PHASER® 840
COLOR PRINTER

PHASERSHARE® NETWORKING SETUP GUIDE

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Tektronix®

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Phaser® **840 Color Printer**
PhaserShare® **Networking Setup Guide**

Contents

1 *Introduction*

This guide provides information to help you quickly install the Tektronix Phaser 840 color printer in the following environments:

- EtherTalk, LocalTalk, and TokenTalk

- Novell NetWare

- UNIX

- Windows 95 and Windows 98

- Windows NT

For detailed networking information, including troubleshooting, see the online manual on your printer's CD-ROM, or see the *PhaserShare Networking Manual* in PDF format on your printer's CD-ROM.

For information on installing Tektronix printers in DOS environments, see the printer's CD-ROM or network utilities diskettes. They contain PostScript utility files that can be sent to the printer for network configuration in DOS environments. They also contain a DOS application, NWSET, for printer configuration on NetWare networks.

For information on how to use the DOS configuration files, see the *README* files on the printer's CD-ROM and network utilities diskettes. PC users: the *README* file for PostScript utility files is in the *UTILS* directory; the *README* file for NWSET is in the *NETWARE* directory. (Macintosh users: the *ReadMe* file for PostScript utility files is in the *Network Utilities* folder).

For information on installing into OS/2 environments, see the online manual on your printer's CD-ROM, or see the *PhaserShare Networking Manual* in PDF format on your printer's CD-ROM.

Before you begin network configuration

■   Set up your printer and connect it to the network. See your printer's user documentation for information about setting up the printer. For information about connecting the printer to the network, see Chapter 2 of this manual, "Connecting Your Printer to a Network".

■   Install the Tektronix driver for your printer on every Macintosh and PC that will send print jobs to the printer. For details on driver installation, see your printer's user documentation.

■   **For NetWare environments.** To speed the setup process and avoid conflicts, familiarize yourself with the components of your network. You should know which version(s) of NetWare are installed, which versions of client software are used, and the network topology (frame types, routers, hubs, and cabling).

Printing a Configuration Page

Your printer's Configuration Page supplies useful information for installing and configuring the printer on a network.

Printing a Configuration Page

1.   When the front panel displays `READY TO PRINT`, press the down-arrow button until `Menu` is highlighted. Press **Select**.

2.   Press the down-arrow button until `Printer Configuration` is highlighted. Press **Select**.

3.   Press the down-arrow button until `Print Configuration Page` is highlighted. Press **Select**.

Printer management

After your printer is up and running on the network, you can take advantage of the following features that aid you in managing your printer over the network:

■   **Job accounting.** The printer stores a log file containing information about jobs printed. The file is a list of job accounting records. Each record contains fields such as user name, job name, pages printed, job times, and toner used.   Job accounting is available through the PhaserShare Administrator and PhaserLink Printer Management software.

■   **PhaserLink Status Notification.** PhaserLink Printer Management Software provides PhaserLink Status Notification, which allows the printer to automatically send email to the system administrator and others when the printer requires attention (for example, when printer errors, warnings, and alerts occur, or when service is required).

■   **Usage Profile reports.** The printer can generate reports detailing printer usage. These *Usage Profile reports* include information on many aspects of printer usage, including ink or toner used, number of pages printed, and media types used. You can print these reports from the front panel or PhaserLink Printer Management software, or you can obtain them automatically via email.

■   **PhaserLink PDF Direct Printing.** This feature provides drag-and-drop printing of PDF and PostScript files from your web browser in Windows 95 and Windows 98 environments. Just drag any hotlink for a PDF or PostScript file from the browser to the PhaserLink PDF Direct Printing icon on the desktop to print the file on your Tektronix printer. There is no need to access the URL or open the file.

■   **Intelligent Ready.** With Intelligent Ready, the printer can monitor usage and automatically warm up when you are most likely to need it. You can turn Intelligent Ready on or off from the printer's front panel. Using PhaserLink Printer Management Software, you can control when the printer automatically warms up.

For more information on these features, see the *PhaserShare Networking Manual* on the printer's CD-ROM.

If you need more information

You may need more information about troubleshooting your network installation or using the printer. The following sources are available:

PhaserShare networking manual. Provides detailed networking information for system administrators, including troubleshooting; available in PDF format on the printer's CD-ROM. A printed copy of this manual can be ordered from Tektronix (part number 071-0180-01).

