

# Using the TCP/IP Applications

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This chapter is an introduction to the most commonly used Cisco TCP/IP Suite applications and brief descriptions of the others. For detailed information about other features of these applications and information about setting application options, see the online help for the application.

The examples in this chapter use a workstation running Windows 95 or Windows NT. On workstations running Windows 3.x, Cisco TCP/IP Suite programs look similar.

Topics covered in this chapter are:

- Starting Cisco TCP/IP Suite Applications
- Reading and Sending Email Using Netscape Mail
- Browsing the World Wide Web Using Netscape Navigator
- Reading Newsgroups Using Netscape News
- Logging into Hosts Using Telnet
- Retrieving Files from an FTP Server Using the FTP Client
- Connecting to NFS Network Drives and Printers
- Connecting to Networks Over a Modem Using Dialer
- Other Cisco TCP/IP Suite Components

## Starting Cisco TCP/IP Suite Applications

In Windows 95 and Windows NT, start Cisco TCP/IP Suite applications by selecting them from the Cisco Suite 100 program group on the Start menu.

In Windows 3.x, start Cisco TCP/IP Suite applications by double-clicking their icons in the Cisco Suite 100 program group in the Program Manager.



In several applications, you can also start the Net Tools application by clicking the Net Tools button on the tool bar. The Net Tools application includes several utilities, such as Ping, Finger, Host Lookup, and TraceRoute, that you might find useful while using those applications.

## Reading and Sending Email Using Netscape Mail



The Netscape Navigator includes an email program called Netscape Mail. You can use Netscape Mail for all of your email requirements. However, if you already have email software that uses WinSock, you should be able to continue using that software with Cisco TCP/IP Suite.

### Configuring Netscape Mail

Before you can use Netscape Mail to send and receive mail, you must configure Netscape Mail so that it knows where to get your mail and where to send it.

To configure Netscape Mail:

- Step 1** Start Netscape Navigator.
- Step 2** Choose **Options>Mail and News Preferences**, and click the Servers tab.
- Step 3** Enter the fully-qualified names of your outgoing (SMTP) mail server and your incoming (POP) mail server. These servers are often the same machine. Contact your network administrator if you are not sure of the names of your mail servers.
- Step 4** Enter your account name in the POP User Name field.
- Step 5** Determine whether you want copies of your mail left on the server when Netscape Mail retrieves the mail, or whether you want the mail deleted from the server. If you are configuring your primary system, you might want to delete the

mail from the server. If you are configuring a secondary system (for example, a laptop computer or home office machine), you might want to leave mail on the server. That way, you can still access the mail from your primary system.

**Step 6** If you want Netscape Mail to check your mail automatically, click Every beside Check for Mail, and enter the number of minutes you want Netscape Mail to wait between automatic checks. Netscape Mail must be running in order to retrieve your mail automatically. If you have new mail, an exclamation point appears in the lower right-hand corner of the mail window.

**Step 7** Click the Identity tab and fill in the information about yourself. You can also add a personalized signature file to the end of your messages by entering the name of your signature file in the Signature File field. You must create the file using a text editor, such as NotePad.

There are other mail options you can set, but these are the ones required to effectively use Mail. See the Netscape online help for more information about configuring Navigator and Mail.

## Starting Netscape Mail

To start Netscape Mail, first start Netscape Navigator. You can then start Netscape Mail in these ways:

- Click the envelope icon on the right side of Navigator's status bar.
- Choose **Window>Netscape Mail**.
- Choose **File>New Mail Message** to create and send a new email message.
- Choose **File>Mail Document** to send a message attaching the file you are currently viewing.

If you use Netscape Mail more often than Netscape Navigator, you can configure Navigator so that Netscape Mail starts when you start Navigator:

**Step 1** Choose **Options>General Preferences** and click the Appearance tab (if it is not already in front).

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- Step 2** Check Netscape Mail in the Startup group. If you also want Navigator to open, leave Netscape Browser checked. Otherwise, uncheck Netscape Browser. (You can open Navigator from the Netscape Mail window by choosing **File>New Web Browser**.)

### Retrieving and Reading Email

To retrieve your mail, click the **Get Mail** button. New mail is added to the Inbox folder.

