain:name**), or the entire network (use **/broadcast**). Broadcast messages must be 128 characters or fewer. Use this feature with discretion.

To send a message that includes a slash mark (/), you must enclose the entire message in quotation marks (" "). Otherwise, LAN Manager assumes the slash mark represents the beginning of a command option. The message is not sent, and you receive the following error message:

```
NET3506: The option / is unknown.
```

### Examples

- To send the message "Meeting changed to 3 p.m. Same place." to the alias jackst, type:

```
net send jackst Meeting changed to 3 p.m. Same place.
```

Another way to type this message is

```
net send jackst  
Meeting changed to 3 p.m.  
Same place.
```

Press ENTER after each line.

To send this message, press CTRL+Z or F6, and then press ENTER.

- To send the small text file INVITE.DOC to all the aliases in the legal domain, type:

```
net send /domain:legal <invite.doc
```

- To inform everyone in your workstation domain that a party is being held in the cafeteria, type:

```
net send * There's a party in the cafeteria!
```

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- To send a message that includes a slash mark, type:  
`net send marcia "Format your disk with FORMAT /4"`
- To send a message to the user at the SALES 2 workstation, type:  
`net send "sales 2" Meeting in 10 minutes.`

**See Also**

For information about	See
Messages	Chapter 4, "Sending and Receiving Messages"
Saving or printing messages	Net Log
Adding aliases	Net Name
Using the Messenger service	Net Start Messenger

## **Net Start Encrypt**

### **Purpose**

The **net start encrypt** command causes passwords from MS-DOS workstations to be encoded before they are transmitted across the network.

### **Syntax**

**net start encrypt**

### **Comments**

The Encrypt service encrypts passwords before sending them across the network. No special setup is required for servers to decode the passwords. Password encryption is embedded in Windows NT and OS/2. MS-DOS workstations send passwords without encryption unless this service is used. By default, the LAN Manager Installer installs the Encrypt service on MS-DOS workstations.

The Encrypt service can be stopped only by stopping the Workstation service.

## Net Start Messenger

### Purpose

The **net start messenger** command starts the Messenger service.

### Syntax

**net start messenger** [*options*]

where

*options* are as follows:

**/logfile:***path* | *device*

Assigns a path for the message log file. You can also specify a device, such as LPT1: (to print messages as they arrive) or NUL: (to have no log file at all). The default path for the message log file is LANMAN.DOS\LOGS\MESSAGES.LOG.

**/nummsgnames:***number*

Sets the allowable number of message aliases for a workstation. The range is from 1 to 10 aliases; the default is 2.

**/sizemessbuf:***bytes*

Sets the size, in bytes, of the message buffer, limiting the size of messages a workstation can receive. The range is from 128 through 8192 bytes; the default is 256.

To display a list of services that are running at a workstation, type **net start** without options.

### Comments

The Messenger service must be started for a workstation to receive messages. By default, LAN Manager Enhanced is configured to start the Messenger service when the Workstation service is started.

Do not run the Messenger service on workstations running Norton Commander 3.0. If messages are received at such a workstation, the computer will halt or reboot itself.

You send a message to a workstation's alias with the **net send** command. LAN Manager Enhanced uses three types of aliases: computernames, usernames, and aliases added with the **net name** command or through the Aliases option from the Message menu of the LAN Manager screen.

There are two ways a workstation can receive messages sent to its aliases:

- When the Netpopup and Messenger services are running, a message box displays each message on the workstation's screen.
- When message logging is on, the incoming message is sent to a message log file or a printer. The **net log** command controls message logging.

Changes made with the **net start messenger** command remain in effect only as long as the Messenger service is running. Once started, the Messenger service can be stopped only by stopping the Workstation service.

### Example

- To start the Messenger service with a message buffer of 5120 bytes, type:

```
net start messenger /sizmessbuf:5120
```

### See Also

For information about	See
Messages	Chapter 4, "Sending and Receiving Messages"
Logging messages	Net Log
Adding aliases	Net Name
Sending messages	Net Send
Starting the Netpopup service	Net Start Netpopup
Starting the Workstation service	Net Start Workstation

## Net Start Netpopup

### Purpose

The **net start netpopup** command starts the Netpopup service.

### Syntax

#### **net start netpopup**

To display a list of services that are running at a workstation, type **net start** without options. If your workstation is configured to display messages only when the Windows operating system is running, type **net start minipop**.

### Comments

With the Netpopup service, you can see messages as they arrive at your workstation. The Messenger service must be running for your workstation to receive messages. By default, the Messenger service and the Netpopup (or Minipop) service(s) are configured to start when the Workstation service is started.

Once started, the Netpopup service can be stopped only by stopping the Workstation service.

A message box appears.

A message box disappears after one minute or when you press ESC.

If message logging is on, a message is saved in the message log file. If message logging is off, messages are discarded after they are displayed.

### See Also

For information about	See
Messages	Chapter 4, "Sending and Receiving Messages"
Controlling network services	Net Continue, Net Pause, Net Stop
Logging messages	Net Log
Starting the Messenger service	Net Start Messenger



## Net Start Workstation

### Purpose

The **net start workstation** command starts the Workstation service.

### Syntax

**net start workstation** [*options*]

where

options are as follows:

**/computername:***name*

Is a unique name that identifies a workstation on the network. If the computername matches any of the following on the network, the Workstation service does not start:

- A computername on another workstation.
- A username on another workstation.
- A domain name on the network.
- An alias on the workstation or another workstation.

Computernames can have from 1 through 15 characters, including letters, numbers, and the following symbols:

! # \$ % & ' ( ) - . @ ^ \_ { } ~

**/domain:***name*

Is the name of a workstation domain. A domain name can have from 1 through 15 characters.

**/othdomains:***name*[,...]

Specifies one or more domains that a workstation belongs to, in addition to the workstation domain. You can specify as many as four domains for a workstation. When you type this option, separate multiple domain names with commas.

**/umb:**{*yes* | *no*}

Determines whether to use upper memory blocks (UMBs) as available (for MS-DOS computers). This overrides any umb setting for this service in the LANMAN.INI file. If /umb is not specified, all available UMBs will be used.

**/wrkservices:service[,...]**

Lists the LAN Manager Enhanced services you want to start automatically when the Workstation service starts. When you type this option, separate multiple service names with commas. You cannot abbreviate service names.

To display a list of services that are running at a workstation, type **net start** without options.

**Comments**

You can abbreviate workstation as wksta, work, redirector, redir, or rdr. You must start the Workstation service to use LAN Manager Enhanced.

The **net start workstation** command has additional options that are not listed here. For a description of all these options and their values, see the discussion of the [workstation] section of the LANMAN.INI file in the *Installation Guide for Clients*.

When assigning a computername to start the Workstation service, typing / **computername:name** is optional; you can also type **net start workstation computername**.

**Example**

- To start a workstation with the computername \\FINANCE and the logon domain legal, type:

```
net start workstation finance /domain:legal
```

**See Also**

For information about	See
Starting LAN Manager	Chapter 1, "Getting Started with LAN Manager Enhanced"
Pausing the Workstation service	Net Pause
Stopping the Workstation service	Net Stop

## Net Stop Workstation

### Purpose

The **net stop workstation** command stops the Workstation service.

### Syntax

**net stop workstation**

### Comments

Stopping the Workstation service cancels all network connections the Workstation service is using and logs you off from the network. It also stops all other services that are running.

Stopping the Workstation service differs from pausing the Workstation service. Pausing puts the service on hold and suspends any network connections.

If any protocols were loaded with Demand Protocol Architecture (DPA), they are unloaded before stopping the Workstation service.

Stopping the Workstation service does not remove software from your workstation's memory. LAN Manager Enhanced is a terminate-and-stay-resident (TSR) program, which means that, when the program stops, it stays in a computer's memory. If other TSR programs are loaded into the computer's memory, the **net stop workstation** command may not work.

### See Also

For information about	See
LAN Manager Enhanced services	Chapter 1, "Getting Started with LAN Manager Enhanced"
Starting services	Net Start Messenger, Net Start Netpopup, Net Start Workstation
Demand Protocol Architecture (DPA)	Load, Unload

## Net Time

### Purpose

The **net time** command synchronizes a workstation's clock with a server's, or displays the time and date for a server or domain.

### Syntax

```
net time [\\computername | /domain[:name]] [/set]
```

where

*\\computername*

Is the name of a server with which you want to check or synchronize a workstation's clock.

**/domain**[:*name*]

Specifies that the domain controller is used as the time source. Use *name* to specify a domain other than the workstation domain.

**/set**

Synchronizes a workstation's clock with that of a specified server or domain.

To display the current time and date for the server designated as the network's official time source, type **net time** without options.

### Comments

This command provides a way to check whether a workstation's clock is properly synchronized with the clocks on its servers.

### Examples

- To see the time and date for the domain controller for the accounting domain, type:  

```
net time /domain:accounting
```
- To set your workstation's clock to the time and date on the network's designated time server, type:  

```
net time /set
```

## Net Use

### Purpose

The **net use** command connects a workstation to or disconnects a workstation from a shared resource, or displays information about workstation connections. It also controls the persistent net connections feature.

### Syntax

**net use** [*devicename*] [\\*computername*\*sharename* [*password* | \*]]

**net use** {*devicename* | \\*computername*\*sharename*} **/delete**

**net use** [*devicename*] [\\*computername*\*sharename* [*password* | \*]] **/home**

**net use /persistent:**{**yes** | **no** | **freeze** | **save**}

where

*devicename*

Assigns a name to a device connected to a shared resource or specifies the disconnecting *devicename*. LAN Manager Enhanced uses two kinds of *devicenames*, one type for disk drives (all nonlocal drive letters through the value of *lastdrive* as defined in the CONFIG.SYS file) and the other type for printers (LPT1: through LPT3:).

*computername*

Is the name of a server sharing a resource. If the *computername* contains blank characters, enclose the double backslash (\\) and the *computername* in quotation marks (" ").

*sharename*

Is the name of a resource.

*password*

Is the password needed to use a resource. To be prompted for the password, type an asterisk (\*) instead of the password. A password does not appear when you type it at a password prompt.

**/delete**

Cancels a network connection.

**/home**

Specifies that the directory is used as a home directory.

**/p[ersistent]**

Controls the use of persistent network connections. This switch is used alone; it cannot be combined with any other switch, nor can it be used while adding or removing a connection. The default is **yes**.

**yes**

Saves all connections as they are made and restores them at next logon.

**no**

Neither saves nor restores connections at the next logon.

**freeze**

Stops saving connections but does not overwrite the existing list of connections.

**save**

Saves your current connections, over writing any previously saved connections. These settings will be restored each time you log on. Connections made after using the **net use /o: save** command are neither save nor restored.

To list a workstation's connections, type **net use** without options.

**Comments**

By connecting a workstation to a shared resource, you can use the resource as if it were attached to the workstation.

For example, **net use** can connect your workstation to a shared printer queue that uses a high-quality printer. When you use a program such as Microsoft Excel, you can print files on that printer by directing print jobs to the devicename for the queue that uses the printer.

You can use a shared resource without making a connection with net use. The connection is made automatically by MS-DOS and some network programs when you specify the network path of the resource on the command line. If the resource is protected by a password, you must establish access with **net use**. You don't have to assign a devicename to establish access. Just type **net use**, the network path of the resource, and the password.

You can use a shared directory without assigning a devicename to the connection. You do this at the MS-DOS prompt by using the network path with certain commands and applications.

For example, to use Microsoft Word to edit the LIST.DOC file in the shared directory with the network path \\SALES\FARWEST, type:

```
word \\sales\farwest\list.doc
```

Microsoft Word loads the shared file even though you haven't made a previous connection to \\SALES\FARWEST. Note that this procedure doesn't work when you need a password to gain access to \\SALES\FARWEST. In this case, you must first establish access to the directory.

You cannot delete a connection to a shared directory while that directory is your current drive. You must change to another drive before you delete the connection.

---

**NOTE:**

You can only make connections to sharenames of up to eight characters, optionally followed by an extension consisting of a period (.) and one to three characters. LAN Manager Enhanced sends an error message if you try to connect to a longer sharename.

---

### Viewing Your Workstation's Connections

When you type **net use** without options, you get information about your workstation's connections in a display similar to the following:

Status	Local name	Remote name
OK	M:	\\FINANCE\SCRATCH
DISCONNECTED	G:	\\PRODUCT\C
ERROR	LPT1:	\\PRINT1\LASER

The status of a connection can be:

Status	Description
OK	Active
Disconnected	Suspended by the server but will reestablish when you use it
Paused	Paused by the workstation





```
net use lpt1: /delete
```

- To establish access to the \\FINANCE server's SCRATCH shared directory, which requires the password meteor, type:

```
net use \\finance\scratch meteor
```

- To cancel your connection to the \\FINANCE\SCRATCH shared directory, type:

```
net use \\finance\scratch /delete
```

You must use quotation marks with a servername that has a space. If you omit the quotation marks, LAN Manager will not accept a servername that includes a space.

### See Also

For information about	See
Making connections	Chapter 1, "Getting Started with LAN Manager Enhanced"
Pausing and continuing connections	Net Pause, Net Continue
Viewing connections	Net View

## **Net Version**

### **Purpose**

The **net version** command informs you of the version of LAN Manager running on the computer at which the command is typed.

### **Syntax**

**net version**

### **Comments**

This command helps you determine which computers to upgrade to a higher version of LAN Manager. This command is used primarily to provide data to your administrator or technical support personnel.

## Net View

### Purpose

The **net view** command displays a list of servers in a specified domain or the resources that a server in a specified domain is sharing.

### Syntax

**net view** [\\*computername*]

where *computername* specifies a server with shared resources you want to view.

To display a list of servers in your workstation domain, logon domain, and other domains, type **net view** without options.

### Comments

When you type **net view** without options, you see a list of servers similar to the following:

Server Name	Remark
\\PRODUCT	Production file server
\\PRINT1	Printer room, first floor
\\SALES	Sales records and lists

When you specify a server with **net view**, you see a list of resources the server is sharing. The display looks similar to the following:

```
Shared Resources at \\PRINT1
Printer room, first floor
```

Sharename	Type	Used as	Comment
PRT	Print	LPT2:	Printer pool
FAST_PRT	Print	LPT1:	High priority printer
D	Disk	R:	Drive D Root

The columns in this display give the following information:

### Sharename

The name of the resource.

### Type

The type of shared resource.

### Used as

The local devicename (if any) assigned to the resource.

### Comment

An optional comment about the resource, which an administrator supplies.

### Examples

- To see a list of servers in your domain, type:

```
net view
```

- To see a list of the shared resources on the \\PRODUCT server, type:

```
net view \\product
```

### See Also

For information about	See
Shared resources	Chapter 1, “Getting Started with LAN Manager Enhanced”
Using a resource shared on a server	Net Use
Who is logged on in a domain	Net Who

## Net Who

### Purpose

The **net who** command lists users logged on in a LAN Manager domain, on a LAN Manager server, or on a workstation. It also lists information about a user. It does not show information about Windows NT Advanced Server domains or servers or Windows NT workstations.

### Syntax

**net who** [/domain:name | \\computername | username]

where

**/domain:name**

Lists users on a domain other than the domain in which you're logged on.

*computername*

Is the name of a server with users you want information about.

---

**NOTE:**

---

When using this option, the Time since connection is displayed in place of Time since logon.

*username*

Is the name of a user you want information about.

To display information about users in the logon domain, type **net who** without options.

### Comments

When you type **net who** without options, you see a list of users logged on in your LAN Manager logon domain. The display looks similar to the following:

Users on Domain HEADQTRS

Username	Workstation	Time since Logon	Full Name
ABIGAIL	PRODUCT	10:11:45	Abigail Martin
ARNIEG	FINANCE	06:19:00	Arnold Gates
PHILB	SALES	11:23:13	Phil Bates

The Workstation column lists the computername of each user's workstation.

---

**NOTE:**

---

The **net who** command provides information about LAN Manager servers that have LAN Manager version 2.2. You must have administrative privilege on a server that has an earlier version of LAN Manager to get information about that server's users.

**Example**

- To see a list of users currently logged on in the LAN Manager marketing domain, type:

```
net who /domain:marketing
```

**See Also**

For information about	See
Displaying a list of servers	Net View

## Netbind

### Purpose

The **netbind** utility binds protocols that are loaded statically.

### Syntax

#### **netbind**

### Comments

The **netbind** utility binds protocols that have been statically loaded, usually by inclusion in the CONFIG.SYS file. The protocols remain bound until you restart your workstation.

Do not use **netbind** while running the Microsoft Windows operating system. Either bind the protocol before running the Windows operating system, or stop the Windows operating system, bind, and then restart the Windows operating system.

### See Also

For information about	See
Loading protocols as TSRs	Load, Unload
Binding network device drivers	<i>Installation Guide for Clients</i>

## Netrun

### Purpose

The **netrun** command runs a program or command on a LAN Manager OS/2 or UNIX system server.

---

**NOTE:**

---

The **netrun** command does not work on Windows NT Advanced Servers or Windows NT workstations. Also, you cannot use the **netrun** command to run interactive programs such as word processors or spreadsheets.

### Syntax

#### **netrun** *command*

where *command* is the name of a program you want to run. On a LAN Manager OS/2 server, the program file must have a .EXE extension. You don't need to supply the filename extension when you type the command.

### Comments

The **netrun** command lets you use another computer's processing power to run a program. You can do this only from the command line. There is no comparable command available with the LAN Manager screen. You may need the help of your administrator to use this command.

To run a program on a server

- 1 Get the filename of the program you want to run and the computername of the server you want to use.
- 2 Connect to a shared directory on the server with the **net use** command if you do not already have such a connection.
- 3 Change your current directory to any shared directory on the server that has the program you want to run. The program need not be in the directory you change to and might not be visible to you through any other **net** commands. As long as you are using a directory on that server, you can run the program, even if you cannot see the program file with any directory command or view command.
- 4 Type **netrun** followed by the filename of the program and any options or variables the program requires.



If the program you are running has options or variables that include filenames, specify the full path for each file. If a drive letter is included in the path, LAN Manager assumes that the drive is one of the server's drives. Any files, such as data files, that the program is to use must be on the server from which you use the **netrun** command.

Most programs produce some kind of output or data. When you use **netrun**, this output is sent to your screen. To send the output to a file, specify `>>path` to receive the output in the **netrun** command line. By default, LAN Manager creates this file in the current directory, but any *path* you specify after the `>>` symbol is relative to your workstation, not to the server.

Commands that can be run with the **netrun** command are controlled by the Netrun service on the server that has the executable file. Because the Netrun service runs as a daemon process on the UNIX system server without a controlling terminal, and because any command executed by **netrun** inherits this state, those programs that issue input prompts when they detect that they are being run from the command line will not issue prompts.

For example, the shell detects whether there is a controlling terminal and issues the PS1 prompt while waiting for command input. It does not do this when input is not coming from a terminal (for example, when it is running a shell script from a file). When run from **netrun**, the shell will not issue any prompts. A sample session follows:

```
D:>> netrun sh
date Wed Sep  2 17:20:26 PDT 1992
who
root          console          Aug 24 12:31
exit
D:>>
```

When using the **netrun** program on an MS-DOS client, the keyboard input is buffered and lines are sent only when the buffer fills or a return is entered. This may require entering a return after some special characters to get them sent across. For example, when entering expressions to the UNIX system **bc** program, you might type the following:

```
D:>> netrun bc
3+4
7
```

If you then intend to exit **bc** by typing CTRL+D (which would normally terminate **bc** immediately), you need to follow the CTRL+D with a return to send the CTRL+D to the server.

### Example

- Suppose you want to run a file-comparison program called DIFF.EXE on the \\ADMIN server with the LISTS shared directory. The two files you want to compare are MAILLIST.TXT and ADDRESS.LST in the LISTS directory, and the file you want to receive the output is NEWLIST.TXT on your drive C.

To accomplish this comparison, assign a devicename (such as D) to the LISTS directory on the \\ADMIN server. Change to that drive, and start the program using the **netrun** command. To do this, type the following:

```
net use d: \\admin\lists
d:
netrun diff maillist.txt address.lst >>c:\newlist.txt
```

Note that the DIFF.EXE program need not be in the \\ADMIN\LISTS directory.

### See Also

For information about	See
Connecting to a shared directory	Net Use
Viewing a list of shared directories on a server	Net View
Other UNIX system commands	Uchmod, Ud, Udir, Uren

## Nwload

### Purpose

The **nwload** utility starts NetWare Connectivity.

### Syntax

**nwload** [*username*]

where *username* is your NetWare username.

### Comments

NetWare Connectivity allows you to use Novell NetWare servers. You will be prompted for your NetWare username, unless you include it on the command line.

You cannot use this utility while the Microsoft Windows operating system is running. Use this utility before you start the Windows operating system, or stop the Windows operating system, use the **nwload** utility, and then restart the Windows operating system.

### See Also

For information about	See
Unloading NetWare Connectivity	Nwunload
NetWare Connectivity	Appendix B, "Using NetWare Connectivity," and the NetWare Connectivity Guide

## **Nwunload**

### **Purpose**

The **nwunload** utility unloads NetWare Connectivity.

### **Syntax**

**nwunload**

### **Comments**

NetWare Connectivity allows you to use NetWare servers. After you unload NetWare Connectivity with the **nwunload** utility, you can start NetWare again with the **nwload** utility.

You cannot use this utility while the Microsoft Windows operating system is running. Use this utility before you start the Windows operating system; or stop the Windows operating system, use the **nwunload** utility, and then restart the Windows operating system.

### **See Also**

For information about	See
Loading NetWare Connectivity	Nwload
NetWare Connectivity	Appendix B, "Using NetWare Connectivity," and the NetWare Connectivity Guide

## Ping

### Purpose

The **ping** utility lets users of Microsoft TCP/IP verify a physical connection to a remote computer.

### Syntax

**ping** *remote\_computer* [-**t** [*timeout\_value*]] [-**n** [*num\_times*]]

where

*remote\_computer*

Is the computername or IP address of a remote computer.

**-t** [*timeout\_value*]

Is the number of seconds (*timeout\_value*) that this node waits for an ICMP echo reply from a remote computer. The *timeout\_value* range is from 1 through 300 seconds; the default is 20.

**-n** [*num\_times*]

Is the number of times **ping** sends an echo request to the remote computer. If you don't specify a number, **ping** uses the default of one echo request.

There is a 1-second delay between each echo request.

### Comments

The **ping** utility is a Microsoft TCP/IP utility that can be used to isolate network hardware problems and incompatible configurations for StarLAN 10 networks, token-ring networks, and ThinLAN networks.

## **Printsta**

### **Purpose**

The **printsta** command accepts print jobs from other workstations and prints them on a shared printer.

### **Syntax**

**printsta** *options*

**printsta /D**

where

**/N:name**

Allows you to grant one remote workstation exclusive access to the LAN Manager Print Station printer. If you use this switch, the only remote user who can send print jobs to your printer is the one at the computer with *computername* name. (Of course, you will still be able to send print jobs to your own printer, too.)

**/L:n**

Tells LAN Manager Print Station which printer port to use. For example, **/L:1** would instruct LAN Manger Print Station to use the printer connected to LPT1.

The range is 1 to 3; the default is 1.

**/V:n**

Redirects printer output from the workstation that is sharing a printer from the port that has the shared printer to the specified logical port, which may be in turn redirected to a queue on a server. You may specify 1 for LPT1, 2 for LPT2, or 3 for LPT3.

**/Q**

Acts as a toggle to pause and release the queue.

**/M:n**

Specifies the amount of cache memory reserved for each permitted spool file.

When LAN Manager Print Station is loaded, it allocates a memory block (a buffer) for caching the spool file data for each spool file that it may receive over the network. You set the number of spool files that may be created at one time with the **/F** option. For example, if you set **/F:10** and **/M:200**, when

LAN Manager Print Station loads, it will allocate 2000 bytes for the buffers that receive data that go into the spool files. In this case, when a print job arrives, LAN Manager Print Station will collect data until it has received 200 bytes; then it will write that data into the spool file, empty the buffer, and receive the next 200 bytes of data from that print job. At any one time, it may be doing this for each of the 10 spool files permitted.

Increasing the size of these buffers will reduce the amount of network traffic needed to print a file, but will also increase the amount of memory the LAN Manager Print Station needs. These buffers are allocated from MS-DOS and will not reside in the same place in memory as the print spooler. The size of these buffers should be reduced if memory constraints are a problem.

The range is 128 bytes to 4096 bytes; the default is 128 bytes.

***/T:n***

Sets the priority of LAN Manager Print Station on the host computer. That is, it establishes how successfully LAN Manager Print Station can compete for processing time with other programs that the user of the host computer may be running, by controlling how often it can use the computer's processing power. The highest priority is 1. Assigning a lower priority (by increasing this value) will force LAN Manager Print Station to wait longer periods of time in between doing any processing. If using LAN Manager Print Station seems to slow the use of other applications on the workstation, increase this value. If fast print spooling is more important, then assign a higher priority (decrease the value) to give LAN Manager Print Station more processing time. For example, the default value of 10 instructs LAN Manager Print Station to process approximately twice every second.

The range is 1 to 255, with 1 being the highest priority. The default is 10.

***/I:n***

Each time the **printsta** utility gains control of the computer's processing power, it will use *n* cycles for processing before it relinquishes control again. The range is 1 to 255; the default is 1.

***/O:n***

Specifies the number of characters to be printed in each pass. The range is 1 to *n* characters, where *n* is the value specified with the **/M** switch. The default is 32.

***/A:n***

Causes LAN Manager Print Station to disconnect remote clients that have not

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spooled to the printer in the number of minutes specified.

The range is 0 (never auto-disconnect) to 1440 minutes; the default is 1 minute.

**/R:n**

If LAN Manager is loaded in spooling mode, this option (retry) specifies the number of seconds to wait between printer status checks. If the printer is slow, this value should be increased.

If LAN Manager Print Station is loaded in non-spooling mode, this option (retry) instructs the spooler to wait for the specified number of seconds before failing the print request. Since the nonspooling mode does not maintain a queue, print jobs that run into a printer error are held until either the error clears or the retry time (n seconds) passes. After n seconds, the print job will fail. After the printer error is determined and corrected, the remote user can send the print job again. It is recommended that **/R** be set to a small value for the nonspooling mode, since the remote user's computer cannot continue any processing until it receives a response to its network print request.

The range is 1 to 255 seconds; the default is 5.

**/B:n**

Configures the maximum number of network buffers that LAN Manager Print Station allocates when it is loaded into memory. Network buffers are used to build network packets for sending data across the network. Each network buffer uses 128 bytes of memory. When there are more network buffers, more information can be sent in each packet, and spool files encounter less competition for the buffer. This can dramatically affect network performance, so low numbers of network buffers should be avoided.

The range is 1 to 20 buffers; the default is 5.