Online user manual. Provides complete information on using your printer, including printer care, printer features, and networking; provided in HTML format on the printer's CD-ROM. It is also available on the Tektronix web site.

PhaserShare Administrator online help. Provides detailed descriptions of all program functions and dialog boxes.

PhaserLink Printer Management Software online help. HTML files supplied on the printer's CD-ROM. See "PhaserLink Printer Management software help files" on page 60.

Readme files. Provided on the printer's CD-ROM and diskettes. They contain information about PostScript utility files and DOS applications that can be used for configuring and using your printer in DOS environments. Some utility files for Macintosh are also provided.

World Wide Web. User documentation and other printer information is available from the Tektronix web site:

www.tek.com/Color_Printers/support/colcare.html

Technical support hotline. In the U. S. and Canada, call 1-800-835-6100, Monday through Friday, 6:00 am to 5:00 pm PST. For international numbers, see the printer's user guide or visit:

www.tek.com/Color_Printers/cgi-bin/CPIDlocProcessor

2

Connecting Your Printer to a Network

PhaserShare Series B Ethernet interface

The PhaserShare Series B Ethernet interface conforms to the IEEE 802.3 and Ethernet II standards. With the printer's built-in Ethernet interface, you can connect the printer directly to an Ethernet network using twisted pair (10BaseT) cables. With the PhaserShare Series B Ethernet card, you can connect the printer directly to an Ethernet network using twisted pair (10BaseT or 100BaseTx) or thin coax (10Base2) cables. Connecting the printer using thick coax (10Base5) requires an adapter; contact your dealer to obtain adapters, cables, and terminators.

When a PhaserShare Series B Ethernet card is installed, the printer's built-in Ethernet connector is disabled; use the connectors on the card.

When a PhaserShare Series B card is purchased initially with the printer, it is installed at the factory. When a PhaserShare Series B card is purchased later as an upgrade kit, follow the instructions that are shipped with the card.

C A U T I O N

To avoid damaging the network interface, turn off the printer before making any Ethernet connections.

Ethernet connections and indicators

Built-in Ethernet connector

The printer's built-in Ethernet connector has the following connections and indicators:

1. LINK indicator; *on* indicates a working connection to a hub; *off* indicates no connection to a hub.

2. RCV indicator (green); *blinks* while the network interface is receiving.

3. XMT indicator (yellow); *blinks* while the network interface is transmitting.

4. Twisted pair (10BaseT) connector.
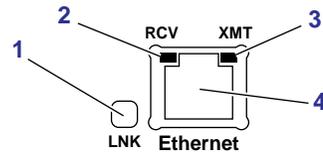
0180-01

PhaserShare Series B Ethernet card

The PhaserShare Series B Ethernet card has the following connections and indicators:

1. TX indicator (yellow); *blinks* while the network interface is transmitting.

2. RX Link indicator (green); *blinks* while the network interface is receiving.

3. Speed indicator (yellow); *on* indicates 100 Mbps; *off* indicates 10 Mbps.

4. Twisted pair connection indicator; *on* indicates a working connection to a hub; *off* indicates no connection to a hub. If the 10Base2 connector (**6**) is used, this indicator is *off*.

5. Twisted pair (10BaseT or 100BaseTx) connector.

6. Thin coax (10Base2) connector.
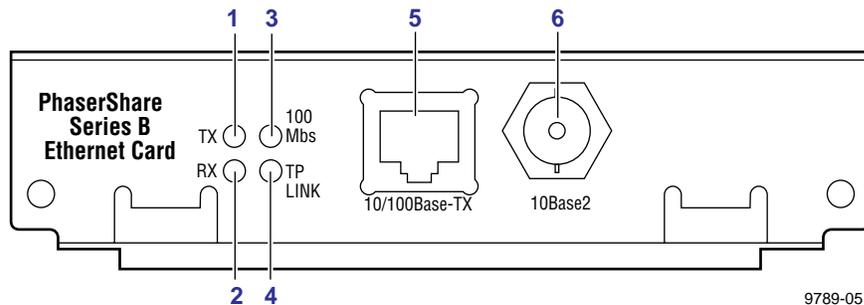
Ethernet cables and termination

N O T E

To fully comply with EMI (electro-magnetic interference) specifications, the use of shielded or screened cables may be required. "Shielded" describes IBM-defined cables used with the DB-9 connector. "Screened" describes cables that are electrically similar to Category 4 UTP (Unshielded Twisted Pair), but with an added shield or screen.