To read a piece of mail, select the Inbox (or other folder, if you have moved the mail to another folder), and click on the mail in the list of mail. The contents of the mail appears in the lower frame on the Netscape Mail window, which you can make larger by dragging the top divider upward.

When you are finished reading a piece of mail, you can delete it by selecting the message and clicking the **Delete** button. You can also move it to another folder, and out of your Inbox, by dragging the message from the message list to the folder. This lets you save the message without cluttering up your Inbox. You can create new folders by choosing **File>New Folder**.

### Sending Email

To create a new email message, click the **To:Mail** button. Enter the email address of the person you are sending the message to in the To field, and those you are copying in the CC field (if you enter more than one address in the To or CC fields, separate the addresses with commas). Then, enter a subject for the message, and finally write your message. If you want to attach a document to your message, click the **Attachment** button and choose the file or Web location (URL) that you want to attach.

Once you are finished writing your message, click the **Send** button.

You can also create mail by:

- Clicking the **Re:Mail** button when viewing a message to reply to the sender. Click the **Re:All** button to reply to the sender and copy everyone who was also sent the message.
- Clicking the **Forward** button when viewing a message to send the message to someone else. You can also add your comments to the mail.

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**Note** If you are on a machine attached to the network over a modem, you might not maintain a network connection at all times. If this is the case, you can have Netscape defer sending your mail until you specifically tell Netscape to send it. When composing your email, choose **Options>Deferred Delivery**. When you then click the **Send** button, the mail is moved to the Outbox folder. When you do connect to the network, send the mail by choosing **File>Send Mail in Outbox**.

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### Creating and Using an Address Book

An address book is a list of people, their email addresses, and a nickname you can use in the To field of an email message. If you create an address book entry for a person, you can write to them without having to remember their email address. This is especially helpful if the person has a difficult to remember or long address.

To add someone to the address book:

- If you are viewing a note from the person, choose **Message>Add to Address Book**. Netscape Mail opens the Address Book dialog so that you can enter a nickname and a description for the user.
- Choose **Window>Address Book**. You can add users by choosing **Item>Add User**. You can also create a mailing list (a single nickname for a group of people) by choosing **Item>Add List**.

To compose a message using your address book:

- When composing a message, click the **Mail To:** or **CC:** buttons. Netscape Mail opens a dialog that lets you select users and add them to the To, CC, or BCC lists for the message.
- Choose **Window>Address Book**, select the user or list, and choose **File>Mail New Message**.

## Browsing the World Wide Web Using Netscape Navigator



Use Netscape Navigator to browse HTML and other documents on the Internet's World Wide Web, or on your internal intranet. You can also use Navigator to view HTML documents on your own system.

### Browsing Web Documents

To browse, or open, a document on the Web:

- Step 1** Start Navigator.
- Step 2** Click the **Open** button, or choose **File>Open Location**.
- Step 3** Enter the name of the location. This can include a file name, but it usually is just the name of a site, which gives you the home page for that site. The name is called a Universal Resource Locator (URL), because it does not depend on the type of operating system you are using. For example, the name of the Cisco Systems home page is *http://www.cisco.com*.

Once you are viewing a page on the Web, you can go from page to page using the hyperlinks available on each page. Hyperlinks are usually underlined and in a different color from the main text. Frequently, the graphics on a page are also hyperlinks. You can tell whether a graphic or text is a hyperlink by moving your mouse cursor over the graphic or text: if it is a link, your cursor changes shape. The name of the link is typically shown in Navigator's status bar.

### Finding Information on the Web

There is a wealth of information available on the Web: the problem is finding the information you are looking for. There are several search engines and directory services offered on the Web. Click the **Net Search** or **Net Directory** buttons on the Navigator tool bar to use Netscape's facilities, which also include links to other search engines and directory services.

Here are some other places for you to start your search, but this is not a complete list. As you use the Web, you will find other resources.

- *http://www.yahoo.com*
- *http://www.altavista.digital.com*
- *http://www.lycos.com*
- *http://www.excite.com*

## Creating and Using Bookmarks

Navigator lets you create bookmarks for Web pages so that you can quickly return to pages that you want to view again and again. You can create bookmarks to just about any Web page, whether it is the home page for a site, or a specific page at a site. However, because the content of the Web is ever-changing, you might find that a bookmark ends up pointing to a page that no longer exists.