**/C:n**

Specifies the maximum number of remote sessions that can be active at once, that is, the number of **net use** connections users can establish with the host workstation to use LAN Manager Print Station. Each session takes only 24 bytes of memory.

The range is 1 to 20 sessions; the default is 5.

**/E**

Enables the host workstation to send messages from the printer to the remote user who has sent the print job.



The default is for the host workstation not to send these messages.

***/F:n***

Specifies the maximum number of spool files that can be open on the host workstation at once. There is no constraint on how many of these spool files a single remote session can have open.

Spool file structures are allocated when LAN Manager Print Station is loaded and take up 64 bytes of memory each. Since one cache block is allocated per spool file, the total memory used for each spool file is actually 64 bytes + the size of the cache block. The size of the cache block is set with the ***/M*** option.

If possible there should be at least one network buffer allocated for every spool file. Network buffers are set with the ***/B*** option.

The range for ***/F*** is 1 to 10 spool files; the default is 5. To load LAN Manager Print Station in nonspooling mode, set ***/F:0*** (spool files equal to zero).

***/K:jobid***

Deletes the print job specified by jobid. To obtain the jobid number, either view the queue through Print Manager (if you are using the Windows operating system), or use the command:

```
net print \\hostcomputername\lpt
```

The jobid will appear on the line for the print job you want to delete.

***/P:password***

Protects the printer share with a password. Only users who know the password will be able to connect to the workstation to use LAN Manager Print Station.

The password may be up to 15 characters long.

***/S***

Enables separator pages. One extra page, with the remote user's name, will be printed per print job.

***/W:directory***

Specifies the working directory where LAN Manager Print Station will keep its spool files. If no option is specified, the directory that was current when LAN Manager Print Station was loaded will be used. By specifying a working directory, you can prevent the user at the host workstation from being distracted or annoyed by the appearance of temporary files in a directory that is reserved for other work.

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Generally, you should not delete spool files from the working directory, as doing so could disrupt a remote print job. All spool files are deleted at the end of the print job.

This option does not affect LAN Manager Print Station in the nonspooling mode.

#### **/D**

Removes LAN Manager Print Station from memory. This option cannot be used with any other options.

This will free all memory reserved for caching spool files, as well as freeing the memory used for the program itself. It will cancel any jobs that have not completed and will remove the computername from the network's list of available servers. You can restart LAN Manager Print Station any time after you have successfully removed the program from memory.

In some instances, other applications may hook the interrupts that LAN Manager Print Station chained when the program was started. If this happens, the **printsta /D** command will be unable to unhook those interrupts and will continue to use a small amount of memory to handle them. In this case, you will not be able to restart LAN Manager Print Station until you have rebooted your computer.

#### **Comments**

The workstation running LAN Manager Print Station must be running MS-DOS version 3.3 or later and LAN Manager version 2.1a or later.

LAN Manager Print Station uses only conventional memory. The default configuration uses just over 6K of memory. If you allow more than the default number of spooled files, network buffers, and/or remote connections, or if you increase the cache size, the memory requirements can be as much as 51.4K. If you use the minimal configuration with the spooler enabled, you can reduce the memory requirements to 5.4K. For low-memory configurations, you can disable the spooler, lowering the memory requirements to 5.0K. If disk space is not available for temporary files, it is a good idea to disable the spooler. However, if the spooler is disabled, users who send print jobs to this printer will be unable to use their workstations until their print job is done.

LAN Manager Print Station can only be reached via the first protocol on the workstation sharing the printer. Usually, this is the first protocol listed in that workstation's PROTOCOL.INI file. However, the order of protocols can be

changed with the **wrknets** keyword in the [workstation] section of the LANMAN.INI file. The protocol need not be the first protocol on the remote workstation that is sending the job. For example, if NetBEUI is the first protocol on the workstation sharing the printer, workstations sending jobs must use NetBEUI as one of their protocols.

The workstation sending a print job must establish a network connection to the LAN Manager Print Station host workstation. MS-DOS workstations must be running LAN Manager version 2.0 or later; OS/2 workstations must be running LAN Manager version 2.1a or later.

### **Loading LAN Manager Print Station on the Host Workstation**

To allow other users to send print jobs to your printer, you must load LAN Manager Print Station as a terminate-and-stay-resident (TSR) program, using the **printsta** command. If necessary, you can also unload the program. LAN Manager Print Station must be loaded prior to the Windows operating system. If you are using the AUTOEXEC.BAT file to load Print Station and to start the Windows operating system, be sure the line to load Print Station comes before the line that starts the Windows operating system, but after the line that starts the Workstation service.

To load LAN Manager Print Station

- Type **printsta** [*options*], where *options* are those listed in this command reference.

To unload LAN Manager Print Station

- Type **printsta /d**.

For details, see the description of the **/D** option.

### **To Use LAN Manager Print Station from a Remote Workstation**

You can connect to a LAN Manager Print Station printer as you would to any other printer, using the computername as the servername and LPT as the sharename. For example, to connect to the printer on the workstation `\\WILDWOOD`, you would connect one of your logical LPT ports to `\\WILDWOOD\LPT`.

### Examples

- To start Print Station with spooling disabled, type:  
`printsta /f:0`
- To start Print Station, giving remote print jobs minimal priority for processing time, type:  
`printsta /t:255`
- To start Print Station, allowing up to 5 spool files and 5 buffers, with 500 bytes of cache memory per spool file (2.5K bytes of cache memory will be allocated), type:  
`printsta /f:5 b:5 /m:500`

### See Also

For information about	See
Using printsta	Chapter 3, “Using Shared Printers”
Other print spoolers	Clispool, Clipcach

## **Prtsc**

### **Purpose**

The **prtsc** utility is a terminate-and-stay-resident (TSR) program used to flush the print spooler when an application has failed to send an end-of-job signal.

### **Syntax**

**prtsc**

### **Comments**

This loads the utility into memory. To flush the spooler, press CTRL+ALT+PRINT SCREEN.

The **prtsc** utility is used to explicitly flush the spooler. Most applications send a signal that is recognized by the spooler as an end-of-job signal. On workstations with LAN Manager Enhanced, the time-out feature will flush the spooler if no data is sent for a specified length of time.

If you use this utility, you cannot stop the workstation using the **net stop workstation** command.

### **See Also**

For information about	See
Using prtsc	Chapter 3, "Using Shared Printers"

## Uchmod

### Purpose

The **uchmod** command allows you to change the UNIX system access permissions of a LAN Manager for UNIX Systems file or directory. This command is only available when you have a LAN Manager for UNIX Systems server on your network.

### Syntax

**uchmod** [*who*] { { + | - | = } *permissions* } *pathname*

**uchmod** *user#group#other#* *pathname*

where

*who*

Represents the UNIX system user classification for which access permissions are changed. Replace *who* with **u** (user), **g** (group), **o** (others), or **a** (all classifications). When the *who* option is not specified, all user classifications are changed.

+

Adds the specified access permissions to the specified file or directory.

-

Removes the specified access permissions from the specified file or directory.

=

Sets access permissions to the groups or access permissions specified in the *permissions* option.

*permissions*

Represents the access permissions you want to assign to or remove from the directory or file. Replace *permissions* with any or all of the following: **r** (read), **w** (write), **x** (execute), **l** (lockable), **s** (set ID for user or group), or **t** (hold text file in swap space).

*pathname*

Represents the name of the file or directory to be affected. You can use wildcard characters.

*user#*

Represents the access permission value for the owner of the file or directory. Replace **user#** with the sum of any combination of the following values: 4 (for read), 2 (for write), 1 (for execute).

*group#*

Represents the access permission value for the group. Replace **group#** with the sum of any combination of the following values: 4 (for read), 2 (for write), 1 (for execute).

*other#*

Represents the access permission value for other users. Replace **other#** with the sum of any combination of the following values: 4 (for read), 2 (for write), 1 (for execute).

### Comments

To access the **uchmod** command, first link to the DOSUTIL shared directory on a LAN Manager for UNIX Systems server. For example:

```
net use d: \\server1.serve\dosutil
```

### Examples

- You want to change the group (g) and other (o) access permissions of the file example to read-only. The UNIX system access permissions for example are currently read, write, and execute for user, group, and other (rwxrwxrwx). You type:

```
uchmod go-wx example
```

This changes the access permissions to rwxr--r--.

- You want to change the user (u) access permissions of the file two to read and execute. The UNIX system access permissions for two are currently read-only for user, group, and other (--x--x--x). You type:

```
uchmod u+r two
```

This changes the access permissions to r-x--x--x.

- You want to change the other (o) access permissions of the file list to execute only. The UNIX system access permissions for list are currently read-only for user, group, and other (r--r--r--). You type:

```
uchmod o=x list
```

Enhanced Reference  
Command and Utility Summary

This changes the access permissions to r--r---x.

- You want to change the access permissions of all user classifications for the file `milton` to read-only, using numbers instead of letters. The UNIX system access permissions for `milton` are currently 644 (rw-r--r--). You type:

```
uchmod 444 milton
```

This changes the access permissions to r--r--r--.

**See Also**

For information about	See
Using the <code>uchmod</code> command	Appendix C, “Connecting to a LAN Manager for UNIX Systems Server”
Other UNIX system commands	<code>Ud</code> , <code>Udir</code> , <code>Uren</code>
Executing UNIX system commands	<code>Netrun</code>



## Ud

### Purpose

The **ud** command converts a UNIX system text file to MS-DOS format, or an MS-DOS file to UNIX system format. This command is only available when you have a LAN Manager for UNIX Systems server on your network.

### Syntax

```
ud [{-d | -m | -u } -z ] file1 [ file2 ]
```

where

#### **-d**

Converts the file to MS-DOS format. If the file is already in MS-DOS format, it is copied to the second file.

#### **-u**

Converts the file to UNIX system format. If the file is already in UNIX system format, it is copied to the second file.

#### **-z**

Prevents ^Z from being appended to the end of a file converted from UNIX system format to MS-DOS format, or ignores ^Z characters in a file being converted from MS-DOS format to UNIX system format.

#### *file1*

Represents the name of the file you want to convert. This file remains unchanged after the command is executed.

#### *file2*

Represents the name you want to assign to the converted version of the file.

### Comments

To access the **ud** command first link to the DOSUTIL shared directory on a LAN Manager for UNIX Systems server. For example, type:

```
net use d: \\server1.serve\dosutil
```

When entered without the **-d** or **-u** parameter, **ud** converts an MS-DOS file to UNIX system format or a UNIX system file to MS-DOS format. If you do not redirect the output to a second file, the file is converted and its text is displayed on your screen. You can also use a pipe ( | ) to send a reformatted file to a program.

### Examples

- To convert a UNIX system file named `text.unx` to MS-DOS format, and place the output in a file named `text.dos`, type:

```
ud -d text.unx >> text.dos
```

- To convert a UNIX system file named `unitext` to OS/2 format, then sort the file and place the output in a file named `text.srt`, type:

```
ud -d unixtext | sort >> text.srt
```

### See Also

For information about	See
Using the <b>ud</b> command	Appendix C, “Connecting to a LAN Manager for UNIX Systems Server”
Other UNIX system commands	Uchmod, Udir, Uren
Executing UNIX system commands	Netrun

## Udir

### Purpose

The **udir** command lists files and directories, including those not displayed by the MS-DOS **dir** command, and displays the UNIX system access permissions. This command is only available if you have a LAN Manager for UNIX Systems server on your network.

### Syntax

**udir** [ **-n** | **-t** | **-u** | **-r** | **-d** ] [*pathname*]

where

#### **-n**

Lists file and directory names only.

#### **-t**

Lists the newest files first.

#### **-u**

Lists files on the server that are not available to the MS-DOS or OS/2 system.

#### **-r**

Displays the files in reverse alphabetical or chronological order.

#### **-d**

Displays the directory parameter only.

*pathname*

Represents the name of the directory and file to be listed. You can use a wildcard character with the filename.

### Comments

To access the **udir** command, first link to the DOSUTIL shared directory on a LAN Manager for UNIX Systems server. For example, type:

```
net use d: \\server1.serve\dosutil
```

Enhanced Reference  
Command and Utility Summary

If a UNIX system filename contains characters that are invalid in MS-DOS or is longer than the MS-DOS limit, you can use **udir** to list the file. If the specified resource is on a server running the UNIX operating system, **udir** displays information in a format like that displayed by the UNIX system **ls -l** command. If the specified resource is on a computer running the MS-DOS or OS/2 operating system, **udir** displays information in a format like that displayed by the MS-DOS **dir** command.

---

**NOTE:** Filenaming conventions are based on the MS-DOS filenaming conventions (the File Allocation Table, or FAT).

---

### Examples

- You want to list the contents of the shared directory linked to drive ID F. You type

**udir f:**

The following appears.

```
C: udir f:
Status: RO
Volume in drive F: is CARPET_SERV
Directory of f:/*
UNIX-based server 'CARPET.SERVE' in share area 'VACUUM'
DOS Name          Owner      Group      Modes UNIX Name
.                  <DIR> 10-28-92  4:45p lanman  DOS----  rwxrwxr-x .
. .               <DIR> 10-22-92  8:51a root   root    rwxrwxrwx ..
                  65  10-28-92  4:39p root   other   rw-r--r--
name_too_long
NET.DIR           <DIR> 10-24-92  9:13a glenn  DOS----  rwxrwxr-x net.dir
OK_FOR.DOS       232 10-28-92  1:51p glenn  DOS-a--  rw-rwlr--
ok_for.dos
ROOTFILE 642950 10-25-92  2:19p root   other   rw-r--r-- rootfile
6 Files          150.72 Megabytes freeu
```

- You want to list the contents of the current directory on your local drive C. You type

**udir**

The following appears:

```
C:\udir
Volume in drive C: is DOS401
Directory of C:\.
autoexec.bat      rw--a      145        6-08-92     10:05a
config.sys        rw--a      344        6-08-92     9:30a
landoc            rw--a      <DIR>      8-10-92     7:30a
dos3_2            rw---      <DIR>      6-10-92     11:08a
ibmdos.com        r-hsa      28009      9-12-92     3:45p
report1.dft       rw--a      8128      8-02-92     5:30p
report2.dft       rw--a      9012      8-16-92     9:30a
res.scr           rw--a      2045      8-08-92     8:30p
tmp               rw--a      23606     1-01-92
9 Files          26.78 Megabytes free
```

### See Also

For information about	See
Using the <b>udir</b> command	Appendix C, “Connecting to a LAN Manager for UNIX Systems Server”
Other UNIX system commands	Uchmod, Ud, Uren
Executing UNIX commands	Netrun

## Unload

### Purpose

The **unload** utility unloads a specified protocol from a workstation with Demand Protocol Architecture (DPA).

### Syntax

**unload** *protocol*

where

*protocol*

Is the name of the last protocol loaded. Information regarding protocols is placed in the PROTOCOL.INI file and in the LANMAN.DOS\DRIVERS\PROTOCOL directory by the installation program. You should not edit these files.

### Comments

Protocols must be unloaded in the reverse of the order in which they were loaded (last in is first out). To get information about what protocols are loaded, and in what order, type:

**load /i**

Do not use the **unload** utility while running the Microsoft Windows operating system. Either unload the protocol before running the Windows operating system, or stop the Windows operating system, unload the protocol, and then restart the Windows operating system.

See Also

For information about	See
Other Demand Protocol Architecture utilities	Load, Netbind, Installation Guide for Clients
Loading a protocol	Load
Installing and configuring protocols	Installation Guide for Clients

## Uren

### Purpose

The **uren** command renames or moves files on a server running the UNIX operating system. This command is only available if you have a LAN Manager for UNIX Systems server on your network.

### Syntax

**uren** *oldfilename newfilename*

**uren** *filename1 [ filename2... ] directoryname*

where

*oldfilename*

Represents the original filename.

*newfilename*

Is the new filename.

*filename1*

Represents the name of the file you want to move.

*filename2...*

Represents any additional files that you want to move.

*directoryname*

Is the name of the destination directory.

### Comments

To access the **uren** command, first link to the DOSUTIL shared directory on a LAN Manager for UNIX Systems server. For example:

```
net use d: \\server1.serve\dosutil
```

You cannot use the **uren** command to move a file from one drive to another. In addition, you cannot use the wildcard character \* with the **uren** command.

### Examples

- You want to rename TOOBIGFORDOS to OKFORDOS. Type  
`uren toobigfordos okfordos`
- You want to move files ABC and DEF to the DIR1 directory. Type  
`uren abc def dir1`

### See Also

For information about	See
Using the <b>uren</b> command	Appendix C, “Connecting to a LAN Manager for UNIX Systems Server”
Other UNIX system commands	Uchmod, Ud, Udir
Executing UNIX system commands	Netrun



---

**Using LAN Manager Basic**

## Using LAN Manager Basic

This chapter explains how to start and use LAN Manager Basic, get online Help, connect to directories and printers over a local area network, and print jobs over the network. Instructions for viewing, pausing, and continuing your workstation's network connections are included. For information about LAN Manager Enhanced, see Part 1, "LAN Manager Enhanced."

## **Starting LAN Manager Basic**

When you turn on your computer, LAN Manager Basic begins automatically. You can connect to resources on the network, for example, sharing files with other network users and using remote printers as though they were attached directly to your own workstation. Some connections may be made for you automatically; you can make other connections yourself. If the persistent connections feature is in effect on your workstation, the connections you have when you log out will be restored the next time you log on. For more information, see your network administrator.

## Getting Help

LAN Manager Basic gives you two kinds of Help: a listing of all the commands for which Help is available and information about a specific command.

**To see a list of LAN Manager Basic commands and an explanation of their syntax**

- Type **net help**.

There are two ways to get Help for a specific command:

- Type **net help** followed by the command name. (Don't type **net** as part of the command name.)
- Type the full command name followed by **help**.

For example, you can type

```
net help print
```

– Or –

```
net print help
```

## Using Shared Directories

With LAN Manager Basic, you can use a shared directory in much the same way you use a directory or disk on your workstation. For example, you can use the files and applications in a shared directory as though they were stored on your workstation's hard disk.

LAN Manager Basic gives you access to shared directories in two ways. You can connect your workstation to a shared directory by assigning a disk devicename to the directory. You can also specify the shared directory as part of a path in some MS-DOS commands. These procedures are explained in the following two sections.

In both cases, the shared directory is identified by a network path. A network path is a server's computername followed by a sharename. A sharename is a name that identifies a shared resource (directory or printer queue). When you type a network path from the command line, two backslashes (\\) precede the computername, and another backslash precedes the sharename.

For instance, \\PRODUCT\REPORTS specifies a network path for the REPORTS shared directory on the \\PRODUCT server.

### Connecting to a Shared Directory

You can connect your workstation to a shared directory by assigning a devicename to it. A devicename is a letter followed by a colon (for example, D:). You use the devicename to gain access to the shared directory, just as you use A: to gain access to a floppy disk drive on your workstation. Devicenames A: through Z: are available for assigning to shared directories.

---

**NOTE:**

If you assign a local drive devicename to a disk drive on the network, your workstation recognizes the network connection rather than the local drive, unless the network connection is paused or disconnected.

---

#### To connect to a shared directory

- Type `net use devicename: \\computername\sharename`.

## Using LAN Manager Basic Using Shared Directories

For example, to assign the S: devicename to the MIDWEST shared directory on the \\SALES server, type:

```
net use s: \\sales\midwest
```

If you make a mistake in typing a command or if you specify an incorrect network path when connecting to a shared directory, the following error messages may appear:

```
Connection refused or syntax error
```

```
Network name not found
```

Some resources require you to supply a password to make a connection. If you don't supply a password when one is required, the following error message appears:

```
Access denied
```

To learn how to supply passwords, see "Using Passwords," later in this section.

After you establish a connection, you no longer need to specify the network path to gain access to the shared directory. Instead, specify the devicename you assigned to the directory.

For instance, if you assign S: to the \\SALES\MIDWEST directory, S: represents the network connection in the same way C: represents your workstation's hard disk drive. You can change the current drive to S: and use the shared directory as though it were one of your workstation's disk drives.

### Using Passwords

You may have to type a password with **net use** to gain access to a shared directory. In order to gain access, your computername must be the same as your username, and you must know the password for the directory.

To check your computername

- Type **net name**.

If it is not the same as your username, see the **net name** command for information on changing your computername.

Your administrator can give you the correct password for the directory you want to use.

There are two ways to supply the password:

- Type the password at the end of the **net use** command.

For example, to supply the password region while assigning S: to the MIDWEST shared directory on the \\SALES server, type:

```
net use s: \\sales\midwest region
```

- Type an asterisk (\*) instead of the password at the end of the command. LAN Manager Basic then prompts you for a password.

For example, to substitute an asterisk for the password in the previous example, type:

```
net use s: \\sales\midwest *
```

The following prompt appears:

```
Password:
```

Type the password at the prompt. The password doesn't appear on the screen when you type it in response to the prompt, which keeps the password confidential.

## Using MS-DOS Commands with Shared Directories

You can use the network path of a shared resource as part of a path in some MS-DOS commands. In this case, LAN Manager Basic connects to the server sharing the directory when the command is performed, provided the directory doesn't require a password.

You don't have to assign a devicename to a shared directory when the network path is used as part of an MS-DOS command. When a devicename is assigned, you can specify the devicename rather than the network path in the command.

You can also use a file in a shared directory with any application that runs under MS-DOS. For example, to edit the LIST.DOC file in the \\SALES\MIDWEST directory with Microsoft Word, type:

```
word \\sales\midwest\list.doc
```

---

**NOTE:**

---

If you want to use a shared directory in an MS-DOS command but the directory requires a password, you must type **net use**, the network path, and the password. You don't need to specify a devicename.

You cannot use network paths with the following MS-DOS commands:

- dir
- copy

However, after you've assigned a devicename to a remote directory (for example, D:), you can use the **dir** and **copy** commands as you do with a local subdirectory.

The following MS-DOS commands, which read from and write to a disk, cannot be used with shared directories and their files:

- chkdsk
- diskcopy
- format
- join
- recover
- subst
- sys

If you try to use a command that reads from or writes to a disk with a shared directory, the following message appears:

```
Cannot [command] a Network drive  
where
```

```
[command]
```

is the name of the command you typed.

### **Disconnecting From a Shared Directory**

You can disconnect your workstation from a shared directory when you finish using it or when you want to assign the devicename to another resource.□



To disconnect your workstation from a shared directory

- Type `net use devicename: /delete`.

You can abbreviate the `/delete` option as `/d`.

For example, to disconnect D: from a shared directory, type:

```
net use d: /delete
```

## Using Shared Printers

With LAN Manager Basic, you can use shared printers by connecting your workstation to a shared printer queue. A printer queue manages print jobs by collecting the files that users want to print and sending them to a printer in the order they're received. Incoming jobs are held in the queue until the printer is ready to print them.

When you connect your workstation to a shared printer queue, you send print jobs to the queue just as you send print jobs to a printer attached to your workstation.

### Connecting to a Shared Printer Queue

You can connect your workstation to a printer queue by assigning the queue a devicename. Devicenames LPT1 through LPT3 are available for assigning to printer queues.

To connect your workstation to a printer queue

- Type **net use devicename: \\computername\queue**.

For example, to assign LPT1 to the PRINT1 printer queue on the \\FINANCE server, type:

```
net use lpt1: \\finance\print1
```

When you use a devicename that is also assigned to a printer at your workstation, your workstation recognizes only the network connection when you use the devicename. To get your workstation to recognize the printer that is attached to your workstation, you must disconnect or pause the connection to the shared printer queue. For more information about disconnecting and pausing, see “Net Use” and “Net Pause” in Chapter 7, “Basic Reference.”

---

**NOTE:**

---

You may need to supply a password with **net use** to gain access to a shared printer queue. For more information about supplying passwords, see “Using Passwords,” earlier in this chapter.

### Printing over the Network

After you assign a devicename to a shared printer queue, there are two ways to print a file over the network. You can print a file from within an application, or you can send a closed file directly to the devicename.

To print a file

- 1 To print from a software application, set up the file to print to the devicename you assigned to the shared printer queue. Then print as you normally would.
- 2 To send a closed file to a devicename you assigned to a printer queue, type:

```
net print filename devicename:
```

For example, to send the STATUS.DOC file to the printer queue connected to LPT1:, type:

```
net print status.doc lpt1:
```

### Viewing the Status of a Print Job

You can view the contents of a shared printer queue connected to a device, or you can view the contents of all the printer queues on a server.▣

To view the contents of a shared printer queue connected to a devicename

- Type **net print devicename:**.

For example, to view the printer queue that connects to LPT1, type:

```
net print lpt1:
```

To view the contents of a server’s printer queues

- Type **net print \\computername.**

For example, to view the contents of printer queues on the \\FINANCE server, type:

```
net print \\finance
```

## Using LAN Manager Basic Using Shared Printers

You don't need a connection to a server to view the contents of its queues. When you specify either a devicename or a computername, a display similar to the following appears:

Pos	ID	Size	Date	Time	Name	Status
001	268	115074	07-15-92	16:20	ANDREWS	Printing
002	269	65174	07-15-92	16:22	KATIEMC	Waiting
003	270	34594	07-15-92	16:25	SETHJ	Waiting
004	271	103465	07-15-92	16:28	CAROLR	Waiting

For each print job, the position in the queue, identification number, size (in bytes), date, time, owner, and status display.

### Disconnecting from a Shared Printer Queue

You can disconnect your workstation from a shared printer queue when you finish using the resource or when you want to use the connection for another resource.

To disconnect from a shared printer queue

- Type `net use devicename: /delete`.

You can abbreviate the `/delete` option as `/d`.

For example:

```
net use lpt1: /d
```

### If a Print Job Fails to Send an End-of-Job Signal

In some cases, an application may not send an end-of-job signal that is recognized by the print spooler. Without this signal, the spooler cannot pass the job to the printer, and the spooler is not free to accept other jobs.

The `prtsc` utility solves this problem. The `prtsc` utility is a terminate-and-stay-resident (TSR) program. To load this utility, type:

```
prtsc
```

at the command line. To load the utility automatically, include it in the `wrkservices` entry and also in the `[services]` section of the LANMAN.INI file. For example, if `prtsc` is included in the `wrkservices` entry:

```
wrkservices = messenger,netpopup,prtsc,encrypt
```

the [**services**] section should include the following:

**prtsc = netprog\prtsc.exe**

If the workstation has prtsc, you can release the print job by pressing CTRL+ALT+PRINT SCREEN.

## Listing Connections to Network Resources

You can view your connections to shared directories and printer queues during a working session.

To view the status of your workstation's connections or the names of the shared devicenames and resources you're using

- Type **net use**.

A display similar to the following appears:

Status	Local Device	Network Name
	D:	\\FINANCE\SYS
	E:	\\SALES\SUSANKO
	F:	\\FINANCE\APPS
ERROR	LPT1:	\\FINANCE\LASERJET

The listing shows all of the network resources connected to your workstation.