10BaseT or 100BaseTx (Twisted Pair)

100BaseTx requires Category 5 (100-Ohm UTP) cabling.

The Ethernet standard does not allow a direct 10BaseT connection between a single computer and a single printer. Use 10Base2 (Thin Ethernet) to connect a single computer to a single printer.

C A U T I O N

Do not use "silver satin" telephone extension cables for 10BaseT networks, either as drop cords or as patch cables in the wiring closet. (Silver satin cables are flat, usually silver or gray, with 28-gauge stranded or tinsel conductors.) Do not use shielded twisted pair cable intended for IBM Token Ring networks or voice-grade (level 1 or 2) unshielded twisted pair cable for wiring runs. **These cables do not meet the requirements for 10BaseT and will lead to unreliable operation.**

10Base2 (Thin Ethernet)

Depending on the type of Ethernet cables you use and your network configuration, you may need to use terminators at certain points in the installation. Refer to the manufacturer's documentation for your Ethernet adapters and cables for details.

10Base5 (Thick Ethernet)

Connecting the printer using thick coax (10Base5) requires an adapter; contact your dealer to obtain adapters, cables, and terminators.

PhaserShare Series B Token Ring card

The PhaserShare Series B Token Ring port conforms to the IEEE 802.5 standard. With the PhaserShare Series B Token Ring card, you can connect the printer directly to a Token Ring network using shielded twisted pair (STP; IBM Type 1) or unshielded twisted pair (UTP; IBM Type 3) cables. Contact your dealer to obtain adapters and cables.

N O T E
To fully comply with EMI specifications, the use of shielded or screened cables may be required. "Shielded" describes IBM-defined cables used with the DB-9 connector. "Screened" describes cables that are electrically similar to Category 4 UTP, but with an added shield or screen.

When a PhaserShare Series B card is purchased initially with the printer, it is installed at the factory. When a PhaserShare Series B card is purchased later as an upgrade kit, follow the installation instructions that are shipped with the card.

When a PhaserShare Series B Token Ring card is installed in the printer, the printer's built-in Ethernet connector is disabled.

C A U T I O N
To avoid damaging the network interface, turn off the printer before making any Token Ring connections.

Token Ring connections and indicators

The PhaserShare Series B Token Ring card has the following connections and indicators on the rear panel:

1. Shielded Twisted Pair (STP; IBM Type 1) connector (DB-9).

N O T E
> The STP port on the PhaserShare Token Ring card supports cable lengths up to 150 meters (492 feet) from the interface to the MAU (Medium Access Unit), including lobe and patch cables.

2. Unshielded Twisted Pair (UTP; IBM Type 3) connector (RJ-45).

3. Ring speed indicator (yellow); *on* indicates 16 Mbps, *off* indicates 4 Mbps.

4. TX indicator (yellow); *blinks* while the interface is transmitting.

5. Connection indicator (green); *on* indicates that the card is asserting its ring insertion control signal.

6. RX indicator (green); *blinks* while the interface is receiving.
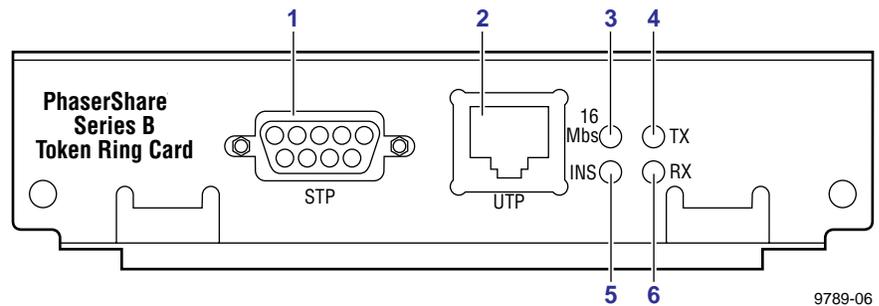
Ring speed jumper

The Token Ring card is equipped with a single three-pin jumper to set the ring speed. There are two settings: 4 Mbps and 16 Mbps.

N OTE

If you received your printer with the Token Ring card already installed, you must turn off the printer and remove the card before you change the jumper setting.

The following illustration shows a top view of the card and the location of the jumper.