To create a bookmark, choose **Bookmarks>Add Bookmark** when viewing the page you want to mark. The page is added to the list of bookmarks shown on the bottom part of the **Bookmarks** menu.

To use a Bookmark, choose the bookmark from the **Bookmark** menu. Navigator opens the page named in the bookmark.

You can also delete bookmarks, edit the URL for a bookmark, import bookmark files for Navigator or other web browsers, or even add a URL directly by choosing **Bookmark>Go to Bookmarks**. Navigator's bookmark file is named *bookmark.htm*; Enhanced Mosaic's bookmark file is named *hotlist.htm* and is in the Windows installation directory (not the Emosaic directory).

## Configuring Navigator to Use Proxy Servers

Some networks require you to use proxy servers if you want to connect to systems outside the network. This helps maintain the security of the network. If you have problems connecting to sites on the Internet, contact your help desk or network administrator and ask if you are required to use proxy servers. If you are, get a complete list of the servers you are required to use, and any accounts on those servers that you need.

When you know the names of the proxy servers required for each type of Internet access, enter the names of those servers on the Manual Proxy Servers configuration page (choose **Options>Network Preferences>Proxies** tab and click the **View** button). If your site has an automated proxy configuration, you can enter the URL for that location instead of manually configuring the proxies.

## Reading Newsgroups Using Netscape News



You can read and create newsgroup postings using the Netscape News reader. Netscape News is similar to Netscape Mail, and you must configure Netscape Mail if you want to create news postings.

To start Netscape News, start Netscape Navigator and choose **Window>Netscape News**.

### Configuring News Servers

To add a news server to the list of available news servers in Netscape News, choose **File>Open News Host**, and enter the name of the news server you want to add to the list.

To set a news server as your default news server:

**Step 1** Choose **Options>Mail and News Preferences** and click the Servers tab.

**Step 2** Enter the name of the news server in the News Server field and click **OK**.

### Viewing Newsgroups and Reading News Postings

To view the postings available for a newsgroup, click on the newsgroup. The postings appear in the window to the right of the list of news servers.

To read a posting, click on the posting. The contents appear in the bottom window.

Netscape News uses the settings on the **Options** menu to determine which newsgroups to show you. For example, if you select **Options>Show Subscribed Newsgroups**, only newsgroups to which you are subscribed are shown. If you want to see all of the available newsgroups, choose **Options>Show All Newsgroups**. However, make sure Netscape News is not trying to contact a server when you change these settings: if Netscape News is contacting a server, first click the **Stop** button before changing your options.

### Creating a News Posting

To add your own posting to a newsgroup, select the newsgroup and click the **To:News** button. When you are finished writing your message, click the **Send** button.

If you want to reply to someone else's posting, select the posting and click the **Re:News** button.



## Subscribing to a Newsgroup

To subscribe to a newsgroup, right-click on the newsgroup and choose **Subscribe**. Subscribing to the newsgroups you are interested in lets you quickly select these newsgroups by choosing **Options>Show Subscribed Newsgroups** to filter out all other newsgroups.

To unsubscribe from a newsgroup, right-click the newsgroup and choose **Unsubscribe**.

## Logging into Hosts Using Telnet



Use Telnet to log into and use a remote host as if you were sitting at a real terminal connected to the host. Telnet can emulate VT400, VT100, and VT52 terminals for connecting to VMS and UNIX hosts; TN3270 terminals for connecting to VM and MVS hosts; and TN5250 terminals for connecting to AS/400 hosts. There is also a selection of international keyboards to suit your language requirements. You can also use Telnet to connect to a host using Kerberos authentication, rlogin, and klogin (Kerberized rlogin).

## Connecting to a Host Using Telnet

To connect to a host using Telnet:

- Step 1** Start Telnet. Telnet opens the Connect dialog.
- Step 2** Enter the name of the host.
- Step 3** If you plan on using this host regularly, check Create Profile. Telnet creates a profile for the host, which lets you connect to the host next time simply by selecting the profile from the list of profiles.
- Step 4** Click the **Connect** button. Telnet makes the connection and opens a terminal window for the host.

Once the terminal window is open, you can log into the host.



Once the Telnet terminal emulation window is open, you can connect to other hosts by clicking the **Connect** button on the tool bar.