If ERROR appears in the Status column, the connection is no longer active or was suspended by the server. In this case, you may need to delete the connection and connect to the resource again.

## Pausing and Continuing Connections

Occasionally, you may want to pause network connections to use devicenames for your workstation's own disk drives or printers.

To pause network connections

- To pause connections to all shared directories, type **net pause drdr**.
- To pause connections to all shared printer queues, type **net pause prdr**.
- To continue connections to all shared directories, type **net continue drdr**.
- To continue connections to all shared printer queues, type **net continue prdr**.

For example, if you assign your workstation's LPT1 devicename to a shared printer, you can't use LPT1 for a local printer. To pause this connection, type:

```
net pause prdr
```

You can now use LPT1 for the printer attached to your workstation.

---

**NOTE:**

Pausing one printer connection pauses all printer connections.

When you want to use the shared printer again, type:

```
net continue prdr
```

Your connections to shared printer queues reactivate.

## Managing a Shared Printer

---

**NOTE:**

---

Read this section only if a shared printer is attached to your workstation. If you have a printer attached to your workstation but are unsure if it is a shared printer, ask your administrator.

If a shared printer is attached to your workstation, follow the guidelines in the next section when using the printer. These guidelines not only ensure that you get the most out of your printer but also ensure that it is accessible to users at other workstations on the network. In addition to following these guidelines, you and your administrator often share responsibility for managing the shared printer.

This section describes the following:

- Guidelines for using a shared printer attached to your workstation
- Your administrator's responsibilities for managing a shared printer
- Your responsibilities for managing a shared printer
- Maintaining a link to the server
- Disabling and enabling the printer

Information on troubleshooting shared printers is provided in Appendix D, "Troubleshooting."

### Recommendations for Using a Shared Printer

Follow these recommendations when using your shared printer:

- Access your printer as a shared resource rather than a local resource. Accessing the printer as a shared resource enables you to:
  - Hold print jobs.
  - Supply reset sequences for the printer.
  - Print banner pages.
  - Use the server as a personal print spooler, queueing jobs before printing.
- Always use an unused port ID when you link to the printer queue on the server. Using the port ID that connects your printer to your workstation will prevent your



job and other jobs from printing. For example, if you have a shared printer attached to the LPT1 (or PRN) port on your workstation, link to the printer queue (or to other shared printer queues) using LPT2 or another port ID.

- If you must use your printer locally, use the MS-DOS print command, or disable the printer as a network resource and use it locally. For more information about the MS-DOS print command, see your MS-DOS manual. For information on disabling the printer, see “Disabling and Enabling the Printer,” later in this section.

### Administrator’s Responsibilities

Your administrator is often responsible for connecting the shared printer to your computer and ensuring that the appropriate LAN Manager Spooler Agent software is automatically loaded on your workstation. LAN Manager supports two workstation print spooling programs:

- The LAN Manager Print Station utility (the **printsta** command) shares a workstation’s printer with one other workstation at a time, without involvement of a server.
- The LAN Manager Clispool program (the **clispool** command) supports the print spooler (the **print** command) that comes with MS-DOS. This program is only available if you have a LAN Manager for UNIX Systems server on your network.
- The LAN Manager Clipcach program (the **clipcach** command) supports the print spooler that comes with LaserTools PrintCache version 2.4a. This program is only available if you have a LAN Manager for UNIX Systems server on your network.

---

**NOTE:**

LaserTools PrintCache must be purchased separately.

The Clispool and Clipcach programs receive print jobs sent through the server from workstations and pass them to the appropriate print spooling program for printing. For more information about the clispool and clipcach commands, see Chapter 5, “Enhanced Reference.” For more information about the LaserTools PrintCache software, see the LaserTools PrintCache manual.

With **clispool** and **clipcach**, your administrator is also responsible for maintaining the printer queue (including such tasks as deleting jobs from other users) and for setting printer parameters.

For more information about the **printsta** command, see Chapter 7, “Basic Reference.”

### Your Responsibilities

You are responsible for the following tasks:

- Maintaining the printer’s link to the server
- Disabling the printer when necessary

When you use the LAN Manager Print Station utility, you are fully responsible for the printer; print jobs come directly to your workstation and not through an intermediary server.

The remainder of this section provides information for maintaining the printer as a shared resource. Of course, the printer also requires the same routine maintenance any printer requires, such as maintaining the paper supply and replacing the ribbon or toner. For information about routine printer maintenance, see the guide packaged with your printer.

#### Maintaining the Link to the Server for Clispool or Clipcach

When a user sends a print job to the shared printer connected to your workstation, the server automatically establishes a link between itself and your workstation. This link uses the drive ID specified by your administrator. You do not need to establish this link yourself.

When you boot your workstation and automatically load the printing programs, the drive ID used for shared printing is displayed, along with a copyright notice. Do not use this drive ID for another link, because you might disrupt a print job.

#### Disabling and Enabling the Printer

You can disable the printer by turning it off or by using the **clispool** or **clipcach** command, depending on which print spooler you use. You may need to turn your printer off if it needs to be serviced. You may want to disable your printer using the **clispool** or **clipcach** command if you need exclusive use of the printer or if you must use the printer locally. The printer queue continues to accept jobs, but the jobs will not print until you re-enable the printer.

---

**NOTE:**

---

If you want to use your printer locally without disabling it, use the **print** command. For example, type **print myfile**. At most, one print job from the server may print before your job is printed.

### Turning Off the Power

If you turn off your workstation or printer, any print jobs sent to the printer will accumulate in the printer queue on the server. These jobs will start printing when your workstation and printer are turned on again.

To disable the printer

- Type **clispool /d** or **clipcach /d** and press ENTER.

To enable the printer

- Type **clispool /e** or **clipcach /e** and press ENTER.

### Using the Print Station Utility

When the LAN Manager Print Station utility is started on a workstation, the workstation appears as a server to the network. This allows other users to connect to the printer, as they would to any other network printer. However, you cannot view the queue with the **net view** command.

In the default implementation of LAN Manager Print Station, print jobs are written to a file on the host computer (the one running **printsta**) and then sent to the printer. This process, called spooling, allows the person sending the print job to regain control of his or her computer without waiting for the job to print. If the disk space for temporary print files is not available, you can load LAN Manager Print Station with spooling disabled.

Printing takes place as a background task on the host computer; the person using that workstation is not interrupted by print jobs from other users.

The Netpopup or Winpopup utility sends messages to the host workstation when the LAN Manager Print Station encounters errors such as “printer out of paper.”

If you load Print Station in nonspooling mode, or if print jobs will be spooled from workstations running OS/2, you should not have messages sent to the host workstation. Loading Print Station in nonspooling mode automatically disables Netpopup or Winpopup. If jobs will be spooled from workstations running OS/2, disable Netpopup or Winpopup manually.

### **Disabling and Enabling the Printer**

You can disable the printer by turning it off or by using the **printsta** command. You may need to turn your printer off if it needs to be serviced. You may want to disable your printer using the **printsta /d** command if you need exclusive use of the printer or if you must use the printer locally. The printer queue continues to accept jobs, but the jobs will not print until you re-enable the printer.

For more information, see Chapter 5, “Enhanced Reference,” or Chapter 7, “Basic Reference.”

---

## **Basic Reference**

This chapter contains a reference page for every LAN Manager Basic command and utility. Each page describes the purpose and syntax of the command or utility.

## **Abbreviating Commands and Options**

The reference pages in this chapter spell out all command and service names. If a command can be abbreviated, its abbreviation is listed on the reference page for the command. You can abbreviate any command option by typing enough letters to distinguish it from the command's other options.

## Using the /Yes and /No Options

Many LAN Manager Basic commands require confirmation to complete a task. To expedite this confirmation, you can append the **/yes** or **/no** option to the command. The **/yes** and **/no** options can be abbreviated **/y** and **/n**.

For example, the **net logon** command logs you on to the network. But when another user is already logged on at the workstation you are using, you must log off that user before you can log on.

To log on at a workstation at which another user is also logged on (your username is *chrisj* and your password is *daffodil*), type:

```
net logon chrisj daffodil
```

Be careful that no one sees your password. So that no one sees your password as you type, you can use an asterisk (\*) instead of your password. In this example you would type:

```
net logon chrisj *
```

If you use the asterisk, you will be prompted for your password. The password does not appear on the screen when you type it in response to the prompt. LAN Manager Basic returns a series of prompts asking you to confirm logging off the current user and canceling the workstation's existing connections. You must respond to each prompt by typing **y** or pressing ENTER before you can proceed with the logon. To log on without prompts, add the **/y** option to the **net logon** command. Type:

```
net logon chrisj daffodil /y
```

Remember, you can protect your password by substituting an asterisk (\*). In this example, you would type:

```
net logon chrisj * /y
```

The only prompt you will receive will be the prompt for your password.

## Using Passwords with Commands

Some commands require a password to connect to a shared resource. With LAN Manager Basic, there are two ways to supply a password:

- Type the password with the command. For example, to provide the password `petunia` while assigning LPT1 to the LISTS shared directory on the \\ADMIN server, type:

```
net use lpt1: \\admin\lists petunia
```

- Type an asterisk (\*) instead of the password. When you type an asterisk instead of a password, LAN Manager Basic prompts you for the password. For example, type:

```
net use lpt1: \\admin\lists *
```

LAN Manager Basic then displays this prompt:

```
Type the password for \\ADMIN\LISTS:
```

When you type the password at this prompt, the letters are not displayed. This keeps the password confidential.



## Controlling a Screen Display

Some commands (for example, **net help**) produce more than one screenful of text. In these cases, the screen scrolls automatically until you stop it.

To stop the display from scrolling

- Press **PAUSE** or **CTRL+S**.

To resume scrolling

- Press any key.

You can also use the MS-DOS **more** command to scroll one screen at a time. For example, to display one screenful of Help text at a time, type:

```
net help start workstation | more
```

Be sure to type the vertical bar, or *pipe*. To display another screenful, press any key at the --More-- prompt.

## Using Commands in Batch Programs

LAN Manager Basic commands can be used in batch programs (.BAT files), such as AUTOEXEC.BAT. For example, you can group the commands for starting the Workstation service, logging on to the network, and making network connections in one executable program. Command options can also be included in batch programs. To avoid confusion, do not abbreviate command options when putting commands in a batch program.

---

**NOTE:**

To maintain network security, do not put your password in a batch program. Instead, use an asterisk (\*) where the password would go, to be prompted for the password when the batch program is run. The password will not be displayed as you type it.

---

---

## Command and Utility Summary

The following list describes the LAN Manager Basic commands and utilities:

To	Use this command
Connect to a shared resource	<b>net use</b>
Disconnect from a shared resource	<b>net use</b>
View a list of Help topics	<b>net help</b>
Get Help for a specific command	<b>net help</b> command
See the contents of a shared printer queue	<b>net print</b>
Learn what workstation connections are in effect	<b>net use</b>
Start a workstation and assign a computername	<b>net start workstation</b>
Assign a computername to a workstation	<b>net name</b>
See the computername of a workstation	<b>net name</b>
Pause connections to shared resources	<b>net pause</b>
Continue a service	<b>net continue</b>
Load a different network protocol	<b>load*</b>
Bind a protocol that has been loading statically	<b>netbind*</b>
Unload a network protocol (breaking any connections that use it)	<b>unload*</b>
Flush the print spooler, releasing a print job that has no end-of-job signal	<b>lpntrsc*</b>
Access resources across a gateway (TCP/IP to TCP/IP)	<b>addname*</b>
Check physical network connections (TCP/IP)	<b>ping*</b>
Print jobs on a shared printer without using a server to spool the jobs	<b>printsta</b>

Basic Reference  
Command and Utility Summary

To	Use this command
Start NetWare using LAN Manager NetWare Connectivity	<b>nwload*</b>
Stop NetWare using LAN Manager NetWare Connectivity	<b>nwunload*</b>
Print jobs on a shared printer using LaserTools PrintCache software	<b>clipcach**</b>
Print jobs on a shared printer using the MS-DOS print command	<b>clispool**</b>
Enable a workstation to emulate a terminal when working with a LAN Manager UNIX Systems server	<b>kermit**</b>

\*This is a utility. \*\*These commands are only available when you have a LAN Manager for UNIX Systems server on your network.

## Using UNIX System Commands

The following list describes LAN Manager Basic commands you can use to work with a LAN Manager for UNIX Systems server:

<b>To</b>	<b>Use this command</b>
Change a user's permissions for a directory or file	<b>uchmod*</b>
Convert a UNIX system text file to MS-DOS	<b>ud*</b>
List files or directories and display UNIX system access permissions	<b>udir*</b>
Rename or move a file using the UNIX operating system	<b>uren*</b>
Run a program or command on a LAN Manager server	<b>netrun*</b>

These commands are only available when you have a LAN Manager for UNIX Systems server on your network.

## Addname

### Purpose

The **addname** utility lets users of Microsoft TCP/IP access resources of a server on a different TCP/IP network, using a network gateway.

### Syntax

**addname** *computername* *ipaddress*

**addname** *computername* **/delete**

**addname** **/load** | **/save** [*filename*]

where

*computername*

Is the name of the remote server whose entry you want to add or delete.

Computernames can have as many as 15 characters. These computernames do not affect the assignment of any local computername or username.

*ipaddress*

Is the IP address that corresponds to *computername*. If the computername is stored in the LMHOSTS file, the new IP address temporarily replaces the existing IP address.

### **/delete**

Deletes the specified computername from the workstation's list of current entries but not from the LMHOSTS file.

### **/load**

Loads a set of entries from the specified file. All current entries are deleted, and all entries in the specified file are added. If there is not enough room for all new entries in the file, an error is reported, and no changes are made to the list of current entries. If you don't specify a filename, the default LMHOSTS file is used.

### **/save**

Stores the list of current entries in the specified file. All entries in the file are overwritten by the current entries. If you don't specify a filename, the default LMHOSTS file is used. To delete an entry from the default **addname** configuration file, use **addname /save** after deleting the entry.

*filename*

Specifies the name of the file to load or save.

When you type **addname** with no options, the list of current addname entries is displayed.

### Comments

When your computer is configured as a LAN Manager workstation using Microsoft TCP/IP, you can use the **addname** utility to access the resources of a server that are on another TCP/IP network accessible through a network gateway. The **addname** utility matches remote LAN Manager servernames to their IP addresses.

The **addname** utility temporarily adds entries to your workstation's memory. These entries are deleted when you unload Microsoft TCP/IP from memory or when you restart your computer. To save the entries in the LMHOSTS file, use the **/save** option.

The **addname** utility can be used only when the Microsoft TCP/IP software and the NetBIOS network software are loaded into your workstation's memory. You can add as many as four entries using **addname**.

### Examples

- To temporarily add the server FLAMINGO, whose IP address is 15.6.127.8, type:  
**addname flamingo 15.6.127.8**
- To see the list of current entries, type:  
**addname**
- To save the list of current entries in the LMHOSTS file, type:  
**addname /save**
- To delete the server FLAMINGO from the LMHOSTS file, type:  
**addname flamingo /delete**
- To load new entries from the file A:\USER\MYHOSTS, type:  
**addname /load a:\user\myhosts**

This command deletes all existing LMHOSTS entries before adding all entries from A:\USER\MYHOSTS. If there are more than 63 entries in A:\USER\MYHOSTS, an error occurs, and no changes are made to the list of current entries.

## Clipcach

### Purpose

The **clipcach** command enables an MS-DOS workstation to receive network print jobs from a server and to print these jobs on a shared printer physically connected to the workstation, using the LaserTools PrintCache software. This command is only available when you have a LAN Manager for UNIX Systems server on your network.

### Syntax

```
clipcach /i /s:driveid [any | \\servername] [ /d | /e]
```

```
clipcach [any | \\servername] [/d | /e]
```

where

#### **/i**

Loads **clipcach** into memory. To load **clipcach**, use this option only after you boot the workstation.

#### **/s:driveid**

Specifies the drive ID that **clipcach** will use to link to its spool directory on the server. Replace *driveid* with the drive ID that **clipcach** is to use. To load **clipcach**, use this option only after you boot the workstation. Do not add the colon after the drive ID, for example, enter only N for *driveid*.

#### **any**

Allows **clipcach** to accept print requests from any server. Unless you specify otherwise, **any** is the default when you load **clipcach**.

#### *servername*

Represents the name of the server from which **clipcach** will accept print requests. Replace *servername* with the name of the server from which **clipcach** will accept print requests.

#### **/d**

Temporarily disables **clipcach**. Network print jobs will be submitted to the queue but will not print while **clipcach** is disabled. The printer can continue to be used locally, however.



**/e**

Re-enables **clipcach**. Network print jobs will now be printed.

### Comments

**Clipcach** is an MS-DOS terminate-and-stay-resident (TSR) program that runs on the workstation to which a shared printer is connected. **Clipcach** requires that the LaserTools PrintCache software be installed and loaded on the workstation to which the printer is connected. To receive print jobs from a server, **clipcach** automatically links to a shared spool directory on the server.

Placing PrintCache in *raw* or *cooked* mode is accomplished by using command-line switches to the PrintCache **print** command. In raw mode, tabs are not expanded and ^Z is not interpreted as the end of the file. In most cases, raw mode is acceptable for printing text files. Graphics files will not print while PrintCache is in cooked mode. Cooked mode may be required occasionally to print text files containing tabs if neither the printer nor the application generating the print job expands tabs. See the LaserTools PrintCache manual for more information.

### Examples

- To start the Clipcach program automatically and use the N: drive, add the following line to your AUTOEXEC.BAT file:

```
clipcach /i /s:N
```

- A shared printer is attached to your workstation and you want to use it locally. To do this you disable **clipcach** by typing:

```
clipcach /d
```

With **clipcach** disabled, you can use your printer locally. Network print jobs will be submitted to the queue on the server but will only be printed while **clipcach** is enabled.

- When you are done using the printer locally, and want it to be used over the network, you enable **clipcach** by typing:

```
clipcach /e
```

Network print jobs will now be printed.

- The shared printer attached to your workstation accepts print jobs from all the servers on your local area network. One of your coworkers needs to print out

several files as soon as possible. Your co-worker will be sending these print requests from the server PRINT1.SERVE. To make sure that his or her files are printed in a timely manner, you allow the shared printer to accept requests from the PRINT1.SERVE server only by typing:

```
clipcach \\print1.serve
```

- Once the files have printed, you once again allow the shared printer to accept print requests from all of the servers on the local area network by typing:

```
clipcach any
```

### See Also

For information about	See
Using clipcach	Chapter 6, "Using LAN Manager Basic"
Other print spoolers	Clispool; Printsta

## Clispool

### Purpose

The **clispool** command enables an MS-DOS workstation to receive network print jobs from a server and to print these jobs on a shared printer physically connected to the workstation, using the MS-DOS **print** command. This command is only available when you have a LAN Manager for UNIX Systems server on your network.

### Syntax

**clispool** /i /s:driveid [**any** | \\servername] [/r | /c] [/d | /e]

where

#### /i

Loads **clispool** into memory. To load **clispool**, use this option only after you boot the workstation.

#### /s:driveid

Specifies the drive ID that **clispool** will use to link to its spool directory on the server. Replace *driveid* with the drive ID that **clispool** is to use. To load **clispool**, use this option only after you boot the workstation. Do not add a colon after the drive ID, for example, enter only N for *driveid*.

#### any

Allows **clispool** to accept print requests from any server. Unless you specify otherwise, **any** is the default when you load **clispool**.

#### servername

Represents the name of the server from which **clispool** will accept print requests. Replace *servername* with the name of the server from which **clispool** will accept print requests.

#### /r

Places the MS-DOS **print** command into raw mode, which permits the printing of graphics files. In raw mode, tabs are not expanded and ^Z is not interpreted as the end of the file. In most cases, raw mode also is acceptable for printing text files, since tabs in text files are usually expanded by the printer or the application generating the print job. Unless you specify otherwise, raw mode is the default whenever you load **clispool**.

### **/c**

Places the MS-DOS **print** command into cooked mode. In cooked mode, tabs are expanded, and ^Z is interpreted as the end of the file. Graphics files will not print while **print** is in cooked mode. Cooked mode may be required occasionally to print text files containing tabs if neither the printer nor the application generating the print job expands tabs.

### **/d**

Temporarily disables **clispool**. Network print jobs will be submitted to the queue but will not print while **clispool** is disabled. The printer can continue to be used locally, however.

### **/e**

Re-enables **clispool**. Network print jobs will now be printed.

## **Comments**

To access the **clispool** command, first link to the appropriate shared directory. This command is stored in the DOSUTIL shared directory on a LAN Manager for UNIX Systems server. To perform this command, you must first link to this shared directory as in the following example:

```
net use d: \\server1.serve\dosutil
```

**Clispool** is a MS-DOS terminate-and-stay-resident (TSR) program that runs on the workstation to which a shared printer is connected. **Clispool** requires that the MS-DOS print command be installed and loaded on the workstation to which the printer is connected. To receive print jobs from a server, **clispool** automatically links to a shared spool directory on the server.

## **Examples**

- To start the **clispool** program automatically and use the N: drive, add the following line to your AUTOEXEC.BAT file:  

```
clispool /i /s:N
```
- A shared printer is attached to your workstation and you want to use it locally. To do this you disable **clispool** by typing:

```
clispool /d
```

With **clispool** disabled, you can use your printer locally. Network print jobs will be submitted to the printer's queue but will only be printed while **clispool** is enabled.

- When you are done using the printer locally and want it to be used over the network, you enable **clispool** by typing:

```
clispool /e
```

Network print jobs will now be printed.

- The shared printer attached to your workstation accepts print jobs from all the servers on your local area network. For example, one of your coworkers needs to print out several files as soon as possible. Your coworker will be sending these print requests from the server PRINT1.SERVE. To make sure that his files are printed in a timely manner, you allow the shared printer to accept requests from the PRINT1.SERVE server only by typing:

```
clispool \\print1.serve
```

- Once the files have printed, you once again allow the shared printer to accept print requests from all of the servers on the local area network by typing:

```
clispool any
```

### See Also

For information about	See
Using clispool	Chapter 6, "Using LAN Manager Basic"
Other print spoolers	Clipcach; Printsta

## Kermit

### Purpose

The **kermit** command enables an MS-DOS workstation to emulate a terminal in order to log on to a UNIX system host computer, upload and download files with a host that is also running Kermit, or exchange files with another workstation running the Kermit terminal emulator. This command is only available when you have a LAN Manager for UNIX Systems server on your network.

### Syntax

**kermit** [*command*, ... ]

where

*command*

Is any valid Kermit command.

### Comments

To access the **kermit** command, first link to the appropriate shared directory. This command is stored in the DOSUTIL shared directory on a LAN Manager for UNIX Systems server. To perform this command, you must first link to this shared directory as in the following example:

```
net use d: \\server1.serve\dosutil
```

The **kermit** command is a full-featured terminal emulator and file transfer utility.

For more information on Kermit, see Appendix C, “Connecting to a LAN Manager for UNIX Systems Server.” For a complete description of all the options and features, see your Kermit documentation.

The functions provided by Kermit allow you to:

- Create and use Kermit command scripts to automatically log on and transfer files.
- Redefine the keyboard so that any key can send any character or string while you

communicate with a host computer.

- Define Kermit command macros.
- Start Kermit and execute Kermit commands from a batch file.
- Transfer files between two workstations running Kermit, and execute certain MS-DOS commands remotely between the workstations.
- Use Kermit over the local area network or over a serial port.
- Change the type of terminal Kermit emulates and set terminal attributes.
- Use your printer from Kermit.
- Customize the colors in the Kermit screen.

Source code for Kermit on many different computers and operating systems is available from Columbia University, which holds the copyright to the file transfer protocol and to many Kermit implementations.

## Load

### Purpose

The **load** utility loads the specified protocol on workstations using Demand Protocol Architecture (DPA).

### Syntax

**load** *protocol* [/i]

where

*protocol*

Is the name of the protocol to be loaded. Information regarding protocols is placed in the PROTOCOL.INI file and in LANMAN.DOS\DRIVERS\PROTOCOL by the installation program. You should not edit these files yourself.

/i

Displays a list of loaded protocols and the order in which they were bound.

### Comments

By default, the network (and protocol) is specified in the AUTOEXEC.BAT file. The **load** utility allows you to load protocols as you need them.

Do not use the **load** utility while running the Microsoft Windows operating system. Either load the protocol before running the Windows operating system, or stop the Windows operating system, load the protocol, and then restart the Windows operating system.

You may need to load a secondary protocol to access certain network resources. If you were using such a resource when you logged out, and the required protocol is not automatically loaded when you log on again, and you are using the persistent connections feature, you will receive a message that the resource is unavailable. You will be able to reconnect to the resource after you load the required protocol.



---

**NOTE:**

In order to use the Demand Protocol Architecture (DPA) to load protocols, the line **dynamic = yes** must be included in the **[protman]** section of the PROTOCOL.INI file.

Also, in the CONFIG.SYS file, the line specifying the protocols to be used must come before the line that begins **device =** and contains **\protman.dos**.

---

**See Also**

For information about	See
Unloading a protocol	Unload
Demand Protocol Architecture (DPA)	<i>Installation Guide for Clients</i>

## Net Continue

### Purpose

The **net continue** command reactivates network connections suspended with the **net pause** command.

### Syntax

**net continue { drdr | prdr }**

where

#### **drdr**

Continues a workstation's connections to all shared directories.

#### **prdr**

Continues a workstation's connections to all shared printer queues.

### Comments

You can abbreviate the **net continue** command as **net cont**.

When you continue network connections using **net continue**, your workstation ignores its local connections to corresponding printers and drives when a network connection is assigned to the same port.

### See Also

For information about	See
Pausing and continuing network connections	Chapter 6, "Using LAN Manager Basic"
Suspending connections to shared resources	Net Pause
Connecting to shared resources	Net Use

## Net Help

### Purpose

The **net help** command provides Help with a specific command and lists commands for which Help is available.

### Syntax

**net help** [*command*]

**net** [*command*] **help**

where

*command*

Is the command you need help with. Supported command names are **net continue**, **net name**, **net pause**, **net print**, **net start**, and **net use**. You can just type the action name, leaving off **net**. For example, for Help with the **net print** command, type **net help print**.

To display information about how to get Help, type **net help**.

### Comments

For Help with a specific command, type **net**, the command name, and **help**, or type **net help** followed by the command name. (Do not repeat the word **net** as part of the command name.)

### Examples

- To view a list of LAN Manager Basic commands that you can get Help with, type:

```
net help
```

- To get information about the net use command, type:

```
net help use
```

- Or -

```
net use help
```

Basic Reference  
**Using UNIX System Commands**

**See Also**

For information about	See
Getting Help	Chapter 6, "Using LAN Manager Basic"

## Net Name

### Purpose

The **net name** command displays the computername assigned to a workstation and assigns a computername to a workstation.

### Syntax

**net name** [\\*computername*]

where

*computername*

Is the name assigned to a workstation or the name you want to assign to a workstation.

To display a workstation's computername, type **net name**.

### Comments

The computername identifies a workstation on the network and is a key for performing network tasks. When you connect your workstation to a shared resource, the server sharing the resource checks the computername to verify that you are allowed access. For this reason, a computername must be unique on the network.

If you need to access shared resources that require a password, your computername must be the same as your username.

You assign a computername when you start your workstation with the **net start workstation** command unless you try to assign a name that is already in use. In this case, the workstation starts without an assigned computername. If this occurs, use **net name** to assign a valid computername.

If no computername displays when you type **net name** without options, the workstation started without a valid computername.

### See Also

For information about	See
Computernames	Chapter 6, "Using LAN Manager Basic"
Setting computernames	Net Start Workstation

## Net Pause

### Purpose

The **net pause** command pauses connections to shared resources.

### Syntax

**net pause {drdr | prdr}**

where

#### **drdr**

Pauses a workstation's connections to all shared directories.

#### **prdr**

Pauses a workstation's connections to all shared printer queues.

### Comments

Pausing a connection allows you to temporarily use a devicename for a device at your workstation that is already assigned to a shared resource.

For example, you can connect the LPT1 devicename to a shared printer queue. If LPT1 is also assigned to a printer attached to your workstation, you can pause the network connection and print a file at your workstation's printer. To send print jobs again to the shared printer queue with the devicename LPT1, reactivate the connection with the **net continue** command.

### See Also

For information about	See
Pausing and continuing network connections	Chapter 6, "Using LAN Manager Basic"
Continuing connections to shared resources	Net Continue
Connecting to shared resources	Net Use

## Net Print

### Purpose

The **net print** command displays the contents of shared printer queues and prints a file.

### Syntax

**net print** {\\*computername*[*sharename*] | *devicename*}

**net print** [*filename*] *devicename*

where

*computername*

Is the name of the server sharing the printer queue(s) with contents you want to display.

*sharename*

Is the name of a printer queue with contents you want to display.

*devicename*

Is the name of the device at your workstation you assign to the printer queue with contents you want to display. LPT1 through LPT3 are the devicenames available for printer queues.

*filename*

Is the name of a file you want to print.

### Comments

Specifying the *computername* of a server with the **net print** command displays the contents of its printer queues. You don't need to be connected to a server to view the contents of its printer queues.

Specifying the *devicename* you assigned to a printer queue with the **net print** command displays the contents of that printer queue, allowing you to check the status of a print job you sent.

Specifying either a computername or a devicename produces a display similar to the following:

Pos	ID	Size	Date	Time	Name	Status
001	268	115074	07-15-92	16:20	DANC	Printing
002	269	65174	07-15-92	16:22	JOHNSW	Waiting

This display shows the position, identification number, size (in bytes), date, time, owner, and status of each print job in the printer queue.

The Name column lists the owner of each print job. When a job was sent from a LAN Manager Basic workstation, this column shows the computername. When a job was sent from a LAN Manager Enhanced or an OS/2 workstation, this column shows the username.

### Examples

- To examine the contents of printer queues on the \\FINANCE server, type:  
**net print \\finance**
- To send the REPORTS.DOC file to the printer queue connected to your workstation's LPT1 devicename, type:  
**net print reports.doc lpt1:**
- To check the status of a print job that you sent to the printer queue connected to LPT1, type:  
**net print lpt1:**

### See Also

For information about	See
Printing over the network	Chapter 6, "Using LAN Manager Basic"
Connecting to shared printer queues	Net Use



## Net Start Workstation

### Purpose

The **net start workstation** command starts a workstation and sets its computername.

### Syntax

**net start workstation** *computername*

where

*computername*

Is the name assigned to a workstation.

### Comments

You can abbreviate **workstation** as **wksta**, **redirector**, or **rdr**.

When you type **net start workstation** *computername*, LAN Manager Basic software loads into your workstation's memory and the workstation starts.

You will rarely, if ever, use this command. Usually, your administrator will set up your workstation so that the **net start workstation** command is in your AUTOEXEC.BAT file and LAN Manager Basic starts automatically.

### See Also

For information about	See
Computernames	Chapter 6, "Using LAN Manager Basic"
Checking the computername	Net Name

## Net Use

### Purpose

The **net use** command connects a workstation to or disconnects a workstation from a shared resource, or displays information about workstation connections. It also controls the persistent net connections feature.

### Syntax

```
net use [devicename] [\\computername\sharename [password | *]
```

```
net use {devicename | \\computername\sharename} /delete
```

```
net use [devicename] [\\computername\sharename [password | *]
```

```
net use /p[ersistent]:{yes | no | freeze | save}
```

where

*devicename*

Assigns a name to a device connected to a shared resource or specifies the disconnecting *devicename*. LAN Manager Enhanced uses two kinds of *devicenames*, one type for disk drives (all nonlocal drive letters through the value of LAST DRIVE as defined in the CONFIG.SYS file) and the other type for printers (LPT1 through LPT3).

*computername*

Is the name of a server sharing a resource. If the *computername* contains blank characters, enclose the double backslash (\\) and the *computername* in quotation marks (" ").

*sharename*

Is the name of a resource.

*password*

Is the password needed to use a resource. To be prompted for the password, type an asterisk (\*) instead of the password. A password does not appear when you type it at a password prompt.

**/delete**

Cancels a network connection.

### **/p[ersistent]**

Controls the use of persistent network connections. This switch is used alone; it cannot be combined with any other switch, nor can it be used while adding or removing a connection. The default is **yes**.

#### **yes**

Saves all connections as they are made and restores them at next logon.

#### **no**

Neither saves nor restores connections at the next logon.

#### **freeze**

Stops saving connections but does not overwrite the existing list of connections.

#### **save**

Saves your current connections, over writing any previously saved connections. These settings will be restored each time you log on. Connections made after using the **net use /o: save** command are neither save nor restored.

To list a workstation's connections, type **net use** without options.

### **Comments**

By connecting a workstation to a shared resource, you can use the resource as if it were attached to the workstation.

For example, **net use** can connect your workstation to a shared printer queue that uses a high-quality printer. When you use a program such as Microsoft Excel spreadsheet, you can print files on that printer by directing print jobs to the devicename for the queue that uses the printer.

You can use a shared resource without making a connection with **net use**. The connection is made automatically by MS-DOS and some network programs when you specify the network path of the resource with a command. If the resource is protected by a password, you must establish access with **net use**. You don't have to assign a devicename to establish access. Just type **net use**, the network path of the resource, and the password.

You can use a shared directory without assigning a devicename to the connection. You do this at the MS-DOS prompt by using the network path with some commands and applications.

For example, to use Microsoft Word to edit the LIST.DOC file in the shared directory with the network path \\SALES\FARWEST, type:

```
word \\sales\farwest\list.doc
```

Microsoft Word loads the shared file even though you haven't made a previous connection to \\SALES\FARWEST. Note that this procedure doesn't work when you need a password to gain access to \\SALES\FARWEST. In this case, you must first establish access to the directory.

You cannot delete a connection to a shared directory if you use that directory as your current drive. You must change to another drive before you delete the connection.

---

**NOTE:**

---

You can only make connections to sharenames of up to eight characters, optionally followed by an extension consisting of a period (.) and one to three characters. LAN Manager sends an error message if you try to connect to a longer sharename.

### Viewing Your Workstation's Connections

When you type **net use** without options, you get information about your workstation's connections in a display similar to the following:

Status	Local name	Remote name
OK	M:	\\FINANCE\SCRATCH
DISCONNECTED	G:	\\PRODUCT\C
ERROR	LPT1:	\\PRINT1\LASER

The status of a connection can be:

OK	Active
Disconnected	Suspended by the server but will re-establish when you use it
Paused	Paused by the workstation
Error	Ended and must be deleted

Local name is the devicename assigned to the resource. Remote name is its network path.

There are two ways to get information about a connection:

- Type **net use devicename**.
- Type **net use** and the network path of the resource. You must type this command twice: first to establish a connection to the resource, and then to get information about it.

Either method produces a display similar to the following:

```
Local name          LPT1:
Remote name         \\PRINT1\LASER
Resource type       Print
Status              OK
#Opens              0
#Connections        1
```

#### Resource type

Is the type of resource you are using (disk or printer).

#### #Opens

Is the number of files currently open in this connection.

#### #Connections

Is the number of connections the workstation has to the resource.

### Examples

- To assign the devicename E: to the LETTERS directory on the \\FINANCE server, type:  
**net use e: \\finance\letters**
- To assign the devicename LPT1 to the LASER2 printer queue on the \\ACCOUNT server, type:  
**net use lpt1: \\account\laser2**
- To cancel your connection to the \\ACCOUNT\LASER2 printer queue connected to LPT1, type:  
**net use lpt1: /delete**

- To establish access to the \\FINANCE server's SCRATCH shared directory, which requires the password meteor, type:

```
net use \\finance\scratch meteor
```

- To cancel your connection to the \\FINANCE\SCRATCH shared directory, type:

```
net use \\finance\scratch /delete
```

- To connect to a resource shared on the FINANCE 2 server, type:

```
net use k: "\\finance 2"\memos
```

You must use quotation marks with a servername that has a space. If you omit the quotation marks, LAN Manager will not accept a servername that includes a space.

### See Also

For information about	See
Making connections	Chapter 6, "Using LAN Manager Basic"
Pausing and continuing connections	Net Pause, Net Continue
Viewing connections	Net View

## Netrun

### Purpose

The **netrun** command runs a program or command on a LAN Manager OS/2 or UNIX system server.

---

**NOTE:**

---

**Netrun** does not work on Windows NT Advanced Servers or workstations. You cannot use the **netrun** command to run interactive programs such as word processors or spreadsheets.

### Syntax

**netrun** *command*

where

*command*

Is the name of a program you want to run. The program file must have a .EXE extension. You don't need to supply the filename extension when you type the command.

### Comments

The **netrun** command lets you use another computer's processing power to run a program. You may need the help of your administrator to use this command.

To run a program on a server

- 1 Get the filename of the program you want to run and the computername of the server you want to use.
- 2 Connect to a shared directory on the server with the **net use** command.
- 3 Change your current directory to the shared directory. This directory need not contain the program you want to run; the administrator defines which programs you can run.
- 4 Type **netrun** followed by the filename of the program and any options or variables the program requires.

If the program you are running has options or variables that include filenames, specify the full path for each file. If a drive letter is included in the path, LAN Manager assumes that the drive is one of the server's drives.

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Most programs produce some kind of output or data. When you use **netrun**, this output is sent to your screen. To send the output to a file, specify a *>path* to receive the output in the **netrun** command line. By default, LAN Manager creates this file in the current directory. If you specify a drive letter, **netrun** assumes the drive is one of the workstation's drives.

Because the Netrun service runs as a daemon process on the UNIX system server without a controlling terminal, and because any command executed by **netrun** inherits this state, those programs that issue input prompts when they detect that they are being run from the command line will not issue prompts.

Commands that can be run with the **netrun** command are controlled by the Netrun service on the computer that has the executable file. For example, the shell detects whether there is a controlling terminal and issues the PS1 prompt while waiting for command input. It does not do this when input is not coming from a terminal (for example, when it is running a shell script from a file). When run from **netrun**, the shell will not issue any prompts. A sample session follows:

```
D:> netrun sh
date
Wed Sep  2 17:20:26 PDT 1992
who
root          console          Aug 24 12:31
exit
D:>
```

When using the **netrun** program on an MS-DOS client, the keyboard input is buffered, and lines are sent only when the buffer fills or a return is entered. This may require entering a return after some special characters to get them sent across. For example, when entering expressions to the UNIX system **bc** program, you might type the following:

```
D:> netrun bc
3+4
7
```

If you then intend to exit **bc** by typing CTRL+D (which would normally terminate **bc** immediately), you need to follow the CTRL+D with a carriage return to send the CTRL+D to the server.



### Example

- Suppose you want to run a file-comparison program called DIFF.EXE on the \\ADMIN server with the LISTS shared directory. The two files you want to compare are MAILLIST.TXT and ADDRESS.LST, and the file you want to receive the output is NEWLIST.TXT on your drive C.

To accomplish this comparison, assign a devicename (such as D:) to the LISTS directory on the \\ADMIN server. Change to that drive, and start the program using the **netrun** command. To do this, type the following:

```
net use d: \\admin\lists
d:
netrun diff maillist.txt address.lst >c:\newlist.txt
```

### See Also

For information about	See
Connecting to a shared directory	Net Use
Viewing a list of shared directories on a server	Net View
Other UNIX system commands	Uchmod, Ud, Udir, Uren

## Nwload

### Purpose

The **nwload** utility starts NetWare Connectivity.

### Syntax

**nwload** [*username*]

where

*username*

Is your NetWare username.

### Comments

NetWare Connectivity allows you to use Novell NetWare servers. You will be prompted for your NetWare username, unless you include it on the command line.

You cannot use this utility while the Microsoft Windows operating system is running. Use this utility before you start the Windows operating system; or stop the Windows operating system, use the **nwload** utility, and then restart the Windows operating system.

### See Also

For information about	See
Unloading NetWare Connectivity	Nwunload
NetWare Connectivity	Appendix B, "Using NetWare Connectivity," and the <i>NetWare Connectivity Guide</i>

## **Nwunload**

### **Purpose**

The **nwunload** utility unloads NetWare Connectivity.

### **Syntax**

**nwunload**

### **Comments**

NetWare Connectivity allows you to use NetWare servers. After you unload NetWare Connectivity with the **nwunload** utility, you can start NetWare again with the **nwload** utility.

You cannot use this utility while the Microsoft Windows operating system is running. Use this utility before you start the Windows operating system; or stop the Windows operating system, use the **nwunload** utility, and then restart the Windows operating system.

### **See Also**

For information about	See
Loading NetWare Connectivity	Nwload
NetWare Connectivity	Appendix B, "Using NetWare Connectivity," and the <i>NetWare Connectivity Guide</i>

## Ping

### Purpose

The **ping** utility lets you verify a physical connection to a remote computer.

### Syntax

```
ping remote_computer [-t [timeout_value]] [-n [num_times]]
```

where

#### **remote\_computer**

Is the computername or IP address of a remote computer.

#### **-t** [*timeout\_value*]

Is the number of seconds (*timeout\_value*) that this node waits for an ICMP echo reply from a remote computer. The *timeout\_value* range is from 1 through 300 seconds; the default is 20.

#### **-n** [*num\_times*]

Is the number of times **ping** sends an echo request to the remote computer. If you don't specify a number, **ping** uses the default of one echo request.

---

**NOTE:**

---

There is a 1-second delay between each echo request.

### Comments

The **ping** utility is a Microsoft TCP/IP utility that can be used to isolate network hardware problems and incompatible configurations for StarLAN 10 networks, token-ring networks, and ThinLAN networks.

## Printsta

### Purpose

The **printsta** command accepts print jobs from other workstations and prints them on a shared printer.

### Syntax

**printsta** *options*  
**printsta** /**D**

where *options* are:

**/N:name**

Allows you to grant one remote workstation exclusive access to the LAN Manager Print Station printer. If you use this switch, the only remote user who can send print jobs to your printer is the one at the computer with computername name. (Of course, you will still be able to send print jobs to your own printer, too.)

**/L:n**

Tells LAN Manager Print Station which printer port to use. For example, **/L:1** would instruct LAN Manger Print Station to use printer connected to LPT1.

The range is 1 to 3; the default is 1.

**/V:n**

Redirects printer output from the workstation that is sharing a printer from the port that has the shared printer to the specified logical port, which may be in turn redirected to a queue on a server. You may specify 1 for LPT1, 2 for LPT2, or 3 for LPT3.

**/Q**

Acts as a toggle to pause and release the queue.

**/M:n**

Specifies the amount of cache memory reserved for each permitted spool file.

When LAN Manager Print Station is loaded, it allocates a memory block (a buffer) for caching the spool file data for each spool file that it may receive over the network. You set the number of spool files that may be created at one time with the **/F** option. For example, if you set **/F:10** and **/M:200**, when

LAN Manager Print Station loads, it will allocate 2000 bytes for the buffers that receive data that go into the spool files. In this case, when a print job arrives, LAN Manager Print Station will collect data until it has received 200 bytes; then it will write that data into the spool file, empty the buffer, and receive the next 200 bytes of data from that print job. At any one time, it may be doing this for each of the 10 spool files permitted.

Increasing the size of these buffers reduces the amount of network traffic needed to print a file but also increases the amount of memory the LAN Manager Print Station needs. These buffers are allocated from MS-DOS and do not reside in the same place in memory as the print spooler. The size of these buffers should be reduced if memory constraints are a problem. The range is 128 bytes to 4096 bytes; the default is 128 bytes.

***/T:n***

Sets the priority of LAN Manager Print Station on the host computer. That is, it establishes how successfully LAN Manager Print Station can compete for processing time with other programs that the user of the host computer may be running, by controlling how often it can use the computer's processing power. The highest priority is 1. Assigning a lower priority (by increasing this value) will force LAN Manager Print Station to wait longer periods of time in between doing any processing. If using LAN Manager Print Station seems to slow the use of other applications on the workstation, increase this value. If fast print spooling is more important, then assign a higher priority (decrease the value) to give LAN Manager Print Station more processing time. For example, the default value of 10 instructs LAN Manager Print Station to process approximately twice every second.

The range is 1 to 255, with 1 being the highest priority. The default is 10.

***/I:n***

Each time the **printsta** utility gains control of the computer's processing power, it will use *n* cycles for processing before it relinquishes control again. The range is 1 to 255, the default is 1.

***/O:n***

Specifies the number of characters to be printed in each pass. The range is 1 to *n* characters, where *n* is the value specified with the **/M** switch. The default is 32.

***/A:n***

Causes LAN Manager Print Station to disconnect remote clients that have not spooled to the printer in the number of minutes specified.

The range is 0 (never auto-disconnect) to 1440 minutes; the default is 1 minute.

***/R:n***

If LAN Manager is loaded in spooling mode, this option (retry) specifies the number of seconds to wait between printer status checks. If the printer is slow, this value should be increased.

If LAN Manager Print Station is loaded in nonspooling mode, this option (retry) instructs the spooler to wait for the specified number of seconds before failing the print request. Since the nonspooling mode does not maintain a queue, print jobs that run into a printer error are held until either the error clears or the retry time (*n* seconds) passes. After *n* seconds, the print job will fail. After the printer error is determined and corrected, the remote user can send the print job again. It is recommended that **/R** be set to a small value for the nonspooling mode, since the remote user's computer cannot continue any processing until it receives a response to its network print request.

The range is 1 to 255 seconds; the default is 5.

***/B:n***

Configures the maximum number of network buffers that LAN Manager Print Station allocates when it is loaded into memory. Network buffers are used to build network packets for sending data across the network. Each network buffer uses 128 bytes of memory. When there are more network buffers, more information can be sent in each packet, and spool files encounter less competition for the buffer. This can dramatically affect network performance, so low numbers of network buffers should be avoided.

The range is 1 to 20 buffers; the default is 5.

***/C:n***

Specifies the maximum number of remote sessions that can be active at once, that is, the number of **net use** connections users can establish with the host workstation to use LAN Manager Print Station. Each session takes only 24 bytes of memory.

The range is 1 to 20 sessions; the default is 5.

***/E***

Enables the host workstation to send messages from the printer to the remote user who has sent the print job.

The default is for the host workstation not to send these messages.

***/F:n***

Specifies the maximum number of spool files that can be open on the host workstation at once. There is no constraint on how many of these spool files a single remote session can have open.

Spool file structures are allocated when LAN Manager Print Station is loaded and take up 64 bytes of memory each. Since one cache block is allocated per spool file, the total memory used for each spool file is actually 64 bytes + the size of the cache block. The size of the cache block is set with the **/M** option.

If possible there should be at least one network buffer allocated for every spool file. Network buffers are set with the **/B** option.

The range for **/F** is 1 to 10 spool files; the default is 5. To load LAN Manager Print Station in nonspooling mode, set **/F:0** (spool files equal to zero).

***/K:jobid***

Deletes the print job specified by *jobid*. To obtain the *jobid* number, either view the queue through Print Manager (if you are using the Windows operating system) or use the command:

```
net print \\hostcomputername\lpt
```

The *jobid* will appear on the line for the print job you want to delete.

***/P:password***

Protects the printer share with a password. Only users who know the password will be able to connect to the workstation to use LAN Manager Print Station.

The password may be up to 15 characters long.

***/S***

Enables separator pages. One extra page, with the remote user's name, will be printed per print job.

***/W:directory***

Specifies the working directory where LAN Manager Print Station will keep its spool files. If no option is specified, the directory that was current when LAN Manager Print Station was loaded will be used. By specifying a working directory, you can prevent the user at the host workstation from being distracted or annoyed by the appearance of temporary files in a directory that is reserved for other work.



Generally, you should not delete spool files from the working directory, as doing so could disrupt a remote print job. All spool files are deleted at the end of the print job.

This option does not affect LAN Manager Print Station in the nonspooling mode.

### **/D**

Removes LAN Manager Print Station from memory. This option cannot be used with any other options.

This will free all memory reserved for caching spool files, as well as freeing the memory used for the program itself. It will cancel any jobs that have not completed and will remove the computername from the network's list of available servers. You can restart LAN Manager Print Station any time after you have successfully removed the program from memory.

In some instances, other applications may hook the interrupts that LAN Manager Print Station chained when the program was started. If this happens, the **printsta /D** command will be unable to unhook those interrupts, and will continue to use a small amount of memory to handle them. In this case, you will not be able to restart LAN Manager Print Station until you have rebooted your computer.

### **Comments**

The workstation running LAN Manager Print Station must be running MS-DOS version 3.3 or later and LAN Manager 2.1a or later.

LAN Manager Print Station uses only conventional memory. The default configuration uses just over 6K of memory. If you allow more than the default number of spooled files, network buffers, and/or remote connections, or if you increase the cache size, the memory requirements can be as much as 51.4K. If you use the minimal configuration with the spooler enabled, you can reduce the memory requirements to 5.4K. For low-memory configurations, you can disable the spooler, lowering the memory requirements to 5.0K. If disk space is not available for temporary files, it is a good idea to disable the spooler. However, if the spooler is disabled, users who send print jobs to this printer will be unable to use their workstations until their print job is done.

LAN Manager Print Station can only be reached via the first protocol on the workstation sharing the printer. Usually, this is the first protocol listed in that workstation's PROTOCOL.INI file. However, the order of protocols can be

changed with the **wrknets** keyword in the [**workstation**] section of the LANMAN.INI file. The protocol need not be the first protocol on the remote workstation that is sending the job. For example, if NetBEUI is the first protocol on the workstation sharing the printer, workstations sending jobs must use NetBEUI as one of their protocols.

The workstation sending a print job must establish a network connection to the LAN Manager Print Station host workstation. MS-DOS workstations must be running LAN Manager 2.0 or later; OS/2 workstations must be running LAN Manager 2.1a or later.

### **Loading LAN Manager Print Station on the Hoappears.st Workstation**

To allow other users to send print jobs to your printer, you must load LAN Manager Print Station as a terminate-and-stay-resident (TSR) program, using the **printsta** command. If necessary, you can also unload the program. LAN Manager Print Station must be loaded prior to the Windows operating system. If you are using the AUTOEXEC.BAT file to load Print Station and to start the Windows operating system, be sure the line to load Print Station comes before the line that starts the Windows operating system but after the line that starts the Workstation service.

To load LAN Manager Print Station

- Type **printsta [options]**, where *options* are those listed in this command reference.

To unload LAN Manager Print Station

- Type **printsta /d**.

For details, see the description of the **/D** option.

### **To Use LAN Manager Print Station from a Remote Workstation**

You can connect to a LAN Manager Print Station printer as you would to any other printer, using the computername as the servername and LPT as the sharename. For example, to connect to the printer on the workstation \\WILDWOOD, you would connect one of your logical LPT ports to \\WILDWOOD\LPT.

### Examples

- To start Print Station with spooling disabled, type:

```
printsta /f:0
```

- To start Print Station, giving remote print jobs minimal priority for processing time, type:

```
printsta /t:255
```

- To start Print Station, allowing up to five spool files and five buffers, with 500 bytes of cache memory per spool file (2.5K bytes of cache memory will be allocated), type:

```
printsta /f:5 b:5 /m:500
```

### See Also

For information about	See
Using printsta	Chapter 3, “Using Shared Printers”
Other print spoolers	Clispool, Clipcach

## **Prtsc**

### **Purpose**

The **prtsc** utility is a terminate-and-stay-resident (TSR) program used to flush the print spooler when an application has failed to send an end-of-job signal.

### **Syntax**

**prtsc**

### **Comments**

This loads the utility into memory. To flush the spooler, press CTRL+ALT+PRINT SCREEN.

The **prtsc** utility is used to explicitly flush the spooler. Most applications send a signal that is recognized by the spooler as an end-of-job signal.

## Uchmod

### Purpose

The **uchmod** command allows you to change the UNIX system access permissions of a LAN Manager for UNIX Systems file or directory. This command is only available when you have a LAN Manager for UNIX Systems server on your network.

### Syntax

**uchmod** [*who*] { { + | - | = } *permission* } *pathname*

**uchmod** *user#group#other#* *pathname*

where

*who*

Represents the UNIX system user classification for which access permissions are changed. Replace *who* with **u** (user), **g** (group), **o** (others), or **a** (all classifications). When the *who* option is not specified, all user classifications are changed.

+

Adds the specified access permissions to the specified file or directory.

-

Removes the specified access permissions from the specified file or directory.

=

Sets access permissions to the groups or access permissions specified in the *permissions* option.

*permissions*

Represents the access permissions you want to assign to or remove from the directory or file. Replace *permissions* with any or all of the following: **r** (read), **w** (write), **x** (execute), **l** (lockable), **s** (set ID for user or group), or **t** (hold text file in swap space).

*pathname*

Represents the name of the file or directory to be affected. You can use wildcard characters.

*user#*

Represents the access permission value for the owner of the file or directory. Replace *user#* with the sum of any combination of the following values: 4 (for read), 2 (for write), 1 (for execute).

*group#*

Represents the access permission value for the group. Replace *group#* with the sum of any combination of the following values: 4 (for read), 2 (for write), 1 (for execute).

*other#*

Represents the access permission value for other users. Replace *other#* with the sum of any combination of the following values: 4 (for read), 2 (for write), 1 (for execute).

### Comments

To access the **uchmod** command, first link to the DOSUTIL shared directory on LAN Manager for UNIX Systems servers. For example, type:

```
net use d: \\server1.serve\dosutil
```

### Examples

- You want to change the group (**g**) and other (**o**) access permissions of the file *example* to read-only. The UNIX system access permissions, for *example*, are currently read, write, and execute for user, group, and other (rwxrwxrwx). Type:

```
uchmod go-wx example
```

This changes the access permissions to rwxr--r--.