When you are finished using the host, log off the host. Telnet automatically disconnects you from the host.

### Creating and Using Telnet Profiles

Telnet can usually determine the type of terminal emulation required by the host, and successfully negotiate the options required to make the connection you require, when you initially connect to the host. Thus, it is easiest to create a Telnet profile by first connecting to the host.

However, if Telnet cannot successfully negotiate the terminal emulation, you must first create a profile for the host on the Connect dialog. Click the **New** button, select the type of emulation you require in the Force Emulation field on the Sign On tab, and select any other options required to make the connection. Contact your network administrator, or the system administrator for the host, for assistance.

You must also first create a profile if you want to use Kerberos authentication, rlogin, or klogin. If you use Kerberos, Telnet prompts you to get a Kerberos ticket-getting ticket if you do not already have one (use the Kerberos utility to identify your Kerberos server and get Kerberos tickets).



When creating or modifying a profile, you can also create specialized keyboard maps. Click the **Keyboard** button to open the Keyboard Remapper: consult the online help for detailed information about using the utility. You can change the functions assigned to various keys, and you can also assign a macro, or sequence of functions, to a single key.



If you already created a profile for a host, you can connect to the host by clicking the **Quick Connect** button and choosing the profile from the list of existing profiles, if you already have a terminal window open.

### Changing Your Display and Other Current Settings



You can change your terminal display and other terminal settings for an active session by clicking the **Settings** button. This opens the Settings dialog for the profile for the current session. See the online help for detailed information for each setting.

Click the Display tab to change the display settings. You can select different fonts, colors, and keyboard maps. If you want to change the number of rows and columns for the terminal, click the tab for the current terminal emulation (VT, TN3270, TN5250) and select the desired size.

To permanently change your settings, click the **Save** button in the Settings dialog. If you only want to change your settings for the current session, click the **Apply** button.

## Retrieving Files from an FTP Server Using the FTP Client



Use the FTP Client to connect to an FTP server and copy files between your workstation and the server. You can also create and delete files and directories on both the local and remote hosts. You can connect to anonymous FTP servers as well as private servers on which you have an account. FTP Client also supports:

- Passive connection mode, used with IP packet filtering firewalls
- Application firewalls
- SOCKS server firewalls
- Connections to OpenVMS hosts that use Secure/IP security

When you log into the remote host, the FTP Client automatically detects the type of host and presents the host's files and directory structure accordingly.

## Connecting to an FTP Server Using FTP Client

To connect to an FTP Server using FTP Client:

- Step 1** Start FTP Client. FTP Client opens the Connect dialog.
- Step 2** Enter the name of the FTP server in the Host field.
- Step 3** If you are making an anonymous login, check Anonymous Login. FTP Client fills the user name and uses your email address for the password (the first time you use anonymous login, FTP Client asks for your email address).  
  
Otherwise, fill in the user name and password for your account on the FTP server.
- Step 4** Click the **Advanced** button and fill in the appropriate options if you have any of these requirements:
  - You must connect through an IP packet filtering firewall (check Passive Mode).
  - You must connect through an FTP proxy server (fill in the information in the Proxy Support group: see the online help for more information).
  - You must enter an account code for the FTP server. Account codes are sometimes required for IBM hosts.

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**Step 5** If you plan on using this host regularly, enter a profile name and click the **Save** button. FTP Client creates a profile for the host, which lets you connect to the host next time simply by selecting the profile from the list of profiles, or from the Quick Connect list.

**Step 6** Click the **Connect** button to connect to the FTP server. FTP Client creates a connection to the server and lists the server's files in the Remote Host window on the right side of the application's window.



**Step 7** When you are finished with the remote host, click the **Disconnect** button to disconnect from the host.

## Copying Files Using the FTP Client

You can navigate your workstation's file system in the FTP Client's Local window by changing the drive and directories. Change the drive by choosing a new drive from the drop-down list at the top of the Local window. Open and close directories by double-clicking them.

You can navigate the FTP server's file system in the FTP Client's Remote window by double-clicking the directories to open and close them. If the FTP Server is another Windows machine, you can change drives by clicking the **Change Dir** button and entering the drive letter, for example, D:\. However, you can only enter drives and directories to which you have been authorized.