- You want to change the user (**u**) access permissions of the file *two* to read and execute. The UNIX system access permissions for *two* are currently read-only for user, group, and other (--x--x--x). Type:

```
uchmod u+r two
```

This changes the access permissions to r-x--x--x.

- You want to change the other (**o**) access permissions of the file *list* to execute only. The UNIX system access permissions for *list* are currently read-only for user, group, and other (r--r--r--). Type:

```
uchmod o=x list
```

This changes the access permissions to r-r---x.

- You want to change the access permissions of all user classifications for the file *milton* to read-only, using numbers instead of letters. The UNIX system access permissions for *milton* are currently 644 (rw-r--r--). Type:

```
uchmod 444 milton
```

This changes the access permissions to r--r--r--.

### See Also

For information about	See
Using the uchmod command	Appendix C, “Connecting to a LAN Manager for UNIX Systems Server”
Other UNIX system commands	Ud, Udir, Uren
Executing UNIX system commands	Netrun

## Ud

### Purpose

The **ud** command converts a UNIX system text file to MS-DOS format, or an MS-DOS file to UNIX system format. This command is only available when you have a LAN Manager for UNIX Systems server on your network.

### Syntax

```
ud [{-d | -u } -z ] file1 [file2]
```

where

#### **-d**

Converts the file to MS-DOS format. If the file is already in MS-DOS format, it is copied to the second file.

#### **-u**

Converts the file to UNIX system format. If the file is already in UNIX system format, it is copied to the second file.

#### **-z**

Prevents ^Z from being appended to the end of a file converted from UNIX system format to MS-DOS format, or ignores ^Z characters in a file being converted from MS-DOS format to UNIX system format.

#### *file1*

Represents the name of the file you want to convert. This file remains unchanged after the command is executed.

#### *file2*

Represents the name you want to assign to the converted version of the file.

### Comments

To access the **ud** command, first link to the DOSUTIL shared directory on a LAN Manager for UNIX Systems server. For example, type:

```
net use d: \\server1.serve\dosutil
```



When entered without the **-d** or **-u** parameter, **ud** converts a MS-DOS file to UNIX system format or a UNIX system file to MS-DOS format. If you do not redirect the output to a second file, the file is converted, and its text is displayed on your screen. You can also use a pipe ( | ) to send a reformatted file to a program.

### Examples

- To convert a UNIX system file named *text.unx* to MS-DOS format, and place the output in a file named *text.dos*, type:

```
ud -d text.unx text.dos
```

- To convert a UNIX system file named *unixtext* to OS/2 format, then sort the file and place the output in a file named *text.srt*, type:

```
ud -d unixtext | sort > text.srt
```

### See Also

For information about	See
Using the ud command	Appendix C, “Connecting to a LAN Manager for UNIX Systems Server”
Other UNIX system commands	Uchmod, Udir, Uren
Executing UNIX system commands	Netrun

## Udir

### Purpose

The **udir** command lists files and directories, including those not displayed by the MS-DOS **dir** command, and displays the UNIX system access permissions. This command is only available when you have a LAN Manager for UNIX Systems server on your network.

### Syntax

**udir** [ **-n** | **-t** | **-u** | **-r** | **-d** ] [*pathname*]

where

#### **-n**

Lists file and directory names only.

#### **-t**

Lists the newest files first.

#### **-u**

Lists files on the server that are not available to the MS-DOS or OS/2 system.

#### **-r**

Displays the files in reverse alphabetical or chronological order.

#### **-d**

Displays the directory parameter only.

*pathname*

Represents the name of the directory and file to be listed. You can use a wildcard character with the filename.

### Comments

To access the **udir** command, first link to the DOSUTIL shared directory on a LAN Manager for UNIX Systems server. For example, type:

```
net use d: \\server1.serve\dosutil
```

If a UNIX system filename contains characters that are invalid in MS-DOS or is longer than the MS-DOS limit, you can use **udir** to list the file. If the specified resource is on a server running the UNIX operating system, **udir** displays information in a format like that displayed by the UNIX system **ls -l** command. If the specified resource is on a computer running the MS-DOS or OS/2 operating system, **udir** displays information in a format like that displayed by the MS-DOS **dir** command.

---

**NOTE:** Filenaming conventions are based on the MS-DOS filenaming conventions (FAT).

---

### Examples

- You want to list the contents of the current directory on your local drive C. Type:

**udir**

The following appears:

```
C:\udir
Volume in drive C: is DOS401
Directory of C:\.
autoexec.bat      rw--a          145          6-08-92      10:05a
config.sys        rw--a          344          6-08-92      9:30a
landoc            rw--a          <DIR>         8-10-92      7:30a
dos3_2            rw---          <DIR>         6-10-92      11:08a
ibmdos.com        r-hsa          28009         9-12-92      3:45p
report1.dft       rw--a          8128          8-02-92      5:30p
report2.dft       rw--a          9012          8-16-92      9:30a
res.scr           rw--a          2045          8-08-92      8:30p
tmp               rw--a          23606         11-01-92
                9 Files                26.78 Megabytes free
```

- You want to list the contents of the shared directory linked to drive ID F. Type:

**udir f:**

The following appears:

```
C: udir f:
Status: RO
Volume in drive F: is CARPET_SERV
Directory of f:/*
UNIX-based server 'CARPET.SERVE' in share area 'VACUUM'
DOS Name          Owner      Group      Modes
UNIX Name
.                  <DIR> 10-28-92  4:45p lanman  DOS----  rwxrwxr-x .
. .               <DIR> 10-22-92  8:51a root    root    rwxrwxrwx ..
                  65 10-28-92  4:39p root    other   rw-r--r-- name_too_long
NET.DIR           <DIR> 10-24-92  9:13a glenn  DOS----  rwxrwxr-x net.dir
OK_FOR.DOS        232 10-28-92  1:51p glenn  DOS-a--  rw-rwlr-- ok_for.dos
ROOTFILE          642950 10-25-92  2:19p root    other   rw-r--r-- rootfile
                6 Files                150.72 Megabytes free
```

Basic Reference  
Using UNIX System Commands

**See Also**

For information about	See
Using the udir command	Appendix C, “Connecting to a LAN Manager for UNIX Systems Server”
Other UNIX system commands	Uchmod, Ud, Uren
Executing UNIX system commands	Netrun

## Unload

### Purpose

The **unload** utility unloads a specified protocol from a workstation with Demand Protocol Architecture (DPA).

### Syntax

**unload** *protocol*

where

*protocol*

Is the name of the last protocol loaded. Information regarding protocols is placed in the PROTOCOL.INI file and in LANMAN.DOS\DRIVERS\PROTOCOL directory by the Setup program. You should not edit these files.

### Comments

Protocols must be unloaded in the reverse of the order in which they were loaded (last in is first out). To get information on what protocols are loaded, and in what order, type:

**load /i**

Do not use the **unload** utility while running the Microsoft Windows operating system. Either unload the protocol before running the Windows operating system, or stop the Windows operating system, unload the protocol, and then restart the Windows operating system.

### See Also

For information about	See
Loading a protocol	Load

## Uren

### Purpose

The **uren** command renames or moves files on a LAN Manager for UNIX Systems server running the UNIX operating system. This command is only available when you have a LAN Manager for UNIX Systems server on your network.

### Syntax

**uren** *oldfilename newfilename*

**uren** *filename1 [filename2... ] directoryname*

where

*oldfilename*

Is the original filename.

*newfilename*

Is the new filename.

*filename1*

Is the name of the file you want to move.

*filename2...*

Is any additional files that you want to move.

*directoryname*

Is the name of the destination directory.

### Comments

To access the **uren** command, first link to the DOSUTIL shared directory on a LAN Manager for UNIX Systems server. For example, type:

```
net use d: \\server1.serve\dosutil
```

You cannot use the **uren** command to move a file from one drive to another. In addition, you cannot use the wildcard character \* with the **uren** command.

### Examples

- You want to rename TOOBIGFORDOS to OKFORDOS. Type  
`uren toobigfordos okfordos`
- You want to move files ABC and DEF to the DIR1 directory. Type  
`uren abc def dir1`

### See Also

For information about	See
Using the uren command	Appendix C, “Connecting to a LAN Manager for UNIX Systems Server”
Other UNIX system commands	Uchmod, Ud, Udir
Executing UNIX system commands	Netrun

Basic Reference  
Using UNIX System Commands



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**A**

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## **Country Codes**

A country code in a user account defines the language the system uses to send messages (such as print notifications and alerts) from a server to a user's workstation. The country code does not affect the language of error and explanation messages that the workstation itself generates.

## Country Codes

The following table lists available country codes. The default value for a country code is 0. When the default value is specified, messages are sent in the language used in the LANMAN.DOS\NETPROG\NET.MSG file.

<b>Country</b>	<b>Code</b>	<b>Country</b>	<b>Code</b>
Asia	099	Latin America	003
Australia	061	The Netherlands	031
Belgium	032	Norway	047
Canada	002	Portugal	351
Denmark	045	Spain	034
Finland	358	Sweden	046
France	033	Switzerland	041
Germany	049	United Kingdom	044
Italy	039	United States	001
Japan	081		

The language you select will appear only if the appropriate international version of LAN Manager is loaded on your server. International versions of LAN Manager may be purchased separately.

---

**B**

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**Using NetWare Connectivity**

## Using NetWare Connectivity

With NetWare Connectivity, your workstation can run both LAN Manager and Novell NetWare; your computer can function as a workstation on a LAN Manager or Windows NT network and a NetWare network at the same time. You can easily access directories, files, and printers on all three types of servers.

This appendix explains actions and situations specific to running LAN Manager, Windows NT, and NetWare Connectivity. It does not explain a NetWare network. For more information about using NetWare, see your NetWare manual(s). For information on maintaining connectivity, see the *NetWare Connectivity Guide*.

## How NetWare Connectivity Works

If your workstation has NetWare Connectivity, your company's network has some NetWare servers as well as LAN Manager servers or Windows NT computers. Because your workstation has NetWare Connectivity, you can use directories, files, and printers on all these resources.

For example, the database files you work with may be on a LAN Manager server, and the printer you use may be on a NetWare server. Or you may run one application from a NetWare server, while you run other applications using files on a Windows NT Advanced Server.

Your network administrator will tell you exactly which directories, files, and printers are on Windows NT computers, LAN Manager servers, or NetWare servers.

## Starting and Stopping LAN Manager and NetWare

Your administrator has probably set up your computer in the following way:

- LAN Manager starts automatically when the computer is turned on, and you don't ever need to stop it.
- NetWare does not start automatically. When you need to use NetWare, you start it by typing **nwload**. When you are done, you stop it by typing **nwunload**. (Be sure that Microsoft Windows is not running.)

Your network administrator might have set up your computer differently. Contact your administrator to find out exactly how you are to start and stop LAN Manager and NetWare. If you need to start and stop LAN Manager and NetWare yourself, use the following commands.

---

**NOTE:**

Do not use **nwload** or **nwunload** while the Microsoft Windows operating system is running. If you use the Windows operating system, you must start NetWare before starting the Windows operating system and stop the Windows operating system before stopping NetWare.

---

To start LAN Manager

- Type **net start workstation**.

To stop LAN Manager

- Type **net stop workstation**.

To start NetWare

- Type **nwload [username]**, where *username* is your NetWare username.

The following example shows how you can specify your NetWare username with the **nwload** command:

```
nwload terryn
```

This username will be used to log you on to a NetWare server. If you don't specify your username when you type **nwload**, you will be prompted for it.

To stop NetWare

- Type **nwunload**.

## Working with NetWare Connectivity

When both LAN Manager and NetWare are running, you can use both LAN Manager and NetWare commands and utilities, and you can make connections to directories and printers on Windows NT computers, and LAN Manager and NetWare servers.

If you use Microsoft Windows version 3.0 or later, you can use the Windows network capabilities to make using the network easier. You can use the Windows File Manager, Print Manager, and other network-oriented dialog boxes with both LAN Manager and NetWare.

If you use command-line commands, you can alternate between LAN Manager commands and NetWare commands, if you want.

## Using Microsoft Windows with NetWare Connectivity

When you use the Windows operating system to access the network, you can connect to Windows NT computers, LAN Manager servers, and NetWare servers with ease. You can use File Manager to display your connections to directories on all three types of servers, and also to make new connections. Similarly, you can use Print Manager and Printers from the Control Panel to view your connections to printers on all three types of servers and to make new connections. For more information about using the Windows operating system with your network, see your Microsoft Windows manual(s) and the *User's Guide for Microsoft Windows Clients*.

When using the Windows operating system to perform certain actions, you may see a dialog box that asks you which network you want to use. When you see this dialog box, simply specify the network on which you want to perform the action.

This dialog box appears only when you browse the network using either the File Manager or Printers from the Control Panel, and when you choose Network from the Control Panel. For all other network-related activities with the Windows operating system, you won't need to specify which network you are using; NetWare Connectivity determines it automatically.

## Enabling NetWare Broadcast Messaging

With NetWare Connectivity and the Microsoft Windows operating system, you may need to manually enable messaging if you want to receive NetWare broadcast messages while using the Windows operating system.

To enable broadcast messaging

- 1 Open the Windows Control Panel. Several icons appear.
- 2 Choose the Network icon.
- 3 In the resulting dialog box, choose NetWare.
- 4 In the NetWare Utilities dialog box, press the down arrow key until Enable Broadcast Messages appears in the list box, and then choose the OK button.

Messages are now enabled.

## Using NetWare Connectivity from the Command Line

If you don't use the Windows operating system, or if you type network commands from an MS-DOS box in the Windows operating system, you can use both LAN Manager and NetWare commands. You use LAN Manager commands when you work with directories and printers on Windows NT computers and LAN Manager servers, and NetWare commands when you work with directories and printers on NetWare servers.

When you use NetWare Connectivity with typed commands, you must be aware of the situations described in the following sections, "Connecting to Network Directories," and "Connecting to Network Printer Queues." The information in these sections also applies when you use the LAN Manager screen (started with the **net** command) or NetWare menu utilities such as **syscon** and **filer**.

If you are experienced with either LAN Manager or NetWare but are using the other network for the first time, you may find it helpful to learn the commands of the new network by referring to the table of commands in "Using NetWare, Windows NT Advanced Server, and LAN Manager Commands," later in this appendix. You can also find information about equivalent NetWare and LAN Manager commands by typing **net help netware**. You will see a list of common NetWare commands and their LAN Manager equivalents.



### Connecting to Network Directories

Because LAN Manager, Windows NT, and NetWare share the drive letters that can be assigned to network directories, be careful when you assign drive letters to network directories.

It is a good idea to use only drive letters from D to P for Windows NT and LAN Manager directories, and drive letters from Q to Z for NetWare directories.

---

**NOTE:**

---

Usually, the last drive letter you should assign to LAN Manager or Windows NT directories is P, but your network administrator may have set up your workstation differently. Your administrator can tell you which letters to assign to which networks.

If you try to assign a wrong drive letter to a network directory, you will see an error message. If you use the LAN Manager **net use** command to try to assign a drive letter that is too close to Z as a Windows NT or LAN Manager directory, you will see this message:

```
DOS Error 15 has occurred.  
SYS0015: The system cannot find the drive specified.
```

If you use the NetWare **map** command to try to assign a drive letter too close to A as a NetWare directory, you will see this message:

```
Drive X is in use by a local drive.Do you want to assign it as  
network drive? (Y/N) Y
```

If you see this message, press **n**. Pressing **n** prevents you from assigning a single drive to two directories simultaneously.

If you do assign a single drive letter to both a Windows NT or LAN Manager directory and a NetWare directory, you will be unable to access the Windows NT or LAN Manager directory. When you use that drive letter in a command, it will always refer to the NetWare directory.

If you find that you have a drive letter assigned to a Windows NT or LAN Manager directory and to a NetWare directory, cancel the connection to one of the directories. You can then reconnect to that directory using a different drive letter.

For example, suppose you have the G drive assigned to both a LAN Manager directory and a NetWare directory (the PUBLIC directory on the NETWARE1 server). You can delete the connection to the NetWare directory by typing:

**map del g:**

You can then reconnect using a different drive letter, such as V, by typing:

**map v: = netware1/sys:/public**

Note that on LAN Manager Enhanced workstations, when you use a LAN Manager command to view the drive letters on your workstation that are assigned to network directories, only drive letters assigned to Windows NT and LAN Manager directories appear. Similarly, when you use a NetWare command to do this, only NetWare directories appear.

For example, suppose you have assigned drive F to a Windows NT Advanced Server directory, and assigned drives Q and Z to NetWare directories. If you type **net use** (the LAN Manager command to view directories your workstation has connections to), only F appears. If you type **map** (the NetWare equivalent), only drives Q and Z appear.

**Connecting to Network Printer Queues**

LAN Manager, Windows NT, and NetWare must share the printer devicenames (such as LPT1 and LPT2) available on your workstation. Do not assign a single printer devicename to printer queues or more than one network at the same time. If you do, you can use only the LAN Manager queue referred to by that devicename.

The LAN Manager command that lists devicenames assigned to network printers (**net use**) shows only Windows NT and LAN Manager printer queues. The NetWare command (**capture**) shows only NetWare printer queues. When you need to connect to a new printer, first check your current connections to both types of queues, and then use a devicename not already in use.

For example, suppose you need to connect to the printer queue LASER2 on the server PRODUCT. First, check your current connections with the **net use** and **capture** commands.

Typing the LAN Manager command **net use** displays:

Status	Local name	Remote name
OK	LPT2	\\LMSEVER\PRINTER

Typing the NetWare command **capture** displays:

```
Device LPT1: re-routed to queue QUEUE_1 on server NWSERVER
```

Now that you see that the LPT1 and LPT2 devicenames on your workstation are already being used, you should assign LPT3 to the new printer queue.

---

**NOTE:**

Be cautious before you assign LPT1 to a Windows NT or LAN Manager printer queue. On most NetWare networks, when you log on to a NetWare server, the LPT1 devicename is automatically assigned to a NetWare printer queue. If you assign LPT1 to a Windows NT or LAN Manager printer queue, you will be unable to access the NetWare printer queue.

---

If you have assigned a devicename to both a Windows NT or LAN Manager printer queue and a NetWare printer queue, cancel the connection to one of the printer queues, and then connect to that printer queue using another devicename. For example, if you find that LPT1 is assigned to a LAN Manager printer queue (the LASER printer queue on the SALES server) and to a NetWare printer queue, cancel the connection to the LAN Manager printer queue by typing:

```
net use lpt1 /d
```

You can then reconnect to that printer queue using a different devicename, such as LPT2:

```
net use lpt2 \\sales\laser
```

#### **Using NetWare, Windows NT Advanced Server, and LAN Manager Commands**

With NetWare Connectivity, when both NetWare and LAN Manager are running, you can easily use LAN Manager commands and NetWare commands. When you type a LAN Manager command, a Windows NT computer or LAN Manager server processes it; when you type a NetWare command, NetWare processes it.

The following table shows equivalent commands in NetWare and LAN Manager. If you are an experienced NetWare user new to LAN Manager (or vice versa), use this table to find the correct commands.

You can also see this table onscreen by typing **net help netware** at a computer that has LAN Manager and NetWare Connectivity.

Using NetWare Connectivity  
Working with NetWare Connectivity

NetWare command	LAN Manager command	Explanation and example
<b>attach</b>	none	Establishes a link between your workstation and a server, so that you can connect to that server's resources. In LAN Manager, this is not necessary because you can connect to a resource without first attaching to the server.
<b>capture</b>	<b>net use lptx</b>	Connects to a network printer.  capture l=2 s=product q=laser1 net use lpt2 \\product\laser1
<b>endcap</b>	<b>net use lptx /d</b>	Ends a connection to a network printer.  endcap l=2 net use lpt2 /d
<b>help</b>	<b>net help</b>	Displays Help information.  help net help
<b>login</b>	<b>net logon</b>	Logs you on to the network. With NetWare, you usually must be switched to a network drive (such as Q) to log in; with LAN Manager, you can log on from the C drive.  login net logon
<b>logout</b>	<b>net logoff</b>	Logs you off from the network.  logout net logoff
<b>map</b>	<b>net use x:</b>	Connects to a network directory.  map h: = product/sys net use h: \\product\sys
<b>map del</b>	<b>net use x: /d</b>	Deletes a connection to a network directory.  map del h: net use h: /d

NetWare command	LAN Manager command	Explanation and example
<b>ncopy</b>	<b>net copy</b>	Copies files from one location to another on a server, or from one network computer to another.  ncopy memo.doc sales/sys:word net copy memo.doc \\sales\sys\word
<b>nprint</b>	<b>net use lptx:</b> <b>net copy</b>	Prints a file on a network printer. With LAN Manager, you must first use net use to connect to a printer (if you aren't already connected), and then use net copy to send the file to the printer.  nprint memo.txt s=product p=1 net use lpt2 \\product\laser1 net copy memo.txt lpt2
<b>pstat</b> (NetWare 2.x only)	<b>net print</b>	Displays information about printers attached to a server. LAN Manager's <b>net print</b> command lists the jobs in each print queue; NetWare's <b>pstat</b> command does not.  pstat s=product net print \\product
<b>send</b>	<b>net send</b>	Sends a message to another user. With Windows NT and LAN Manager, the message can usually have as many as 256 characters (depending on the value of <b>sizmessbuf</b> in the LANMAN.INI file). With NetWare, the message is limited to 45 characters.  send "Meeting canceled" terryn  net send terryn Meeting canceled
<b>setpass</b>	<b>net password</b>	Changes your password.  setpass net password

Using NetWare Connectivity  
 Working with NetWare Connectivity

NetWare command	LAN Manager command	Explanation and example
<b>slist</b>	<b>net view</b>	<p>Lists the servers on the network. With LAN Manager, it lists only the servers in your Windows NT Advanced Server or LAN Manager workstation domains (and the additional domains that your workstation is monitoring, if any). With NetWare, it lists all NetWare servers on the network.</p> <pre>slist net view</pre>
<b>slist server</b>	<b>net view</b> <i>\\server</i>	<p>Checks if a specific server is active on the network. With Windows NT and LAN Manager, it also lists resources that the server shares; with NetWare, it does not list resources.</p> <pre>slist product net view \\product</pre>
<b>systemtime</b>	<b>net time /set</b>	<p>Sets your workstation's time to match the time of the specified server.</p> <pre>systemtime product net time \\product /set</pre>

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**C**

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**Connecting to a LAN Manager  
for UNIX Systems Server**

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**NOTE:**

The information in this appendix applies to LAN Manager Basic and Enhanced workstations.

Also (except for the last section “Using the Kermit Terminal Emulator”), this appendix is for users who are experienced with UNIX system commands.

---

This appendix contains information for using the UNIX operating system from your workstation, including the following:

- Using special commands available on the LAN Manager server to work with files from the UNIX and MS-DOS operating systems
- Using the Kermit terminal emulator to log on to UNIX system host computers on your network or outside of your network

Some of your LAN Manager servers may run as an application on the UNIX operating system. The server computer may contain files that are accessible to UNIX system users but are not accessible to MS-DOS users at LAN Manager workstations. Conversely, files you create in the MS-DOS environment may not be accessible to UNIX system users. This could cause problems when you try to access certain files on the server, or when someone working in the UNIX system tries to access one of your shared files. This appendix contains information for making the files on your network accessible to users working in different environments.

Some of the tools you will use to make files accessible are special commands available on the LAN Manager for UNIX Systems server. These commands enable you to do the following:

- List and rename UNIX system files
- Convert your text files from MS-DOS format to UNIX system format and vice versa
- Change the UNIX system access permissions of files and subdirectories

To access these commands you must link to the shared directory DOSUTIL on a LAN Manager for UNIX Systems server. Contact your administrator for further information. In addition, some of these special commands can be used to execute UNIX system commands on the server from your workstation. The following table lists the special commands and the sections in which they are described.



<b>Command</b>	<b>Section</b>
<b>udir</b>	“Displaying Files”
<b>uren</b>	“Renaming UNIX System Files”
<b>ud</b>	“Converting Text Files”
<b>uchmod</b>	“Changing UNIX System Permissions for LAN Manager Files”

For command reference pages for the special commands described in this appendix, see either Chapter 5, “Enhanced Reference,” or Chapter 7, “Basic Reference.”

## FileNaming Conventions

Networks running LAN Manager software can include computers running different operating systems:

- MS-DOS (client)
- Microsoft Windows (client)
- OS/2 (client or server)
- Macintosh (client)
- UNIX system (server)
- Windows NT (client or server)

These operating systems have different rules for the length of filenames and directory names and the characters that can be used in these names. Always follow the MS-DOS rules for file and directory names; valid MS-DOS names will always be accessible and visible to a user in any of the five operating system environments.

MS-DOS filenames and directory names can be up to eight characters long, plus an optional extension consisting of a period and up to three additional characters. Illegal characters for MS-DOS names include blank spaces and the special characters listed below:

" , / [ ] + = ; : \* ? \ |

## Displaying Files

The following sections describe how to list server files from the MS-DOS and UNIX operating system environments.

### Displaying Filenames in the MS-DOS Format

To display the contents of a directory on the server, in MS-DOS format, use the MS-DOS **dir** command from your client. In this display, all valid MS-DOS filenames appear in all uppercase letters.

For example, the MS-DOS **dir** command displays the contents of a directory on a server named CARPET.SERVE as follows:

```
F: >dir
Status: RO

Volume in drive F is CARPET_SERV
Directory of F:
GROUPS                65535 10-01-92   4:14p
NOTES                  414 11-08-92   10:27a
FILES                   37 11-12-92   12:05p
MEETINGS TXT          267 11-11-92   11:10a
MEMBERS                <DIR>    12-29-92   3:29p
      5 file(s)          66253 bytes
                        142114816 bytes free
```

Filenames that appear in the MS-DOS system are displayed in standard MS-DOS format with the extension listed in a separate column.

---

**NOTE:**

File or directory names that do not follow the MS-DOS format will not appear in the directory list, even if the files or directories exist on the drive. To display such files or directories, use the **udir** command, described in the next section.

---

### Displaying Filenames in the UNIX System Format

The **udir** command enables you to display the contents of a directory on the server. The format of the display is similar to that displayed by the UNIX system **ls -l** command. The **udir** command is useful when you want to display files and directories that are valid to the UNIX system but invalid to

## Connecting to a LAN Manager for UNIX Systems Server

### Displaying Files

the MS-DOS system [including high-performance file system (HPFS)]x, or when you want to see the UNIX system access permissions and ownership of files and directories.

To use the **udir** command, do the following

- 1 Link to the shared directory containing the **udir** command (usually \\server1.serve\DOSUTIL).
- 2 Link to the shared directory whose contents you want to display.
- 3 At the MS-DOS prompt, type **udir *pathname***.

Replace *pathname* with the full path of the directory whose contents you want to display.