Once you find the file you want to copy, and have the Local window opened to the directory to which you want to copy the file, simply drag the file from the Remote window's file list to the Local window's file list. If you are copying a file to the FTP server, drag the file from the Local window to the Remote window.

You can copy more than one file at a time: select a range of files by selecting the first file and shift-clicking the last file; select multiple individual files by Ctrl-clicking each file. Once all files are selected, drag them to the other system.

You can also copy entire directories at once, by dragging the directory to the target directory on the other system. FTP Client creates a subdirectory in the target directory for the copied directory, and also copies any subdirectories and files for the copied directory.

You can scale the directory and files windows with the horizontal and vertical window resizing controls. You can slide the Control Bar to reveal full file details on the local side, or you can remove it by unchecking **Options>Control Bar**.

## Connecting to NFS Network Drives and Printers



The NFS utilities let you use network drives and printers, and printers connected to other computers on the network, as if they were directly connected to your workstation.

On Windows 95, use NFS and Print Assistant to identify your NFS and print servers to Windows; use Network Neighborhood or Windows Explorer to connect to NFS drives and printers.

On Windows 3.x, use NFS Assistant to identify and connect to NFS drives, and Print Assistant to connect to NFS printers; use Windows File Manager to look at files on the NFS drives.

NFS and Print Assistant lets you map up to 24 drives concurrently, converts text and long file names on the fly, provides full DOS window support, and supports PC-NFSD V2.0 authentication. You can use printers that use LPR, stream, or the PC-NFSD print protocol. The NFS server can be a system running any type of operating system that supports NFS and PC-NFS.

## Adding NFS Servers to Your NFS Configuration

Use the NFS utilities to identify the NFS servers that have the drives and directories you want to use.

### Adding NFS Servers Under Windows 95

To add an NFS server to your NFS configuration on Windows 95 workstations:

- Step 1** Start NFS and Print Assistant.
- Step 2** Click the **Add** button.

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- Step 3** Enter the name of the NFS server in the Add Server dialog; for example, nfs01.yoyodyne.com. Check all types of connections you want to make to this server (ask your network administrator for the types of printer connections you need):
- **NFS Drive Mount Points** if you want to connect to drives on the server.
  - **NFS Printer Mount Points** if you want to connect to NFS print queues on the server. The server shows you the print queues available in the Network Neighborhood entry for the server.
  - **Stream Printing** if you want to make a stream connection to a network printer. Click the **Add** button in the Stream Queues group to add a port for the stream. The port number you need to use depends on the type of printer: for example, 9100 is for Hewlett-Packard printers. Ask your network administrator for the port number required for the network printer, or consult the printer's documentation.
  - **LPR Printing** if you want to make a connection to an LPR/LPD print server. Click the **Add** button in the LPR Queues group and add the names of the printer queues you want to use. Ask your network administrator for the names of these queues.

Once you have added the NFS servers to the configuration, you can access the server's drives and printers through the NFS Servers and Printers entry in the Windows 95 Network Neighborhood.

### Adding NFS Servers Under Windows 3.x

To add an NFS server to your NFS configuration for making network drive connections on Windows 3.x workstations:

- Step 1** Start the NFS Assistant and click the Servers tab.
- Step 2** Enter the name of the NFS server in the New Server Name field; for example, nfs01.yoyodyne.com.
- Step 3** Click the **Add** button to add it to the list of available servers.

To add NFS servers and printers for making print connections on Windows 3.x workstations:

- Step 1** Start Print Assistant and click the Servers tab.
- Step 2** Enter the name of the NFS server or printer in the New Server Name field; for example, nfs01.yoyodyne.com.
- Step 3** Click the **Add Server** button to add the server.
- Step 4** When you add the server, the Queues dialog appears so that you can add the printer queues. Check all connection types that you want to enable:
  - **Enable NFS** if you want to connect to NFS print queues on the server. The server shows you the print queues available on the Print Assistant's Connection tab.
  - **Enable Stream** if you want to make a stream connection to a network printer.
  - **Enable LPR/LPD** if you want to make a connection to an LPR/LPD print server. Enter the names of the print queues and click the **Add** button. Ask your network administrator for the names of these queues.

### Connecting to NFS Drives

Once you have added the NFS servers to your NFS configuration, you can connect to mount points (drives or directories) on the NFS server.