---

**NOTE:**

Additional parameters are available with the **udir** command. For more information on the **udir** command, see Chapter 5, “Enhanced Reference,” or Chapter 7, “Basic Reference.”

The following is an example of a directory list in UNIX system format:

```
C:> udir h:
Volume in drive H: is WRITEON
Directory of h:/*
UNIX-based server 'WRITEON.SERVE' in share area 'DMD'
DOS Name      Owner  Group  Modes  UNIX Name
.              <DIR>  12-18-91  6:56p  aeb    other  rwxrwxr-x  .
. .           <DIR>  01-05-92  8:08a  dmd    other  rwxrwxr--  . .
              572    01-18-92  8:08p  smb    DOS-a-- rw-r--r--  .profile
REPORT       21357  12-05-92  4:45p  aeb    other  rw-rw-r-x  report
SPCH.D2      16686  12-05-92  9:06a  aeb    other  rwxrwxr-x  spch.d2
DOC.1        <DIR>  12-18-92  2:47p  dmd    other  rwxrwxr-x  doc.1
              12333  12-19-92  1:07p  gsc    other  rwxrwxr-x  word.program

5 Files      3.15 Megabytes free
```

The following list describes each column on the screen:

- MS-DOS file and directory names. The entry `.` is an abbreviation for the current directory. The entry `..` is an abbreviation for the next higher level, or parent, directory. These abbreviations have the same meaning in the MS-DOS and UNIX operating systems. Only legal MS-DOS names will appear.
- The size of the file, in bytes. Directories are identified by:

<DIR>

- The date when the file or directory was most recently modified.
- The time when the file or directory was most recently modified.
- The UNIX system owner of the file or directory.
- The UNIX system group to which the file or directory belongs.
- UNIX system access permissions for the file or directory.
- UNIX system file and directory names. The file named WORD.PROGRAM appears under this UNIX system column only because this filename is invalid on the MS-DOS system. Filenames up to 1024 characters long can be displayed in this column.

### Using the Udir Command on Local Client Drives

If you use the **udir** command to list a physical disk drive on your client (for example, drive A, B, or C if your client has a hard disk), it provides a display similar to that of the MS-DOS **dir** command. This display also includes an MS-DOS access permissions column similar to that displayed by the UNIX system **ls -l** command.

---

**NOTE:**

---

When you enter the **udir** command, you can specify a single filename if you want to display one file only, or use the wildcard characters (\* and ?) to display multiple filenames.

The following is a sample **udir** display of directories and files on a client's local hard disk:

```
C:> udir
Directory of c:

ansi.sys          rw--a    1651    5-09-92   11:05a
autoexec.bat     rw--a     145   11-08-92    8:00a
config.sys       rw--a     344   11-08-92    9:30a
landoc           rw--a    <DIR>    9-10-92    7:30a
dos3_2           rw---    <DIR>   10-10-92   11:08a
four1.scr        rw--a    8007   10-04-92    9:34a
ibmdos.com       r-hsa   28009    9-12-92    3:45p
lanman.scr       rw--a   1054   11-24-92    4:45p
report1.dft      rw--a    8128    9-02-92    5:30p
report2.dft      rw--a    9012   10-06-92    9:30a
old.scr          rw--a   2045    8-08-92    8:30p
list             rw--a   3206   11-08-92    4:04p

12 Files          19.13 Megabytes free
```

## Renaming UNIX System Files

The **uren** command enables you to rename a UNIX system file or directory. Specifically, you can use it to change UNIX system filenames on the server that are invalid for the MS-DOS system to filenames that are valid for MS-DOS (see “Filenaming Conventions,” earlier in this appendix for requirements for valid MS-DOS filenames).

This command is useful if you created a file while logged on as a UNIX system user (via terminal emulation), and now want to access that file from the MS-DOS prompt of LAN Manager.

To rename a UNIX system file

- 1 At the MS-DOS prompt on a LAN Manager workstation, link to the shared directory on the server that contains the file to be renamed. (Instructions for linking to shared directories are provided in Chapter 2, “Using Shared Directories.”)
- 2 Type the letter of the shared directory to which you are linked.
- 3 Type **uren *name1 name2***, where *name1* is the current UNIX system filename and *name2* is the new filename. (Make sure that the new filename complies with MS-DOS filename conventions.)

## Using the Uren Command to Move Files

Because the **uren** command accepts full pathnames, you also can use it to move a file from one UNIX system directory to another. For example, to move the file BUDGET from the REPORT subdirectory to the MEMOS subdirectory, and to rename the moved file 1QBUDGET, enter the following command:

```
uren \report\budget\memos\1qbudget
```

The **uren** command also enables you to move one or more files to another directory by entering the command in the following format:

```
uren name1 name2 ... directoryname
```

Replace *directoryname* with the name of the destination directory.

---

**NOTE:**

---

You cannot use the MS-DOS wildcard characters (\* and ?) with the **uren** command. In addition, you cannot use the **uren** command to move a file from one drive to another.

For more information on the **uren** command, see Chapter 5, “Enhanced Reference,” or Chapter 7, “Basic Reference.”

## Handling Incompatible File Formats

Different operating systems store files in different formats. For this reason, even if you can link to a shared directory that contains a file you want to use, you may not be able to open the file; or if you are able to open the file, it may be inappropriately formatted for your environment.

For example, suppose the following file was created with a UNIX system text editor:

```
Dear Bob:
This letter is in response to your inquiry of February 25.
The information you requested is enclosed, along with other
materials that should help you evaluate our product line.
```

If you look at this file with the MS-DOS **type** command, you would see the following:

```
Dear Bob:
This letter is in response to your inquiry of February 25.
he information you requested is enclosed, along with other
materials that should help you to evaluate our product line.
```

Similarly, if you had created the original file using an MS-DOS editor and listed it with the UNIX system **cat -v** command, you would see the following:

```
Dear Bob:^M
^M
This letter is in response to your inquiry of February 25.^M
The information you requested is enclosed, along with other^M
materials that should help you evaluate our product line.^M
^Z
```

This is because, in the UNIX system, each line of text ends with a line-feed character. In the MS-DOS system, however, each line of text ends with a carriage-return character, followed by a line-feed character.

If you need to convert text files from one operating system format to another, LAN Manager provides a conversion utility, the **ud** (UNIX to MS-DOS) command, which is described in the next section. The **ud** command can be used to translate a text file from MS-DOS format to the UNIX system format, or vice versa.



## Converting Text Files

This section describes how to convert text files from one operating system format to the other with the **ud** command, and how to pipe and redirect reformatted files. The UNIX system executable version of the **ud** command is stored in the **/usr/bin** directory, and the MS-DOS executable version is stored in the DOSUTIL shared directory on a LAN Manager for UNIX Systems server. In the UNIX system version, the command name and its parameters must be entered as all lowercase characters. In the MS-DOS version, the command name and parameters may be entered as either uppercase or lowercase characters.

### Using the Ud Command

---

**CAUTION:**

---

This command is intended only for text files. Do not use this command on executable or nontext data files.

The **ud** command converts a text file from one format to another format.

To convert a text file

- 1 Link to the shared directory containing the **ud** command (usually \\server1.serve\\DOSUTIL).
- 2 At the MS-DOS prompt, type:

```
ud [option] filename1 > filename2
```

Replace *option* with one of the four options discussed in the next section, or leave it blank to convert MS-DOS to UNIX and vice versa. Replace *filename1* with the name of the original file. Replace *filename2* with the name for the new, converted file. The filenames must be different from each other.

For example, to convert a UNIX system file named UNIXTEXT to a file in MS-DOS format named SYSTEXT, type:

```
ud unixtext > systext
```

The **ud** command rewrites the file UNIXTEXT in MS-DOS format and puts it in a file named SYSTEXT. The original UNIXTEXT file remains unchanged.

### Guidelines for Using the Ud Command

When you are not sure of the format of a text file, use the **ud** command with the **-d** or **-u** option to convert the file to the format you need. If the file is already in that format, the command output (*filename2*) will be identical to the original file.

If you do not enter a second filename, the file is converted, and its text is displayed on your screen.

If you enter a second filename, be sure the filename is different from the first filename. If the filename is the same, the contents of the file that you want to convert will be deleted.

### Options

The **ud** command has the following options:

#### **-d**

Converts a file to MS-DOS format.

#### **-u**

Converts a file to UNIX system format.

---

#### **NOTE:**

---

If you use either **-d** or **-u** for a file that is already in the specified conversion format, the command output (*filename2*) will be identical to the original file.

#### **-z**

affects the **^Z** character. MS-DOS files often have **^Z** as the last byte in the file. When converting a UNIX system file to MS-DOS format, the **-z** option does not put **^Z** at the end of the file. When converting an MS-DOS file, the **-z** option forces **ud** to ignore any **^Z** characters in the file. Without the **-z** option, the conversion stops when the first **^Z** is encountered.

### Piping and Redirecting Converted Files

You can use the pipe operator (**|**) with the **ud** command to send a reformatted file to a program. For example, to convert a file named UNIXTEXT from UNIX system format to MS-DOS format and display the converted file a screenful at a time, pipe the output of **ud** to the MS-DOS **more** utility by using the following command:

```
ud -d f:unixtext | more
```

In this example, drive F is linked to the server directory, which contains the UNIXTEXT file, and the **more** utility is in your path.

Piping is especially useful with MS-DOS commands, such as **sort**, which use a carriage return to determine where each line ends in the file. Because files in UNIX system format do not identify line ends by carriage returns, the files must be converted to MS-DOS format for the **sort** command to operate properly. You can then pipe the converted text to the **sort** command. For example, type:

```
ud -d unixtext | sort
```

This example displays the sorted text on your screen. To store the results in a new file called TEXT.SRT, you can use the redirection character ( > ) as follows:

```
ud -d unixtext | sort> text.srt
```

## Changing UNIX System Permissions for LAN Manager Files

Since LAN Manager for UNIX system servers run on the UNIX operating system, all LAN Manager files stored on the server are UNIX system files with UNIX system access permissions. The UNIX system access permissions on a LAN Manager file will always agree with the LAN Manager access permissions unless the UNIX system access permissions are explicitly changed. If UNIX system access permissions are modified, they can prevent access to a file or directory even if LAN Manager access permissions grant access to the resource.

The **uchmod** command enables you to change UNIX system access permissions on a file to resolve access conflicts. For more information on the **uchmod** command, see Chapter 5, “Enhanced Reference,” or Chapter 6, “Basic Reference.” Use the **udir** command to display the current UNIX system access permissions for a file.

## Using the Kermit Terminal Emulator

You can use terminal emulators on your client to log on to UNIX system computers on your network or outside of your network. Without leaving your client, you can log on to a host computer and perform all operational tasks as if you were sitting at that computer.

Remember that logging on to a host computer is not the same as logging on to a server. When you are logged on to a host computer, your client functions like a computer terminal. Logging on to a host computer does not enable you to share directories or link to shared resources on the network.

The following is a list of some of the terminal emulators you can use on the network:

- Kermit
- Crosstalk® XVI, Network Version
- RELAY Gold Network Version 4.0
- Yale Terminal Emulator Program (YTERM) Version 4.0
- Reflection 4: Version 3.3
- TEworks /LAN

This section describes the procedures for using Kermit to log on to and off of a UNIX system host computer, and to transfer files between the host and your client. To transfer files, a host version of Kermit must be running on the host computer.

### Logging on to a UNIX System Host from a Workstation

To log on to a UNIX system host computer with the Kermit terminal emulator

- 1 Start LAN Manager by issuing the **net start workstation** and **net logon** commands.
- 2 Link to the DOSUTIL shared directory on a LAN Manager for UNIX System server with the **net use** command.

## Connecting to a LAN Manager for UNIX Systems Server Using the Kermit Terminal Emulator

- 3 To start the Kermit terminal emulator, at the client prompt type:

**x:kermit**

where x is the letter associated with the linked DOSUTIL directory. Kermit startup information is displayed and the Kermit prompt appears. The Kermit prompt looks like this:

**MS-Kermit>**

- 4 At the Kermit prompt, type:

**set port net hostname**

Replace *hostname* with the name of the host computer to which you want to log on. If you are logging on to a server, replace *hostname* with the servername of the server without the .SERVE extension. For example, if the name of the server is yourserv.serve, type:

**set port net yourserv**

A message appears stating that your nodename is being checked.

- 5 At the Kermit prompt, type **connect**.

The Kermit terminal emulator screen appears, followed by the login prompt of the computer to which you have connected.

- 6 Type your UNIX system login.

---

**NOTE:**

---

You cannot log on as root from a remote terminal.

A password prompt appears.

- 7 Type your password.

Information about the host computer appears.

- 8 Do one of the following:

- If the TERM= prompt appears, type one of the following:

**kermit VT320 VT102 VT100 VT52**

- Or -

- If the prompt does not appear, type:

**TERM=*termtype*; export TERM**

Replace *termtype* with one of the types listed above.

The UNIX system prompt for the host system appears.

You have now logged on and can work on the UNIX system.

---

**NOTE:**

---

Because your client is emulating a terminal, some keys do not function as they normally do. For example, PAGE UP and PAGE DOWN are not transmitted to the UNIX system, but they do cause local scrolling of the Kermit screen.

### **Logging Off of a UNIX System Host**

You can return to the workstation prompt by logging off of the UNIX system host, or by temporarily switching to MS-DOS from the UNIX system. To access MS-DOS temporarily, see the next section.

To log out of a UNIX system host computer

- Press CTRL+D to log out.  
The Kermit prompt, MS-Kermit>, appears.
- Type **exit** or **quit**.  
The MS-DOS prompt appears.

You have now logged out of the UNIX system host.

### **Temporarily Accessing the MS-DOS Prompt**

You can move back and forth between the MS-DOS and UNIX systems without logging out of the UNIX system.☞

To temporarily return to the MS-DOS prompt

- Press CTRL+] and then press P.  
The MS-DOS prompt appears. You may now enter an MS-DOS command or use an MS-DOS application.
- To return to the UNIX system session, type **exit** at the MS-DOS prompt, and press ENTER then press SPACEBAR to continue.

### **Transferring Files**

You can use the Kermit terminal emulator to transfer files from a UNIX system host computer to your workstation, and vice versa. The files sent to or received from your workstation can be on a hard disk or diskette on your

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workstation, or in a shared directory on a server to which your workstation is linked. The files sent to or received from the UNIX system can be in any UNIX system directory to which you have access. A UNIX system version of the Kermit command must be on the host computer.

---

**NOTE:**

---

To transfer files, you need to execute part of the file transfer procedure on the Kermit program running on your client, and another part of the procedure on the Kermit program running on the host computer; you need to know on which system you are executing a command.

To transfer files using the Kermit terminal emulator

- 1 Start the Kermit terminal emulator on your workstation, and log on to the UNIX system host computer as described in “Logging on to a UNIX System Host from a Workstation,” earlier in this appendix.
- 2 At the host UNIX system prompt, type **kermit**.

The Kermit program is started on the host. The host Kermit prompt, C-Kermit>, appears.

---

**NOTE:**

---

Type commands on the host system in lowercase letters, as shown. Also, note the difference between the workstation Kermit prompt and the Kermit prompt on the host. The workstation Kermit prompt (MS-Kermit>) begins with the letters MS while the host Kermit prompt (C-Kermit>) begins with the letter C.

- 3 Do one of the following:
  - To transfer text files, proceed to step 4.
  - Or -
  - To transfer binary files, type:  
**set file type binary**  
Proceed to Step 4.
- 4 Do one of the following:
  - To send a file from the host computer to your workstation, type:

**send /pathname**

Replace *pathname* with the UNIX system path and the name of the file you want to transfer to your workstation. If the file is directly under your current directory on the UNIX system, and not in a subdirectory, you can type just the filename.



Kermit displays the following message:

```
Escape back to your local system  
and give a RECEIVE command . . .
```

Proceed to step 5.

- To send a file from your workstation to the host computer, type:

**receive/pathname**

Replace *pathname* with the UNIX system path and the directory to which you want the file transferred and the name you want to assign to the file. If you want the file directly under your current directory on the UNIX system, and not in a subdirectory, you can type just the filename.

Kermit displays the following message:

```
Escape back to your local system  
and give a SEND command . . .
```

Proceed to step 5.

- 5 Press CTRL+] and then press C.

The workstation Kermit prompt, MS-Kermit>, reappears. Commands you enter at this prompt execute on your workstation system, not on the host system.

- 6 Do one of the following:

- If you are transferring a file from the host computer to your workstation, type **receive pathname**.

Replace *pathname* with the drive and path on your workstation to which you want the file sent, and the name you want to assign to the file. Remember, the drive ID may be linked to a shared directory.

- If you are transferring a file from your workstation to the host computer, type **send pathname**.

Replace *pathname* with the drive, the path to, and the name of the file on your workstation that you want to send to the host computer. Remember, the drive ID may be linked to a shared directory.

The Kermit file transfer screen appears and displays information about the transfer as it occurs.

After the file has been transferred, the workstation Kermit prompt, MS-Kermit>, appears.

- 7 Type **connect**.

## Connecting to a LAN Manager for UNIX Systems Server Using the Kermit Terminal Emulator

Your workstation is reconnected to the UNIX system host. The host Kermit prompt, `C-Kermit>`, appears.

- 8 Do one of the following:
  - To transfer another file, repeat steps 4 through 8.
  - To exit Kermit on the UNIX system and return to the UNIX system prompt, type `quit`.

---

# D

---

## Troubleshooting

This appendix applies to both LAN Manager Enhanced and LAN Manager Basic. It describes how to:

- Perform simple checks on your computer and the network in case a malfunction

## Troubleshooting

### Using the Kermit Terminal Emulator

occurs while you are using the network.

- Troubleshoot a shared printer. (Refer to these instructions only if a shared printer is attached to your workstation.)

The procedures in this appendix assume that, at some point, your computer and, if applicable, the shared printer were functioning on the network.

---

## Isolating Problems

Problems at your computer may be caused by trouble with its network adapter or problems in the LAN Manager program loaded on your computer. Problems also may be caused by trouble with the network hardware (other than the network adapter). This section describes how to:

- Determine if the trouble is in your computer or in the network hardware.
- Identify problems with your computer's LAN Manager program or network adapter.

---

**NOTE:**

Unless you are authorized to do so, do not attempt to correct problems that are occurring at more than one computer—problems at more than one computer may indicate a server or network-wide problem. If you suspect that such a problem exists, notify your administrator.

---

### Before You Try Anything Else...

Before you can identify and correct any problem, you need to know where to look for it. The following procedure describes how to isolate a problem in either your computer or on the network.

To isolate a problem

- 1 Check your screen to see if the trouble generated an error message.
  - If the trouble provided an error message, notify your administrator, reporting the error number and the text of the error message. Otherwise, proceed to step 2.
  - If the trouble did not generate an error message, proceed to step 2.
- 2 Ask other network users if they are having similar problems at their computers, or try the operation at another computer.
  - If your computer is the only one with the problem, the problem is probably with your computer, not the network. Proceed to the next section.
  - If other computers are having a similar problem, the problem may be a network problem. Notify your administrator.

## Troubleshooting Your Computer

If you suspect your computer is the trouble source, perform the following procedure to identify the problem.

### To identify a problem with your computer

- 1 Check the network wiring to your computer's network adapter.

If you are using Microsoft TCP/IP and connect to the server, you can use the **ping** command to check network server connection (For more information, see Chapter 5, "Enhanced Reference," or Chapter 7, "Basic Reference.")

Refer to the installation manual packaged with the network adapter for instructions on how to connect the network wiring correctly.

- 2 Reboot your computer and load LAN Manager.
  - If the trouble no longer appears, you corrected the problem by rebooting. You do not need to proceed further.
  - If the trouble still exists, proceed to step 3.
- 3 Edit your AUTOEXEC.BAT file so that the LAN Manager software does not load automatically. (Save a backup copy of the AUTOEXEC.BAT file.)
- 4 Reboot the computer again and determine if the problem still exists.
- 5 Do one of the following:
  - If the trouble exists when LAN Manager is not running, the trouble is not network-related, but may be due to a problem with the computer's operating system, the computer hardware itself, or an application program you may be running. Notify your administrator.
  - If the trouble goes away when LAN Manager is not running, the trouble may be network-related. Notify your administrator.

If this procedure does not identify the source of your problem, notify your administrator.

## Troubleshooting a Shared Printer

This section describes problems that may arise with a shared printer that is using clipcach or clispool. The problem descriptions include recommended resolutions.

### Jobs Not Printing

**Problem:** A shared printer is connected to parallel port LPT1 (PRN) on your workstation. You send print jobs to that printer over the network (rather than locally), but they do not print. The error only applies to workstations using **clispool** or **clipcach** with LAN Manager for UNIX Systems servers.

**Resolution:** Type **net use**. Then do one of the following:

- If the display shows that the LPT1 (PRN) port ID is linked to the printer, unlink that port ID, and then link an unused port ID to the printer. The LPT1 or PRN port must be reserved for the physical connection to the printer.
- If the display shows that LPT1 is not linked, follow these steps:
  - 1 Confirm that the printer queue is released.
  - 2 Confirm that the print job is in the printer queue.
  - 3 Type **net use** to check that your workstation has linked a drive to the spool area.

The name is usually the computername of your workstation appended with the letter Z.
  - 4 Type **dir driveid** to check that the job is in the spool area.

Replace *driveid* with the drive you located in step 3.
  - 5 Type **clispool** or **clipcach** as appropriate to verify that the printing software is operating correctly.
  - 6 Confirm that the printer is turned on, is online, and is operating correctly.

### Jobs Not Printing in the Background

**Problem:** Print jobs will not print at your shared workstation printer while you run an application, but the jobs complete successfully when you exit to the MS-DOS system.

**Resolution:** Under MS-DOS versions earlier than 3.2, the **print** command cannot do background printing in all circumstances. If you are using a version of MS-DOS earlier than 3.2, do not run the application when print jobs are expected from the server, or upgrade to MS-DOS version 3.2 or later.

### **Text Entered Is Not Displayed**

**Problem:** A printer is connected to a serial port of your workstation. Your workstation is turned on and linked to the server, but nothing appears on-screen when you type.

**Resolution:** The printer connected to your serial port may be offline. Check the indicator lights on the printer and turn it online if required. For information on turning the printer online, see your printer guide.

### **Drive ID Unlinked**

**Problem:** One of your linked drive IDs has become unlinked from a shared directory.

**Resolution:** Type `net use`, then do one of the following:

- If the display shows an error with the link, unlink the drive ID, and then link it again.
- If the display shows that the drive ID is linked to the printer's spool directory, link a different drive ID to the shared directory from which you were unlinked. The printer's spool directory is displayed as the workstation's computername usually followed by the letter Z.

### **Keyboard Locked Up**

**Problem:** You are using an application at your workstation. Your workstation has a shared printer connected to it. Occasionally the keyboard appears to lock up for a few seconds, especially when a print job is in progress.

**Resolution:** This hesitation at the keyboard is normal under these circumstances, especially when the printer is connected to a serial port.



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**E**

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**Using Remote Access Service**

## Isolating Problems

The Remote Access service (RAS) allows off-site PC users transparent access to network resources via a telephone connection with a network. This appendix describes how to install RAS on a workstation running MS-DOS version 3.3 or later with or without Microsoft Windows versions 3.0 or 3.1. It describes how to use a Windows NT or LAN Manager network from a remote workstation and how to troubleshoot any problems that may occur. It also includes information on modifying your modem information script and configuration files.

When RAS is installed, your workstation has a Phone Book program for entering and maintaining the names and telephone numbers of remote networks. You can connect to and disconnect from these networks from either the command line or the Phone Book program, using one of many different types of modems.

Once you are connected to a network, you have access to network resources as if you were in the office, subject to the same privilege and permission restrictions. You can use **net** commands, access shared directories and printers, and use client-server applications. RAS also saves memory on your workstation, because you don't need to load multiple protocols to use multiple networks.

For information on using RAS from Windows for Workgroups workstations or MS-DOS Workgroup Connection workstations, see the Release Notes with your Network Client manuals, along with your Windows for Workgroups or Workgroup Connection manual(s). For information on installing RAS on a server, see your Windows NT manuals.

## Installing RAS

This section includes information on how to install RAS on workstations running MS-DOS, with or without Microsoft Windows, and how to install RAS when you need to use the network in the office and from a remote site.

If you will only be using your workstation for dialing in to a network, go directly to the following sections.

If you need to connect to a network both from a remote site and from your office, your workstation must have a LAN Manager network driver to access the network from the office, and the RAS drivers to access the network from a remote site. See “Installing on Dual-Role Workstations,” later in this appendix.

### Installing on MS-DOS

LAN Manager workstation software must be loaded on your workstation prior to installing RAS.

#### To install RAS on MS-DOS

- 1 Insert the RAS installation disk in drive A.
- 2 Type **a:\setup**. The Setup box appears on the screen. Use the TAB key to move around in the Setup box. Pressing ENTER selects the highlighted option.

If the Setup program detects that a network adapter driver has been configured, the program asks whether the user plans to use a:

- Network adapter or modem, but not both at the same time.
- Network adapter and modem at the same time.

If you plan to use a computer both at and away from the office, select the first option. If you plan to use a computer only at the office, select the second option.

If no network adapter is detected, the Setup program assumes you will only be using RAS from a remote site.

The system installs the files, and the Add COM Port box appears on the screen.

- 3 Specify a port and click the OK button. See the Help screen for detailed information on port setting choices.

## Installing RAS

The Configuration box appears on the screen.

- 4 Choose one or more of the following:
  - To accept the configuration defaults as indicated on the screen, choose the OK button.
  - To choose a different port, click the Add Port button, and specify the port you want to use (for example, COM2).
  - To choose a different type of modem, click the Select Modem button, and select your modem type.
  - To load the RAS drivers manually at startup, click on the X.
- 5 Choose the OK button. The Install Complete box appears on the screen.
- 6 Restart your computer.

For additional instructions, use Setup Help, or contact your network administrator.

## Installing on Microsoft Windows

LAN Manager must be loaded on your workstation prior to installing RAS.

Once the software is installed on Microsoft Windows, the RAS Phone Book will be on your Microsoft Windows version 3.1 screen.

### To install RAS on Microsoft Windows

- 1 Follow the steps in “Installing on MS-DOS.”
- 2 Type **win** to start the Windows operating system.
- 3 From the Program Manager, choose File.
- 4 From the File menu, choose New.
- 5 From the New Program Object dialog box, choose Program Item.
- 6 Choose the OK button.
- 7 In the Description box, enter the following:  
REMOTE ACCESS PHONE BOOK
- 8 In the Command Line box, enter the following:  
RASPHONE.EXE

9 Choose the Change Icon.

The Select Icon dialog box appears.

10 In the File Name box, enter one of following:

- If you are running LAN Manager Enhanced, enter:

C:\LANMAN.DOS\NETPROG\RASPHONE.ICO

- Or -

- If you are running LAN Manager Basic, enter:

C:\LANMAN.DOS\BASIC\RASPHONE.ICO

If you have installed LAN Manager to a directory other than C:\LANMAN.DOS, replace C:\LANMAN.DOS with that directory name.

11 Choose the OK button.

12 In the Program Properties dialog box, choose the OK button.

## Installing on Dual-Role Workstations

Your workstation must have a LAN Manager network driver to access the network from the office and the RAS drivers to access the network from a remote site. However, you only use one set of these drivers at a time. This section shows you how to unload whichever driver you aren't using.

To set up your workstation to connect to the network from a remote site

- Unload any network protocol drivers used at the office by typing unload protocol before loading the RAS drivers and attempting a remote connection.

---

**NOTE:**

The **unload** command will not unload device drivers or terminate-and-stay-resident (TSR) programs that do not conform to the LAN Manager Demand Protocol Architecture (DPA), such as statically loaded protocols. Type **load /i** to see the names of the protocols that can be unloaded using the **unload** command. Protocols must be unloaded in the reverse order of which they are listed. If the protocol you are running cannot be unloaded using the unload command, you may unload it by running the LAN Manager Setup program, removing that protocol from your configuration, and rebooting your computer.

Now you can use the commands in "Using the Network," later in this appendix, to connect to the network from a remote site.

## Using Remote Access Service

### Installing RAS

To set up your workstation to connect to the network from the office

- 1 Type **rasload /u** to unload the RAS drivers and to stop the Workstation service. Use **rasload /u /y** to answer yes to all the questions normally asked when stopping the Workstation service.
- 2 Type **load protocol** to load the protocol you need to use to connect to the Windows NT or LAN Manager network.

If your workstation is in the office and is connected by cable to the network, the LAN Manager commands described in this manual will work.

### Conserving Memory on MS-DOS Workstations

This section describes two ways to conserve memory: unloading the RAS drivers when you don't need them, and loading the RAS drivers into upper memory when they are in use.

#### Unloading the RAS Drivers

Type **rasload /u** to unload the RAS drivers and stop the Workstation service. Use **rasload /u /y** to answer yes to all the questions normally asked when stopping the Workstation service.

#### Loading the RAS Drivers Into Upper Memory with LAN Manager

On MS-DOS client workstations, the RAS Setup program adds the following lines to the **[asybeui\_xif]** section of PROTOCOL.INI:

```
load="asybeui", "vcommiod[u]", "wantsr[u]"
unload="wantsr /u[c]", "vcommiod /u[c]", "asybeui[du]"
```

The [u] switch in the LOAD= line allows MS-DOS version 5 or 6 to load the RAS drivers into upper memory. You can also use a third-party memory manager to load the drivers into upper memory. For example, if you are using Quarterdeck expanded memory manager QEMM386@, you would insert the QEMM386 LOADHI command as follows:

```
load="loadhi lanman.dos\drivers\protocol\asybeui\asybeui[cbr]",
      "loadhi vcommiod[c]", "loadhi wantsr[c]"
unload="wantsr /u[c]", "vcommiod /u[c]", "asybeui[du]"
```

The LOAD command accepts the following switches:

Switch	Meaning
u	When used in the LOAD= line, the program is loaded into upper memory blocks on MS-DOS version 5 or 6, if possible; otherwise the program is loaded into conventional memory. When used in the UNLOAD= line, the program is unloaded.
c	No attempt is made to load the program into upper memory blocks.
b	Binds the protocol to the hardware device driver.
r	Registers the protocol with the LAN Manager redirector.
d	Deregisters the protocol from the LAN Manager redirector.

The default switches are [**ubr**]. Before binding, be sure the program is already loaded; that is, use [**u**] or [**c**] before using [**b**]. Before registering, be sure that the file is both loaded and bound; that is, use [**u**] or [**c**] and [**b**] before using [**r**].

## Using the Network

This section includes information on connecting to, using, and disconnecting from the network, and provides a command summary.

### Connecting to the Network

---

**NOTE:**

You must load RAS before you start the Windows operating system. If you are using your computer to connect sometimes by modem and sometimes by network adapter card, you should not start Windows from your AUTOEXEC.BAT file, or if you prefer, remember to exit Windows, load RAS, and then return to Windows.

If you are using Microsoft Windows version 3.0 with a serial mouse, start Windows before using RAS to connect to the network. If you start Windows after establishing a connection, the connection may be lost.

---

To load the RAS drivers manually, start at step 1. If you accepted the Setup default to load the RAS drivers automatically, start at step 2.

To connect to a Windows NT or LAN Manager Network

- 1 If the RAS drivers are not loaded automatically on your workstation, type **rasload** at the MS-DOS command prompt.
- 2 At the MS-DOS prompt, type **rasphone** to open the Phone Book.  
-Or-  
From the Windows interface, click on the RAS Phone Book icon.
- 3 Create and save a Phone Book entry (use Phone Book Help).
- 4 Connect to the network (use Phone Book Help).

You can now use the network as if you were in your office.

---

**NOTE:**

You can access data files across the telephone connection, but loading software programs across the network via a telephone line will cause extremely long delays. Contact your network administrator for more details.

---



## Disconnecting from the Network

To disconnect from the network

1 At the MS-DOS prompt, type **rasphone** to open the Phone Book.

-Or-

From the Windows interface, click on the RAS Phone Book icon.

2 Disconnect from the network (use Phone Book Help).

## User Commands

The following commands use RAS to access your LAN Manager or Windows NT network remotely.

Command	Action
<b>rasphone</b>	Opens the Phone Book.
<b>rasdial</b>	Allows you to connect and disconnect.
<b>rasload</b>	Loads the RAS drivers.
<b>rasload /u</b>	Unloads the RAS drivers and stops the Workstation service if necessary.
<b>rasload /u /y</b>	Unloads RAS drivers and answers yes to all the questions normally asked when stopping the Workstation service.

Type **/help** after any command to get more information about that command. For example, type **rasdial /help** to learn more about the **rasdial** command.

## Finding Help About Phone Book

While you are using the RAS Phone Book, you can get Help with the following commands.

Command	Action
General Help	Select the Help index.
Help for Screens	Click the screen's Help button.
Help for Error Messages	Press F1 when an error message occurs.

## Modifying Phone Numbers

The following characters can be used to modify phone numbers in the RAS Phone Book.

Character	Function
,	Pauses briefly (2 seconds for most modems)
@	Waits for extended silence before continuing. Use with 2400 baud or greater modems.
<b>P</b>	Switches from touch-tone to pulse/rotary dialing.
<b>T</b>	Switches from pulse/rotary to touch-tone dialing.
<b>W</b>	Waits for a dial tone before continuing. Use with 2400 baud or greater modems.

See Phone Book Help for additional details.

The PHONE.INF file contains information describing each Phone Book entry on a RAS client workstation. To guard against possible corruption of PHONE.INF, back up the file regularly. Because this file is created and maintained by the RAS Phone Book utility, do not attempt to modify it unless absolutely necessary. If you do decide to modify PHONE.INF, be sure to back up the file first.

---

**CAUTION:** Removing LAN Manager deletes this file. Be sure to back up PHONE.INF before removing LAN Manager. Removing the RAS client software while leaving LAN Manager intact does not delete this file.

---

## Troubleshooting

This section explains how to solve common problems and provides a complete list of error codes.

### Common Problems

#### Network Access Problems

If you are denied access to your network, contact your network administrator. You may not have a valid user account on your Windows NT or LAN Manager network, or you may not have permission to dial in.

#### Connection and Response Problems

If the RAS server is not responding, one or more of the following may be true:

- The RAS server is not running. Contact your network administrator.
- You are using an incompatible version of the RAS software. Contact your network administrator.
- The modem on the RAS server has been turned off. Contact your network administrator.
- Your modem and/or modem configurations are incompatible with the modem on the RAS server. Contact your network administrator.
- Your hotel room telephone line cannot accommodate your current modem speed. Use a lower baud rate, or contact the hotel manager to request a direct line.
- You specified the wrong telephone number. Update your Phone Book entry and redial.
- You did not specify a special number that gives you an outside line. For example, some businesses and hotels require you to dial 9 before dialing your number.
- There is static on the telephone line. Contact your phone service provider.
- The RAS server does not call back as expected. Your account may not be properly configured, or your modem setting may be incorrect on the server. Contact your network administrator.
- You cannot access network resources even though the connection appears intact.

Contact your system administrator.

- You are disconnected from the network when you start Microsoft Windows version 3.0. When running MS-DOS and Microsoft Windows version 3.0 and using a serial mouse, be sure to start the Windows operating system before connecting. Alternatively, you can upgrade to Microsoft Mouse version 8.0 or later. When using the version 8.0 mouse driver, change the second line in the MOUSE.INI file from AUTOMATIC SEARCH to SERIAL1 or SERIAL2, depending on which serial port the mouse is attached to. Contact Microsoft Product Support Services for information on upgrading mouse drivers.

### **Modem Problems**

If your modem is not responding properly, one of the following may be true:

- Your modem has been turned off or unplugged.
- Your modem is not properly connected to your computer.
- Your modem is in an inconsistent state. Restart or reset your modem and redial.
- Your modem and/or modem cables are defective. Contact your network administrator to make sure you have the correct modem cable for RAS.
- Your modem type is not supported by RAS, or it is not a fully compatible version of the modem type you selected. Contact your network administrator.
- Your modem is not configured correctly. See your modem user guide, or contact your network administrator.
- If your modem connects at a lower baud rate than you specified, the RAS server may have a modem type different from what you are using. Contact your network administrator.

### **Display Problems**

If your screen blacks out when running MS-DOS and the version 7.0.4 mouse driver, upgrade your mouse driver to version 8.0 or later.

### **Loading and Unloading Problems**

If you encounter problems when loading the RAS drivers, one of the following may be true:

- The RAS drivers are already loaded.
- There is insufficient MS-DOS memory available. Unload some (TSR) programs

and try again.

- There is insufficient storage space on your hard disk. Ensure that your hard disk has a least 1MB of free space.

If you encounter problems when unloading the RAS drivers, one of the following may be true:

- A telephone connection still exists. Drivers will not unload if a telephone connection exists. This protects you from accidentally hanging up a connection and losing data. Save your data files, disconnect the phone line, and then try the **rasload /u** command again.
- You have an incorrect TSR unloading order. Before unloading RAS, you must unload all TSR programs that were loaded after RAS was loaded. For example, if you loaded DOSKEY after loading RAS, you must unload DOSKEY prior to unloading RAS. Typing **net start workstation** after typing the **rasload** command also causes a TSR unloading error. Restart and then unload the RAS drivers.

### Performance Problems

If you encounter poor performance while using RAS, one of the following may be true:

- If you encounter errors on the line and poor performance, contact your network administrator.
- If it takes a long time to log on to your network after you establish a connection, you may have many persistent network connections. You could remove all persistent connections by typing **net use /persistent=no** at the command line, or add **autorestore=no** and **saveconnections=no** in the [netshell] section of LANMAN.INI, or you could save only the connections you set up at login by typing **net use /persistent:save**. If this doesn't improve logon performance, check with your network administrator.

### Error Codes

This section lists the error codes sent by **rasdial**, the command-line version of Remote Access service. If you are calling from the MS-DOS command line, you can use the error level returned to look up the cause of the error in the following table. Error codes that are not self-explanatory are followed by a description.

<b>Error Code</b>	<b>Error Level</b>	<b>Description</b>
ERR_USEDPORT	612	The port is already in use.
ERR_BADBAUD	615	The baud rate cannot be set for the port.
ERR_NOPORT	620	The port is already in use.
ERR_CONNECTION_TIMEOUT	631	A timeout occurred while trying to establish a connection.
ERR_REMOTE_DISCONNECTED	632	The remote side has been disconnected.
ERR_HARDWARE_FAILURE	633	Hardware (the modem most probably) has failed.
ERR_MODEM_NOT_RESPONDING	640	The modem did not echo back the string or did not respond to the string with something like OK.
ERR_MODEMS_INI_FILE_CORRUPTED	642	
ERR_UNEXPECTED_MODEM_STRING	643	A modem string not listed in the MODEMS.INF file was returned.
ERR_COULD_NOT_OPEN_MODEMS_INI	644	
ERR_INVALID_MODEM_COMMAND	645	
ERR_NULL_PHONENUMBER	646	
ERR_SYNTAX_ERROR	648	
ERR_WANTSR_NOT_LOADED	652	Because rasload was not executed before attempting a connection, a TSR program required by RAS was not loaded.
ERR_INVALID_USERNAME	653	

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<b>Error Code</b>	<b>Error Level</b>	<b>Description</b>
ERR_INVALID_PASSWORD	654	
ERR_WKSTA_NOT_STARTED	664	
ERR_PHONEBOOK_EMPTY	665	
ERR_CANNOT_GET_LANA	669	A configuration problem exists. Run Setup again.
ERR_INVALID_PHONE_NUMBER	668	
ERR_CANNOT_BIND_LANA	670	A configuration problem exists. Unload NetBEUI and start again. If the problem persists, reinstall RAS.
ERR_CANNOT_UNBIND_LANA	671	
ERR_NOT_AUTHENTICATED	672	
ERR_COULD_NOT_OPEN_COMDEV_INI	675	
ERR_COULD_NOT_OPEN_PHONE_INI	676	
ERR_CORRUPT_COMDEVINI_ENTRY	677	
ERR_CORRUPT_PHONEINI_ENTRY	678	
ERR_ENTRY_NOT_FOUND	682	
ERR_CORRUPT_COMDEVINI	683	
ERR_CONNECTION_EXISTS	684	
ERR_SERVER_NOT_RESPONDING	685	
ERR_TOO_MANY_INITIAL_NAMES	686	



<b>Error Code</b>	<b>Error Level</b>	<b>Description</b>
ERR_CANNOT_GET_COMPUTERNAME	687	The user is running a LAN Manager Basic workstation. Either install LAN Manager Enhanced or specify the computer name when starting the Workstation service.
ERR_MSG_ALIAS_NOT_ADDED	689	
ERR_NAME_OUT_OF_RESOURCES	690	The RAS server does not have enough resources to add all the NetBIOS names for the client machine. Ask the network administrator to increase NetBIOS resources on the server.
ERR_NAME_ADD_CONFLICT	692	
ERR_NO_DIALIN_PERM	694	
ERR_LISTEN_TIMEOUT	695	
MODEM_RC_NO_CARRIER	6101	
MODEM_RC_NO_DIALTONE	6102	
MODEM_RC_NO_ANSWER	6103	
MODEM_RC_BUSY	6104	
MODEM_RC_LOOP	6105	
MODEM_RC_ERROR	6106	Your modem returned a generic error code. Redial.
ERR_CANNOT_OPEN_PAD_INI	6112	
ERR_PAD_INI_FILE_CORRUPTED	6113	
ERR_UNEXPECTED_PAD_STRING	6114	The PAD responded with a string not recognized by RAS.

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<b>Error Code</b>	<b>Error Level</b>	<b>Description</b>
ERR_PAD_NOT_RESPONDING	6115	
ERR_NULL_X25ADD	6116	No X.25 address was supplied to make the connection.
PAD_RC_ERROR	6117	The PAD returned a string denoting an error condition.

---

## Modems

This section includes information on using nonsupported modems and modifying your modem configuration file, MODEMS.INF, which contains information describing each modem type supported by RAS. You should not modify this file except to add sections for modems that are not already supported.

### Using Nonsupported Modems

If you have a modem that is not supported by RAS, try using the settings for a modem that is supported. If you are unable to find a modem setting that is compatible, you can modify your MODEMS.INF file. Consult your modem manuals or modem manufacturer for further help. This section includes information to help you modify your MODEMS.INF file.

### Understanding MODEMS.INF

The MODEMS.INF file lists all the modems supported by RAS, along with the initialization, dial, and listen command strings each modem needs for correct operation. When you select a modem during RAS installation, the Setup program associates the selected modem with the specified communication port. RAS connection utilities read MODEMS.INF to obtain the command strings for the modem associated with each communication port.

---

**NOTE:**

The MODEMS.INF file is different for MS-DOS client workstations than for Windows NT workstations or Windows NT Advanced Servers. Use the MODEM.INF information in this chapter, rather than the information in the Windows NT manuals, even if you are connecting to a Windows NT network.

The MODEMS.INF file consists of two main parts:

- A [**default**] section
- Individual sections for each supported modem

## Using Remote Access Service

### Modems

The **[default]** section contains command strings shared in common by most supported modems. The sections for individual modems contain command strings that differ from those in the **[default]** section.

The following MODEMS.INF listing includes introductory comments, the complete **[default]** section, and two sample sections for particular modems.

```
#-----  
# Some normal commands used. Where the commands are different for a  
# particular modem, the new/different commands are listed under the  
# section for that specific modem.  
#-----  
# &F Recall factory settings  
# L1 Low speaker volume  
# &C1 Track presence of data carrier  
# &D2 Hang up and disable autoanswer when DTR goes from ON to OFF  
# Q0 Modem returns result codes  
# V1 Verbose (English words) return codes  
# E1 Enable character echo in command state  
# S7 Wait time for carrier  
# &Q0 Async connection  
# S0 Answer on ring number  
# S2 Escape character  
#-----  
[Default]  
MAXBAUD = 2400  
  
[Default.INIT]  
  
[Default.INIT.COMMAND]  
COMMAND = AT&F &C1 &D2 Q0 v1 S0=0 S2=128 S7=55*cr  
  
[Default.INIT.RESPONSE]  
OK = *cr*lfOK*cr*lf  
ERROR = *cr*lfERROR*cr*lf  
  
[Default.LISTEN]  
  
[Default.LISTEN.COMMAND]  
COMMAND = *cr*ATS0=1*cr  
  
[Default.LISTEN.RESPONSE]  
OK = *cr*lfOK*cr*lf  
ERROR = *cr*lfERROR*cr*lf  
  
[Default.LISTEN.RESPONSE]  
LOOP = *cr*lfring*cr*lf  
CONNECT = *cr*lfCONNECT*blank*baudrate*cr*lf  
NO_CARRIER = *cr*lfNO*blankCarrier*lf  
  
[Default.DIAL]  
  
[Default.DIAL.COMMAND]  
COMMAND = ATDT*phonenumber*cr  
  
[Default.DIAL.RESPONSE]  
CONNECT = *cr*lf  
CONNECT*blank*baudrate  
CONNECT = *cr*lfPLEASE*blankSET*blankTO*blank*baudrate*cr*lf  
CONNECT = *cr*lfCONNECT
```

```

ERROR = *cr*lfERROR*cr*lf
LOOP = *cr*lfRINGING*cr*lf
NO_CARRIER = *cr*lfNO*blankCARRIER*cr*lf
NO_CARRIER = *cr*lfVOICE*cr*lf
NO_DIALTONE = *cr*lfNO*blankDIAL*blankTONE*cr*lf
NO_DIALTONE = *cr*lfNO*blank*DIALTONE*cr*lf
BUSY = *cr*lfBUSY*cr*lf
NO_ANSWER = *cr*lfNO*blankANSWER*cr*lf

#-----
[Hayes_V_Series_9600]
# &Q5          -- Error control connection
# S36=1        -- Fallback to async, no speed buffering
MAXBAUD       = 9600

[Hayes_V_9600.INIT]

[Hayes_V_Series_9600.INIT.COMMAND]
COMMAND       = AT&F &C1 &D2 Q0) V1 S0=0 S2=128 S7=55 &Q5 S36=1*cr

[Hayes_V_Series_9600.INIT.RESPONSE]
OK            = *cr*lfOK*cr*lf
ERROR        = *cr*lfERROR*cr*lf
#-----

[Intel_9600EX]
# \N1 Direct Mode
# Command line length cannot exceed 40
MAXBAUD = 9600
[Intel_9600EX.INIT]
[Intel_9600EX.COMMAND]
command = AT&F&C1&D2 V1 S0=0 S2=128 S7=55 &Q0 \N1*cr

[Intel_9600EX.INIT.RESPONSE]
OK = *cr*lfOK*cr*lf
ERROR = *cr*lfERROR*cr*lf
#-----

```

In the MODEMS.INF file, a pound sign (#) preceding a line indicates a comment, which the Setup program ignores. Asterisks (\*) are escape characters that precede macros. These macros and the functions they perform are listed in the following table:

Macro	Function
baudrate	Inserts baud rate
blank	Inserts a blank character
cr	Inserts a carriage return
lf	Inserts a line feed
phonenumber	Inserts phone number

## Modems

When you select a modem during RAS installation, the Setup program looks for a section with the name [modemname.INIT]. If it does not find one, it uses the initialization strings defined in the [default] section.

For example, the Hayes Smartmodem 2400™ uses the same set of command strings as listed in the [default] section. Therefore, the only line in the [Hayes\_Smartmodem\_2400] section is the MAXBAUD line.

```
#-----  
[Hayes_Smartmodem_2400] MAXBAUD = 2400
```

The Intel\_9600EX modem, however, uses different initialization strings from those shown in the default section. Therefore, these strings are defined separately in the [Intel\_9600EX] section.

```
#-----  
[Intel_9600EX]  
# \N1 Direct Mode  
# Command line length cannot exceed 40  
MAXBAUD = 9600  
[Intel_9600EX.INIT]  
[Intel_9600EX.COMMAND]  
command = AT&F&C1&D2 V1 S0=0 S2=128 S7=55 &Q0 \N1*cr  
  
[Intel_9600EX.INIT.RESPONSE]  
OK = *cr*lfOK*cr*lf  
ERROR = *cr*lfERROR*cr*lf  
#-----
```

Because the Intel\_9600EX modem uses the LISTEN and DIAL strings listed in the [default] section, only the INIT strings need to be listed in the [Intel\_9600EX] section.

If a modem's command strings are identical to those already listed for another modem, the name of the latter modem can be used as an alias for the former. For example, the MODEMS.INF section for Hayes\_Ultra reads:

```
#-----  
[Hayes_Ultra]  
MAXBAUD = 9600  
Alias=Hayes_V_Series_9600
```

The Alias line tells the Setup program that the Hayes Ultra modem uses the same command set as the Hayes V Series 9600 modem.

### Adding a New Modem to MODEMS.INF

---

**NOTE:**

Microsoft Product Support Services only supports the version of MODEMS.INF that ships with Microsoft LAN Manager Remote Access service. If you modify the file and your new modem does not work, restore the original version of the file, and use one of the modems listed earlier in this appendix.

If you are using a modem that is not explicitly supported in MODEMS.INF, you can append a new section containing the command strings required by your modem. The name of the section should be the name of your modem and should be enclosed in brackets. If the **[default]** section does not contain the command strings required by your modem, use the macros defined in the preceding section to define new ones. Examples of their use are shown in the listing of the MODEMS.INF file.

---

**NOTE:**

When adding a new section to MODEMS.INF, append it to the end of the file, rather than inserting it somewhere in the middle. This precaution reduces the chances of inadvertently corrupting existing entries.

To modify MODEMS.INF for a new modem

- 1 Back up your existing MODEMS.INF file.
- 2 Type the section title, using the format [modemname].
- 3 Add a MAXBAUD line listing the modem's maximum baud rate. This is the computer-to-modem speed, not the modem-to-modem speed.

Operating System	Processor	Maximum baud rate*
MS-DOS and Microsoft Windows	8086	2400
	80286	9600
	80386	19200
	80486	38400

\*May vary depending on CPU speed, memory speed, software running, and other factors.

---

**NOTE:**

Every modem section must contain a line reading:

MAXBAUD = x

where x is the baud rate of the modem. The MAXBAUD line must be included, even if the modem is using the same baud rate as that listed in the **[default]** section. Whether other entries are included depends on whether a modem's init, listen, or dial strings match those in the **[default]** section. If they match, they do not have to be listed again in the modem's own section.

- 1 Check to see if the **[modem\_name.init]** section for the modem needs to be different from the one listed in the **[default]** section. If it does, then add an **[init]** section to the section for the new modem, below the MAXBAUD line.
- 2 If you changed the **[modem\_name.init]** section, then repeat the previous step for the **[modem\_name.listen]** and **[modem\_name.dial]** sections. Normally, you should not have to change these sections.

Being meticulous when you create a new modem section can save debugging time later. It is recommended that you document your work so that others can quickly understand the entries in case you are not available, or so you can remember a year later what you did and why you did it. Be sure to type a pound sign (#) at the beginning of each comment line.

### MODEMS.INF Macros

The following macros can be used in the MODEMS.INF file:

Macro	Function
hxx	Inserts a character represented by the next two hexadecimal digits. For example, to send Ctrl+P (ASCII character 16), use *h10 (10 hex is 16 decimal).
w (wildcard character)	Matches any one character coming from the modem.

### Modifying Your Modem Initialization Strings

If you are adding a new modem, you may need to modify the modem initialization strings in the MODEMS.INF file.



Refer to your modem manual for the specific commands you use to do the following:

- Recall factory settings.
- Track presence of data-carrier-detect (DCD high when carrier detected).
- Hang up and disable auto-answer when DTR goes from ON to OFF (high to low).
- Return result codes.
- Return verbose codes.
- Enable character echo in command state.
- Wait approximately 55 seconds for carrier.
- Make normal asynchronous connection (only needed if your modem supports synchronous connections).
- Disable error control (disable MNP4, V42, or other error control scheme).
- Disable compression (disable MNP5, V.42bis, or other compression scheme).
- Disable +++ escape sequence.
- Disable software and hardware flow control.
- Modem Listen String (The specific command you use to make the modem answer after one ring, needed for RAS servers and also for client workstations that will be using callback.)

### **Error Control and Compression**

RAS does not support error control and compression for the following reasons:

- RAS for MS-DOS does not support Hardware Flow Control. Flow Control is needed to regulate data transfer when compression is enabled.
- Not all processors can accommodate the 19200 or greater baud rate required to make compression worthwhile at 9600 baud (see the table in the section, “Adding a New Modem to MODEMS.INF,” earlier in this appendix). Note that the baud rate specified in the MAXBAUD parameter of MODEMS.INF refers to the computer-to-modem speed, not the modem-to-modem speed.
- Not all modems can accommodate the 19200 or greater baud rate required to enable compression. A 16450 or higher serial port chip is required.

If you decide to enable error control and/or compression, first check the following:

- Make sure your workstation can accommodate the higher baud rates required for compression. Your RAS client workstation must have a 80386 or higher processor and also have 16450 or higher serial port chip installed.
- Make sure your RAS server has a multiport adapter installed, relieving the main processor of some of the interrupt processing load.
- Make sure your modem has the large buffers needed to increase the DTE speed without enabling flow control.
- Make sure you have identical or compatible modem types on the server and client workstations.
- Make sure your telephone line has little or no static. This minimizes the impact of redundant error control.