Although the NFS client is not case-sensitive, it preserves the case of file names on the NFS drives.

Also, when you browse a server's mount points, embedded or trailing slashes appear as % signs. However, if you enter the name of a mount point directly, use slashes, not the % sign.

### Connecting to an NFS Drive Under Windows 95

To connect to an NFS drive on a Windows 95 workstation:

- Step 1** Open Network Neighborhood and find the NFS Servers and Printers workgroup entry in the Entire Network entry. This list shows all NFS servers you have added to your NFS configuration.

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**Step 2** Double-click the name of the server to which you want to connect. The available directories (mount points) appear as folders. You can view the contents of the folders by double-clicking and browsing them just as you would if you were looking at your own drive in My Computer. (You must log into the NFS server before you can see the files: see the next step.)

**Step 3** If you want to connect the network drive to a drive letter on your workstation (for example, if you always want Windows to connect to the drive when you boot your workstation), right-click the directory name (mount point) and choose **Map Network Drive**.

Once you choose a drive letter for the connection, you must log into the NFS server. Enter your user name and password. If you have trouble logging into the server, ask your network administrator if you have a proper account, or if you need to use a different server to authenticate your connection. If you need to use an authentication server, enter the name of the server in the Authentication Server field on the NFS login dialog.

Once connected to an NFS drive, you can use it like any other drive on your workstation. You can drag and drop files between the drive and other drives using My Computer or Windows Explorer.

You can also connect to a drive by choosing **Tools>Map Network Drive** in Windows Explorer, and entering the UNC for the mount point; for example, `\\server.yoyodyne.com\nfsmount`.

To disconnect from a drive, right-click it in My Computer or Windows Explorer and choose **Disconnect**.

## Connecting to an NFS Drive Under Windows 3.x

To connect to an NFS drive on a Windows 3.x workstation:

**Step 1** Start the NFS Assistant and click the Connections tab. The NFS servers list shows the servers you have already added to your NFS configuration.

**Step 2** Double-click the name of the server to which you want to connect. The available directories (mount points) appear as folders.

**Step 3** Select the desired mount point.



- Step 4** Choose an available drive for this connection from the Available Drives drop-down list and click the **Connect** button.
- Step 5** Log into the NFS server. Enter your user name and password. If you have trouble logging into the server, ask your network administrator if you have a proper account, or if you need to use a different server to authenticate your connection. If you need to use an authentication server, enter the name of the server in the Authentication Server field on the NFS Connect dialog.
- If you want Windows to reconnect this drive every time you boot the workstation, check Reconnect at Startup on the login dialog.

Once connected to an NFS drive, you can use it like any other drive on your workstation. You can drag and drop files between the drive and other drives using File Manager.

To disconnect from a drive, choose it in the NFS Assistant Current Connection list and click the **Disconnect** button.

## Connecting to Network Printers

Once you have added the NFS servers to your NFS configuration, you can connect to printers connected to the NFS server, or to stream or LPR print queues. Before connecting to a printer, ensure you have the print drivers required for the printer: have the Windows installation media ready if you need to install the drivers.

### Connecting to a Network Printer Under Windows 95

To connect to a network printer on a Windows 95 workstation:

- Step 1** Open Network Neighborhood and find the NFS Servers and Printers workgroup entry in the Entire Network entry. This list shows all NFS servers and printers you have added to your NFS configuration.
- Step 2** Double-click the server to which the printer is connected. (For stream printers, the name of the printer is the server.)

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- Step 3** Double-click the desired printer. Windows 95 prompts you through the process of installing the printer. You might need the Windows 95 installation media if you do not already have the appropriate printer drivers installed. Once the printer is installed, you can print to it as if it were directly connected to your workstation.

Some applications require an LPT port number mapping to print. Right-click the printer icon, choose **Properties**, and click the **Capture Printer Port** button on the Details tab.

## Connecting to a Network Printer Under Windows 3.x

To connect to a network printer on a Windows 3.x workstation:

- Step 1** Install the printer drivers required by the printer.
- Step 2** Start the Print Assistant and click the Connections tab.
- Step 3** Double-click the server name, and double-click the type of printer connection you want to make. You get a list of possible printer connections.
- Step 4** Click the desired printer, and choose an available printer port for the connection.
- Step 5** Click **Connect**. If Print Assistant requires more information about the printer, it asks you for it (ask your network administrator for help if you are not certain about port numbers or queue names). Once the printer is installed, you can print to it as if it were directly connected to your workstation.

## Connecting to Networks Over a Modem Using Dialer



Use Dialer to connect to a remote network over a serial connection, which is typically a modem and telephone line, but can also be a direct connection. This is a common way of connecting to the Internet without having a direct Ethernet connection.

Dialer provides a complete scripting interface as well as a manual dialing mode, allowing you to establish either PPP (Point-to-Point Protocol) or SLIP (Serial Line IP) connections. You can connect to a host by using the manual mode, and then write a script to automate the process for subsequent use.

Once you are connected to the remote network, you can use TCP/IP and WinSock-compliant applications.

## Preparing to Make a Serial Connection

Before connecting to a remote host using the Dialer, you must complete these tasks:

- Get an account on the remote host. You need to know:
  - Your user name, if any
  - Your password, if any
  - The telephone numbers of the host
  - The type of connection the host supports (PPP or SLIP). If the host supports both types, use PPP: it is more robust and reliable.
  - Whether you will be dynamically assigned an IP address when you connect, or whether you must use a specific IP address.
  - The IP addresses of the DNS servers, if any.
  - The IP addresses of any routes you must use, if there are any besides your own workstation.
  - Any other authorization requirements, such as a user name or password for PAP or CHAP authorization.
- Configure your workstation for serial connections:
  - Use the Configuration Utility to add a serial interface. See the Configuration Utility's online help for more information.
  - If you are only using serial network connections on the machine (for example, you do not have an Ethernet connection), you must install the Cisco Dial-Up Adapter. Open the Windows Network Properties Control Panel; click the **Add** button and choose Adapter. Then choose Cisco as the Manufacturer and select the Cisco Dial-Up Adapter. When you configure the software, bind it to this adapter.
  - If you are going to initially make a manual connection to the host (which we recommend, unless your network administrator can supply you with a tested Dialer script for the host), choose **Manual Connect>Configure** in Dialer and configure the manual interface. You need to know your modem speed and port, as well as the other information previously mentioned.

See Dialer's online help for more detailed information about the information needed for configuring and completing serial connections.

### Making a Manual Serial Connection Using Dialer

To manually connect to a remote network over a serial line:



**Step 1** Start Dialer.

**Step 2** Click the **Manual Connect** button on the tool bar.

The Manual Connect dialog appears. This window includes a complete VT-style communications module that lets you interact with the modem directly. You must be careful how you type in this window: you cannot erase a mistake by backspacing over it. All typing is sent directly to the modem. If you paste text into the window, that text must be a modem command. If you find that your typing is not visible, reset the modem by typing `ATZ` or `AT&F` and pressing **Enter**.

**Step 3** In the Terminal View window, enter the command for dialing the remote host. This is usually `atdt` followed by the telephone number. Include all numbers required for dialing the host. For example, if you must dial 9 to get an outside telephone line, you must include 9 in the telephone number. Use a comma to indicate that Dialer should pause between numbers when dialing. For example, to dial 555-1212 when you need to dial 9 first, enter:

**atdt 9,555-1212**

**Step 4** If Dialer successfully connects to the remote host, you see text sent from the remote host. Log into the host using the user name, password, and other information required by the host. Ask your network administrator for this information. (If you are using PAP or CHAP authorization, and immediately begins sending PPP packets, click the **PPP** button immediately to complete the connection.)

**Step 5** Start PPP or SLIP on the remote host using the command supplied by the network administrator. Then:

- For PPP, click the **PPP** button once the remote host starts sending binary data (unreadable text).

- For SLIP, if you are using dynamically-assigned IP addresses, enter the IP address in the IP address field when the remote host sends you the IP address, and click the **SLIP** button. If you are not using dynamically-assigned IP addresses, the IP address should already be in the IP address field, so you only have to click the **SLIP** button.

If you want to create a profile for the connection, click the **Print** button before clicking the **PPP** or **SLIP** button.

Dialer attempts to complete the connection. Once the connection listed in Dialer's main window shows the **Active** status, you can start using network applications.



When you are finished using the remote network, click the **Disconnect** button.