To enable modem error correction and/or compression

- 1 Set the MAXBAUD parameter for your modem in the MODEMS.INF file to the maximum baud rate at which you will be communicating. Valid baud rates are 1200, 2400, 4800, 9600, 19200, and 38400.
- 2 For MS-DOS workstations running LAN Manager Enhanced, change digit 14 of the **wrkheuristics** line in the LANMAN.INI file from 1 to 0. This causes the LAN Manager workstation to transfer data in 64K blocks. This large block size ensures a smooth, constant flow of data from the computer to the modem. The modem's compression buffers will fill up quickly, thereby minimizing data transmission delays.

---

**NOTE:**

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Microsoft cannot guarantee proper functionality at baud rates higher than those indicated in the default MAXBAUD = line of your MODEMS.INF file.

---

## Configuration Files

During installation, the RAS Setup program modifies existing MS-DOS and LAN Manager configuration files to enable or to optimize performance. For MS-DOS and Windows client workstations, the RAS Setup program modifies the CONFIG.SYS, LANMAN.INI, and PROTOCOL.INI files.

### CONFIG.SYS

The RAS Setup program adds the following lines to an MS-DOS client's CONFIG.SYS file:

```
DEVICE = C:\LANMAN.DOS\DRIVERS\ASYNC\ASYMAC\ASYMAC.DOS
```

If necessary, the Setup program also adds the MS-DOS protocol manager, PROTMAN.DOS, to the device list. This line is in the form:

```
DEVICE = 1C:\LANMAN.DOS\DRIVERS\PROTMAN\PROTMAN.DOS /i:lanroot
```

### LANMAN.INI

The RAS Setup program modifies the `wrkheuristics` and `wrknets` entries of the [workstation] section as follows:

```
wrkheuristics = xxxxxxxx00xxxx1xxxxxxxxxxxxxxxxxxxxx  
wrknets = netx, nety,...
```

### PROTOCOL.INI

The RAS Setup program adds the following lines to the client's PROTOCOL.INI file:

```
[ASYBEUI_XIF]  
  DRIVERNAME = ASYBEUI  
  BINDINGS = "ASY_NIF", "ASY_NIF2"  
  LOAD = ASYBEUI,VCOMMIO[U],WANTSR[U]  
  UNLOAD = "WANTSR /U[C]","VCOMMIO /U[C]", "ASYBEUI[D]"  
[ASY_NIF1]  
  DRIVERNAME = ASYMAC$  
[ASY_NIF2]  
  DRIVERNAME = ASYMAC$
```

Using Remote Access Service  
Configuration Files

The Setup program adds one BINDINGS entry and one [ASY\_NIFx] section for each COM port in the system, where x is the COM port number associated with each instance of the driver.

---

## Tuning

This section includes modifications you can make that will increase the performance of RAS. You can tune RAS performance on your system by modifying LANMAN.INI parameters.

### Modifying LANMAN.INI on MS-DOS-based Workstations

On a LAN Manager Enhanced workstation, RAS modifies the **wrkheuristics** entry of the [**workstations**] section for optimal performance over a telephone line. The modified **wrkheuristics** entry reads as follows:

```
wrkheuristics = xxxxxxxx00x6xx1xxxxxxxxxxxxxxxxxxxx
```

These settings are optimized for RAS. They are different from those for LAN Manager networks without RAS.

---

**NOTE:**

If you use your workstation as a LAN workstation as well as a RAS workstation, the RAS optimization of **wrkheuristics** will cause the computer to operate at less than optimal levels when used as a LAN workstation. Performance on the LAN will be acceptable. The following **wrkheuristics** settings are changed:

Position	Value	Meaning
8	0	Do not request oplock (opportunistic locking).
9	0	Do not use open and read.
14	1	Do not use raw read/write server message blocks.

The reasons for these settings are as follows:

- If oplock is turned on, the remote client's redirector opens files in exclusive mode and turns on the write behind, read ahead feature. If this feature is turned on and the telephone line is disconnected, data is lost. The telephone line may be disconnected by the user or by some hardware problem.
- If open and read is turned on, as soon as a user opens a file, the redirector reads data from that file before the user explicitly requests it to do so. This operation yields better system response on the LAN, but on an asynchronous line it unnecessarily retards performance in cases where the user does not want to read data

## Using Remote Access Service Tuning

from the file.

- If the client uses raw I/O, file transfer occurs in 64K packets. Sending 64K packets over an asynchronous line is not advisable because other transactions will be delayed, and additional memory will be required at the RAS server to handle the large packets.

## Compatibility Issues

RAS supports only version 2.0 of Stacker. If you are running Stacker version 1.1, upgrade to version 2.0. If your network directory (for example, LANMAN.DOS, WINDOWS, DOS, DOSNET) is on a Stacker drive, make sure that Stacker is started before the protocol manager in your CONFIG.SYS file.

Using Remote Access Service  
**Compatibility Issues**



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## Glossary

**account** See user account.

**administrator** The individual responsible for managing the local area network. Typically this person configures the network, maintains the network's shared resources and security system, creates user accounts, assigns permissions, and helps users.

**alert message** A message sent by a server to a LAN Manager Enhanced workstation informing the user of conditions that require attention.

**Alerter service** Notifies selected users and computers of administrative alerts that occur on a computer. Requires the Messenger service.

**alias** A name used to receive messages at a LAN Manager Enhanced workstation. A workstation can have up to 15 aliases, including the computername and username. An alias must be unique on the local area network.

**application program** A program used for a particular kind of work, such as word processing or database management.

**ASCII file** A standard text file.

**basic** See LAN Manager Basic.

**batch file** See batch program.

**batch program** A text file containing commands that are performed when the batch program runs. MS-DOS batch

programs always have the filename extension .BAT. A batch program called AUTOEXEC.BAT runs when you start MS-DOS.

**baud** This is a unit for measuring the speed at which a modem communicates. Baud rate is often used to refer to bits per second, but that is not completely accurate. Baud rate refers to the number of times the condition of the line changes; it is equal to bits per second only if each signal corresponds to one bit of data being transmitted.

For two modems to communicate, they must use the same baud rate. If the baud rate of one modem is initially set higher than that of the other, the faster modem normally alters its baud rate to match that of the slower modem.

**branch** A segment of the directory tree, representing a directory and any subdirectories it contains.

**broadcast message** A message sent to all users in a domain or on the local area network. See also Messenger service.

**buffer** A portion of computer memory that is reserved to store data temporarily.

**callback number** The number that a Remote Access server uses to call back a user. This number can be preset by the administrator or specified by the user at the time of each call, depending on how the administrator configured the user's callback status. The callback number should be the number of the phone line to which the user's modem is connected.

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## Glossary

**callback security** A form of network security in which a Remote Access server calls a user back at a preset number after the user has made an initial connection and has been authenticated.

**check box** A small box in a dialog box that can be selected or cleared, representing an option that you can turn on or off. When a check box is selected, an X appears in the box.

**choose** To pick an item that begins an action. You often choose a command on a menu to perform a task, and you choose an icon to start an application.

**click** To position the mouse pointer on a screen element and then press and release the left mouse button. See also double-click.

**client** A computer that accesses shared network resources provided by another computer. See also client-server applications, server.

**client-server applications** Applications that use the capabilities of both your workstation (the client) and the server to perform a task. The client portion of the application is typically optimized for user interaction, whereas the server portion provides the centralized multiuser functionality.

**command** An instruction that provides the necessary information for a computer or a program to perform a specific task. You type LAN Manager Basic commands at the MS-DOS prompt. You type LAN Manager Enhanced commands at the MS-DOS prompt or

choose them from a menu on the LAN Manager Screen.

**command button** A command name enclosed in angle brackets at the bottom of the LAN Manager Screen or dialog box (for example, the Zoom button). Choosing a command button carries out a task or leads to another dialog box.

**command line** The MS-DOS prompt. See also command, prompt.

**command option** See option.

**communication port** A port on computer equipment that enables asynchronous transmission of one byte at a time. Also called a serial port.

**communication settings** Operating parameters, such as baud rate and modem type, that apply to serial ports on the computer.

**compression** A technique used to reduce the number of characters transmitted, without losing data content. The transmitting modem or computer compresses the data, and the receiving computer or modem decompresses the data back to its original state.

**computer resource** See resource.

**computername** A unique name that identifies a computer to the network. The name cannot be the same as any other computername or domain name in the network and cannot contain spaces. In a network path, a server's computername is preceded by two backslashes (for

---

## Glossary

example, \\SALES or \\MARKET.SERVE). If you are using LAN Manager Basic, the computername identifies your workstation to servers.

**configuration** The way the workstation, server, or local area network is set up to function; pertains to both hardware and software.

**connect** To assign a local devicename to a shared resource so you can use it with LAN Manager commands. See also devicename, shared resource.

**connected user** A user accessing a computer or a resource across the network.

**connection** The software link between a workstation and a shared resource. You make connections by assigning a local devicename on a workstation to a shared resource on a server. See also devicename, session, shared resource.

**continue** To restart a LAN Manager service that was paused. See also pause.

**controller** See domain controller.

**country code** A code in a user's account to specify the language in which the server sends messages.

**current focus** The server or workstation that is the focus of activity when using the LAN Manager Screen.

**cursor** The shape on the computer screen that shows you where the next character you type will appear.

**demand protocol architecture (DPA)**  
A feature of LAN Manager Enhanced that lets you load and unload protocols used to access different types of networks.

**demand loading** The loading of protocols into the computer's memory on an as-needed basis.

**destination directory** The directory to which you intend to copy or move one or more files.

**device** A piece of hardware that is attached to a computer to perform a specific function. There are two types of devices—disks and printers. See also device driver, disk device, printer device.

**device driver** Software that enables a computer to recognize and use a specific piece of hardware (device).

**devicename** The name of a device on a computer or the name of a device assigned to connect to a shared resource. The devicename is the name by which LAN Manager and the computer identify disk devices and printer devices. Two types of devicenames are used for local area network connections: disk devicenames (for example, E), and printer devicenames (for example, LPT1). See also disk device, printer device.

**dialog box** A box that appears on the LAN Manager Screen when a menu command is chosen. Dialog boxes typically present a number of options from which you can choose. Sometimes

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## Glossary

selecting an option from one dialog box causes another dialog box to appear.

**directory** Part of a structure for organizing your files on a disk. A directory can contain files and other directories (called subdirectories). See also directory tree.

**directory tree** A graphical display of a disk's directory structure. The directories on the disk are shown as a branching structure. The top-level directory is the root directory.

**disk device** A device that stores information. Disk devices are identified by their devicenames. See also devicename.

**disk directory** See directory.

**disk drive devicename** See devicename, disk device.

**distributed application** See client-server applications.

**domain** In LAN Manager or Windows NT Advanced Server, a group of devices, servers, and workstations grouped together to simplify network administration and security. Each domain has a unique name. Being logged on in one domain does not limit access to resources in other domains to which you have access. See also logon domain, other domains, primary domain controller, workstation domain.

**domain controller** For a Windows NT Advanced Server domain, the server that

maintains the security policy and the master database for a domain and authenticates domain logons. For a LAN Manager domain, the server that verifies a user is allowed to log on in a domain and maintains a master record of user accounts. See also primary domain controller, server, user account.

**domain name** The name by which a domain is known to the network.

**double-click** To position the mouse pointer on a screen element, and then quickly press and release a mouse button twice without moving the mouse. Double-clicking carries out an action, such as starting an application.

**Enhanced** See LAN Manager Enhanced.

**error detection** A technique for detecting when data is lost during transmission. This enables the software to recover lost data by asking the transmitting computer to retransmit the data.

**error log** A file that stores error messages received by a LAN Manager Enhanced workstation.

**error message** A message that appears on your computer screen when Windows NT, LAN Manager, or MS-DOS detects a problem while trying to process an operation or a command.

**extension** The period (.) and one to three characters at the end of a filename. An extension usually indicates the type of file or directory.

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## Glossary

**field** One of the five areas within a dialog box. See also check box, command button, dialog box, list box, option button, text box.

**file attribute** Special properties of a file. The options are read-only and archive. Assigned to files and directories using the MS-DOS **attrib** command.

**file system** In an operating system, the overall structure in which files are named, stored, and organized.

**filename** A unique name for a file. MS-DOS filenames can be from one to eight characters in length and can be followed by a filename extension consisting of a period (.) and one to three characters. See also filename extension.

**filename extension** A period (.) and one to three characters that can be appended to a filename. See also filename.

**forwarding messages** See message forwarding.

**group** A set of users who share common permissions for one or more shared resources. See also user account.

**groupname** The name assigned by an administrator to a group of users.

**high-performance file system** See HPFS.

**home directory** A directory on a server that is accessible to the user and contains files and programs for that user. A home

directory can be assigned to an individual user or can be shared by many users.

**HPFS** High-performance file system (HPFS); primarily used with the OS/2 operating system version 1.2 or later. It supports long filenames but does not provide security.

**HPFS file system** See HPFS.

**initialization file** A file used to establish your own configuration for a program. For example, the LANMAN.INI file is used by the LAN Manager software to determine default settings for network services. See also LANMAN.INI.

**LAN** See local area network (LAN).

**LAN Manager** A software program that expands the features of MS-DOS to enable computers to join a local area network. See also local area network (LAN).

**LAN Manager Basic** A version of LAN Manager that enables an MS-DOS computer to connect to local area network directories and printers, and to print jobs over the network. With LAN Manager Basic, network tasks can be done from the command line only.

**LAN Manager Enhanced** A version of LAN Manager that enables an MS-DOS computer to connect to local area network directories and printers, print jobs over the network, send and receive network messages, and automatically connect to network resources. With

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## Glossary

LAN Manager Enhanced, network tasks can be done from the command line and from the LAN Manager Screen.

**LAN Manager Screen** A menu-oriented, full-screen interface for LAN Manager Enhanced. With the LAN Manager Screen, you can use LAN Manager Enhanced without having to memorize command syntax.

**LANMAN.INI** The initialization file that determines default settings for LAN Manager servers and workstations on the local area network.

**list box** In a dialog box, a type of box that lists available choices — for example, a list of all files in a directory. If all the choices do not fit in the list box, there is a scroll bar.

**local** Refers to a resource attached to a user's computer. See also remote.

**local area network (LAN)** A group of personal computers and other hardware, attached by cable, so that users can share information and equipment.

**local devicename** The devicename at your workstation that is assigned to a shared queue. See also devicename.

**local printer** A printer that is directly connected to one of the ports on your computer.

**local resource** See local.

**log** A file containing a historical list of information. See also error log, message

log.

**log off** The process of disconnecting a LAN Manager Enhanced workstation from its server to cancel connections to shared resources. The logoff process does not stop LAN Manager Enhanced services.

**log on** With LAN Manager Enhanced, the process of connecting a workstation to a server and its shared resources. In the logon process, you supply your username and password, which identify you as a workstation and as a member of a domain. See also domain, password, username.

**logon domain** A LAN Manager or Windows NT Advanced Server domain (other than the workstation domain) that can be specified when you log on with LAN Manager Enhanced. See also domain, other domains, workstation domain.

**logon hours** For Windows NT Advanced Server and LAN Manager networks, a definition of the days and hours during which a user account can connect to a server. When a user is connected to a server and the logon hours are exceeded, the user will either be disconnected from all server connections or will be allowed to remain connected but denied any new connections.

**logon password** The password specified when you log on at a LAN Manager Enhanced workstation. See also log on, password.

**logon script** Typically a batch file, a

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## Glossary

**logon script** runs automatically every time the user logs on. It can be used to configure a user's working environment at every logon, and it allows an administrator to affect a user's environment without managing all aspects of it. A logon script can be assigned to one or more user accounts.

**logon server** The server that verifies your username and password when you log on to the network.

**menu** A set of related commands accessible from the LAN Manager Screen.

**menu bar** The horizontal bar at the top of the LAN Manager Screen that contains menus from which you choose commands.

**menu command** A command you can choose from a menu on the LAN Manager Screen. See also LAN Manager Screen, menu, menu bar.

**message alias** See alias.

**message box** A box that displays messages received at a LAN Manager Enhanced workstation when the Messenger service and the Netpopup or the Minipop service are running. See also Messenger service, Netpopup service.

**message buffer** A buffer used to hold incoming messages. The size of this buffer determines the size of messages that the workstation can receive. See also buffer.

**message forwarding** To use aliases to reroute messages from one LAN Manager Enhanced workstation to another. See also alias.

**message line** Text displayed at the bottom of the LAN Manager Screen that provides information about the current menu, command, dialog box, or task. See also LAN Manager Screen.

**message log** A LAN Manager Enhanced file used to store a workstation's messages as they are received.

**message logging** To save a LAN Manager Enhanced workstation's messages in a file. See also error log, message log.

**Messenger service** A LAN Manager Enhanced service that enables a workstation to receive messages from other network users and from the Alerter service. This service can also store messages in a log file. See also Netpopup service.

**Microsoft Windows** An operating system that permits you to run several programs at once, and to move easily from one program to another.

**modem** A device that allows computer information to be transmitted and received over a telephone line. The transmitting modem translates digital computer data into analog signals that can be carried on a phone line. The receiving modem translates the analog signals back into digital form.

---

## Glossary

**MS-DOS** Microsoft Disk Operating System. This is the operating system on which LAN Manager Basic and Enhanced run.

**MS-DOS prompt** See prompt.

**named pipe** A connection used to transfer data between separate processes, usually on separate computers. Named pipes are the foundation of interprocess communication (IPC).

**Net Logon service** The service that implements logon security. This service is called Net Logon on Windows NT Advanced Servers and Netlogon on LAN Manager servers. When a server in a domain runs this service, the username and password supplied by each user who attempts to log on in the domain are checked.

**Netpopup service** A LAN Manager Enhanced service that displays messages on your computer screen as they arrive from other local area network users or from LAN Manager. The Netpopup service requires that the Messenger service be running. Users of the Windows operating system may use Minipop instead of Netpopup. See also Messenger service.

**NetWare Connectivity** A LAN Manager feature that lets a computer run both LAN Manager and Novell NetWare so that one computer can act as a workstation on a Windows NT or LAN Manager network and a NetWare network at the same time.

**network device driver** Software that

coordinates communication between the network adapter and the computer's hardware and other software, controlling the physical function of the network adapters.

**network directory** See shared directory.

**network path** The computername of a server followed by the sharename of a shared resource. A server's computername is preceded by two backslashes (\\), and a sharename is preceded by one backslash (for example, \\SALES\REPORTS). You connect your workstation to a shared resource by specifying its network path. See also computername, resource, sharename.

**network resource** A resource that is available to local area network users. See also resource, shared resource.

**network security** A system used to protect network resources from unauthorized access.

**NT** See Windows NT.

**NT file system** See NTFS.

**NTFS** An advanced file system designed for use specifically within the Windows NT operating system. It supports file system recovery, extremely large storage media, and various features for the POSIX subsystem. It also supports object-oriented applications by treating all files as objects with user-defined and system-defined attributes.



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## Glossary

**null modem** Special cabling that eliminates the need for modems for asynchronous communications between two computers over short distances.

**option** Part of a command that can modify how the command or service works but which is not required.

**option button** A button in a LAN Manager Screen dialog box used to select one option from a group of options.

**other domains** Domains other than the logon and workstation domains of which your LAN Manager Enhanced workstation is a member, and which you have specified as domains you want to be able to view. See also domain, logon domain, workstation domain.

**password** A security measure used to restrict logons to user accounts and access to computer systems and resources. A password is a unique string of characters that must be provided before a logon or an access is authorized. The password, together with the username, establishes the user's identity on the local area network. See also logon password.

**path** Specifies the location of a file within the directory tree. For example, to specify the path of a file named README.WRI located in the WINDOWS directory on drive C, you would type c:\windows\readme.wri.

**pathname** The name of one or more directories followed by a filename. For example, the pathname of the

MONTHLY.RPT file in the REPORTS\ACCT\NORTH directory is REPORTS\ACCT\NORTH\MONTHLY.RPT.

**pause** To suspend a LAN Manager service. See also continue.

**permission** A setting on a shared resource that defines the type(s) of action a user can take with a shared resource.

**phone book** A file that associates names with telephone numbers, COM ports, and baud rates.

**phone book entry** A record in the Phone Book that associates a name with a telephone number, COM port, and baud rate.

**pointer** A small graphic symbol that indicates a user's location on the screen. The mouse pointer on the LAN Manager Screen is a small lighted rectangle.

**pool** A group of similar devices that receives requests from the same queue.

**port** A connection or socket used to connect a device, such as a printer, monitor, or modem, to your computer. Information is sent from your computer to the device through a cable.

**preset-number callback** A form of security in which a Remote Access server verifies users by calling them back at numbers supplied by the network administrator at the time user permissions are granted. A preset callback number can only be changed by

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## Glossary

the network administrator. This ensures that no one can borrow a user's password and connect to the server from a location other than the user's normal one.

**primary domain controller** The LAN Manager server at which the master copy of a domain's user accounts database is maintained. The primary domain controller also validates logon requests. See also Net Logon service.

**print job** A file sent to a printer queue to be printed.

**printer device** Any device that prints information. Printer devices are identified by their devicenames. See also devicename.

**printer driver** A program that controls how your computer and printer interact.

**printer queue** A "waiting line" that manages and routes print jobs.

**privilege** The level assigned for each user that defines the range of action a user can have on the local area network.

**program file** A file that starts an application or program. A program file has an .EXE, .PIF, .COM, or .BAT filename extension.

**prompt** The symbol that tells you an operating system or program is ready to receive a command. You type commands at the prompt.

**remote** Refers to a server, workstation, or resource that is not located where you

are currently working. See also local.

**Remote Access server** Any Windows NT computer or LAN Manager server that is configured to run the Remote Access service.

**Remote Access service** A service allowing users to connect to Windows NT or LAN Manager networks from long or short distances, using modems and telephone lines instead of network cable connections.

**remote computer** See remote.

**remote local area network** The local area network to which you are connected by means of a phone line.

**remote name** The network path used to connect a devicename to a shared resource. See also devicename and network path.

**remote program request** A request for access to a program that is not resident on the computer where you are currently working.

**remote server** See remote.

**resource** Any part of a computer system or local area network, such as a disk drive, directory, printer or memory that can be allotted to a program or process while it is running. See also shared resource.

**root directory** See directory tree.

**run** To start a program or command.

---

## Glossary

**scroll** To move through text or graphics (up, down, left, or right) in order to See parts of a file or dialog box that cannot fit on the screen.

**scroll bar** A bar that appears at the right and/or bottom edge of a window or list box whose contents are not completely visible. Each scroll bar contains two scroll arrows and a scroll box, which enable you to scroll through the contents of the window or list box.

**scroll box** The small box superimposed on the scroll bar that appears at the right of some LAN Manager Screen list boxes. The scroll box reflects the position of the information within the window in relation to the total contents of the list. See also scroll bar.

**serial port** A port on computer equipment that enables asynchronous transmission of data characters one bit at a time. Also called a communication port.

**server** A computer on a local area network that controls access to resources such as files and printers. A LAN Manager server can also function as a workstation. In Windows NT Advanced Server domains, a server is a computer that receives a copy of the domain's security policy and domain database, and authenticates network logons. See also domain controller, primary domain controller.

**service** A process that performs a specific system function and often provides an application programming interface (API) for other processes to

call. The main components of LAN Manager are the LAN Manager services.

**session** A link between a workstation and a server. A session consists of one or more connections to shared resources. See also connection.

**set-by-caller callback** A form of callback in which the user supplies the callback number at the time the call is made. It allows traveling business users, for example, to reverse long-distance telephone charges. The server prompts the user for the user's telephone number and then calls the user back at that number.

**Setup program** A program that installs LAN Manager Enhanced or Basic software on a workstation.

**share** To make resources, such as directories and printers, available to network users.

**shared directory** A directory that network users can connect to.

**shared printer** See printer queue.

**shared printer queue** See printer queue.

**shared resource** A resource available to users of the local area network. See also resource.

**sharename** A name that identifies a shared resource. See also computername, shared resource.

---

## Glossary

**sharing** The process by which resources are made available to local area network users.

**software** The programs, routines, or instructions written in a computer language that instruct the computer to perform one or more tasks.

**source directory** The directory that contains the file or files you intend to copy or move.

**spooled queue** A queue used with printers that are configured with a parallel interface. Spooled queues are identified with devicenames LPT1 through LPT9. See also devicename, printer queue, unspooled queue.

**string** Any contiguous set of alphabetic and numeric characters that will be treated as a unit.

**subdirectory** A directory within a directory.

**text box** An area in a LAN Manager Screen dialog box where you type information. The text box may or may not contain text when it appears.

**text file** A file containing only letters, numbers, and symbols. A text file contains no formatting information, except possibly linefeeds and carriage returns. A text file is an ASCII file.

**text-only** An ASCII file that contains no formatting.

**time-out** A condition where an

expected character is not received in time. When this condition occurs, the software assumes that the data has been lost and requests it to be resent.

**title bar** The area at the top of a LAN Manager Screen dialog box where its title appears.

**touch-tone dialing** A form of dialing using multiple-tone signaling. The user hears a series of tones (beeps) when dialing. Push-button telephones usually use touch-tone dialing.

**trust** See trust relationship.

**trust relationship** Links between Windows NT Advanced Server domains that enable pass-through authentication, in which a user has only one user account in one domain yet can access the entire network. User accounts and global groups defined in a trusted domain can be given rights and resource permissions in a trusting domain, even though those accounts don't exist in the trusting domain's database. A trusting domain honors the logon authentications of a trusted domain.

**unspooled queue** A queue used with printers that are configured with a serial interface. Unspooled queues are identified with devicenames COM1 through COM9. LAN Manager for UNIX Systems does not support unspooled queues. See also devicename, printer queue, spooled queue.

**user** Someone who uses the local area network.

---

## Glossary

**user account** The record on a Windows NT Advanced Server or LAN Manager server that contains information about an authorized user, including his or her name, password, and permissions, as determined by the administrator.

**username** A unique name identifying a user account on the network. See also user account.

**wildcard** A character that represents one or more characters. The question mark (?) wildcard can be used to represent any single character, and the asterisk (\*) wildcard can be used to represent any character or group of characters that might match that position in other filenames.

**Windows** See Microsoft Windows.

**Windows NT** The portable, secure, 32-bit, preemptive multitasking member of the Microsoft Windows operating system family.

**Windows NT Advanced Server** A superset of Windows NT, Windows NT Advanced Server provides centralized management and security, advanced fault tolerance and additional connectivity.

**workstation** A computer from which a person uses word processing, spreadsheet, database, and other types of applications to accomplish work, taking advantage of resources shared on the local area network.

**workstation domain** The Windows NT or LAN Manager domain

into which a LAN Manager Enhanced workstation logs on unless another domain is specified. See also domain, logon domain, other domains.

**workstation resource** A resource that is attached to or part of a user's computer (for example, a local printer). See also local.

**Workstation service** A LAN Manager service that enables a computer to use network resources and services. This service must be running for any other service to run.

Glossary  
Compatibility Issues

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