## Creating Profiles for Serial Network Connections



If you plan to use Dialer to connect to a network regularly, create a profile for the connection to simplify the connection process. When you have a profile, you can quickly connect to the remote network by choosing the profile from the **Quick Connect** list.

Before creating a profile for a remote network, make a manual connection to the host and print the your interaction with the host. You will need this to create a script to automate the logon procedure.



Once you have the printout, click the **Connect** button and then the **New** button on the Connect dialog. Enter a profile name and then, in the Settings dialog, configure the interface as required. See the online help for detailed information about creating a Dialer script.

## Other Cisco TCP/IP Suite Components

This section describes Cisco TCP/IP Suite applications and other features not described in the previous sections. Use the online help for directions on using the applications.

### Cisco TCP/IP Stack and Configuration Utility



The TCP/IP stack is the underlying software that handles communications for Cisco TCP/IP Suite applications. The stack's unique, layered architecture includes a kernel API (application program interface) and a DPC (Deferred Procedure Call) layer optimized for Windows.

The kernel API is designed specifically for WinSock so that it minimizes communications between WinSock and the kernel. Because the stack fully supports the WinSock V1.1 API, you can run any WinSock-compliant application over the TCP/IP stack without any changes.

The Cisco TCP/IP Suite kernel supports multiple raw sockets, MTU path discovery, supernets and subnets, dynamic routing, and IP multicasting.

The Configuration Utility offers advanced options for configuring interfaces, routing, DNS, host tables, ARP, host names, domain names, LM host tables, and NetBIOS over TCP/IP.

### FTP Server



The FTP Server lets you set up your workstation so that users you authorize can access files on your workstation. The FTP Server provides password authentication and directory-level access control, and supports anonymous FTP and passive mode.

### Monitor



The Monitor application provides detailed information about your workstation's TCP/IP communications. It lets you view your workstation's current ARP cache, buffer statistics, TCP/IP connections, configured interfaces, protocol statistics, and routing table.

### Kerberos



The Kerberos application authenticates user access to a remote system without openly sending passwords over the network. This type of authentication, which uses encrypted keys called tickets, prevents intruders from breaking into systems by capturing passwords.

The Kerberos application lets you initialize Kerberos tickets, start Kerberized sessions, list your current tickets, and delete tickets you no longer need.

## Net Tools



The Net Tools application is a set of TCP/IP utilities mainly used for looking up information about users or machines, or on checking the condition of the network. Utilities include Ping, Finger, TraceRoute, Whois, and Host Lookup.

## Ping



The Ping utility lets you check on whether a machine on the network is active and responding to network requests. If a machine responds to a Ping, you know that the machine is on and its TCP/IP connection is active. However, the machine may not be able to respond to other networking requests.

## Version Information



Version Information displays Cisco TCP/IP Suite license keys currently installed on your machine and provides complete version information for each installed component. This information is useful when diagnosing potential sources of problems.

You can start Version Information from the Cisco Suite 100 program group or the system menu in the Configuration Utility.

## SNMP Agent



A workstation running the Cisco SNMP (Simple Network Management Protocol) agent can be managed by a network administrator from a remote system configured as an SNMP network manager. Because SNMP is an open standard, SNMP network management software and SNMP agent software from different vendors can be mixed and matched.

You can configure the SNMP Agent to send all standard SNMP traps (notifications of errors and other significant events on the agents). The SNMP Agent responds to all SNMP network manager queries.

SNMP maintains information about your workstation in a MIB (management information database). The Cisco TCP/IP Suite agent complies with the Internet-standard MIB II definition and is based on the SNMPv1 definition.

The SNMP Agent must be running in order for an SNMP network manager to maintain your workstation. See the online help for information on starting the agent automatically.

## Localization and Internationalization

Localized versions of the Cisco TCP/IP Suite applications are available for many languages. Contact your Cisco sales representative to see if the applications are available in a specific language.

*Internationalization* refers specifically to installation and terminal emulation. You can install the US English version of the Cisco TCP/IP Suite in localized versions of Windows. The Telnet application in this release of Cisco TCP/IP Suite emulates country-specific terminal behavior for UK English, French, German, Swedish, Danish, Swiss German, Swiss French, Norwegian, Finnish, and Belgian.