1. Rear panel

2. Jumper

1

2

16 Mbps   **4 Mbps**

9789-03
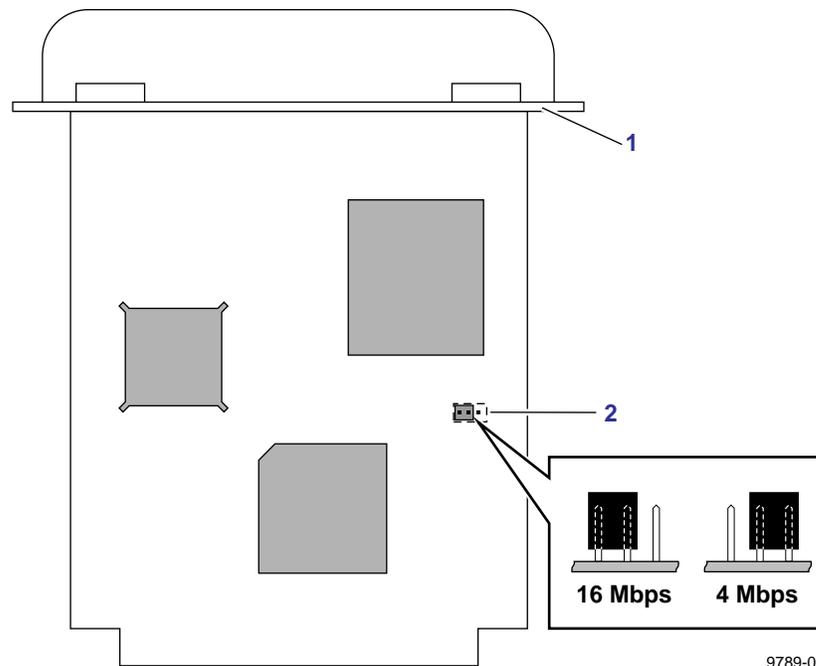
Token Ring configuration

Token Ring parameters

Parameter	Description	Choices
Network Address	Token Ring Address. You can supply a Locally Administered Address.	Any valid Token Ring address between 40.*xx.xx.xx.xx.xx* and 7F.*xx.xx.xx.xx.xx*.
Speed	Read-only parameter; reports the ring speed set by the jumper on the card.	4 Mbps or 16 Mbps.
Early Token Release	Printer releases the token at the end of the last byte transmitted (not applicable at 4 Mbps).	Enabled (default) or Disabled.
Route Cache Size	Number of entries in the source route table.	10 to 300.
Route Cache Timeout	Time in seconds that an entry remains in the source route table before being updated.	5 to 65535.
Broadcast	For broadcasting to all network nodes. Changes the default frame type for source route broadcasts. **Broadcast** is ignored if **Frame Routing** is set to **Transparent**. Some protocols (for example, IP and ARP) are not affected by this parameter.	Single Route. The printer uses single-route broadcasts for most source-route broadcasts. All Routes. The printer uses all-routes broadcasts for all broadcasts.
Adapter Status	Read-only parameter; reports the Token Ring card status. Report is in two parts, separated by a comma: *Adapter status*, *Details* *Adapter status* reports the condition of the Token Ring card. *Details* reports additional information.	**Adapter status:** Adapter Initializing. Card is starting up. Adaptor Open. Card is connected to the network. Adapter Closed. Card is not connected to the network. Adapter Fault. Card is defective. **Details:** Ring OK. Ready for network communication. Fault. Internal error; the card is defective. Cable Disconnected. Cable is not connected to the card. Ring Error. Network problem. Removed by network management. The network administrator has disabled the connection.
Unknown Route	Printer is searching for a route to a specific network node. Changes the default frame type for source route broadcasts. **Unknown Route** is ignored if **Frame Routing** is set to **Transparent**. Some protocols (for example, IP and ARP) are not affected by this parameter.	Single Route. Printer uses single-route broadcasts for most source-route broadcasts. All Routes. Printer uses all-routes broadcasts for all broadcasts.

Configuring Token Ring parameters

■ On UNIX systems, you can use the script *config-TokenRing*, provided with the printer's network utilities software. See the next topic, "Using the config-TokenRing script".

■ On PCs, you can edit the PostScript utility file *TOKNCFG.PS* and send it to the printer. See the *README* file in the *UTILS* directory on the printer's network utilities diskettes or CD-ROM for details.

■ On a Macintosh, you can edit the PostScript utility file *Configure Token Ring* and send it to the printer. See the *ReadMe* file in the *Network Utilities* folder on the printer's network utilities diskettes or CD-ROM for details.

■ Windows users on NetWare networks can use the PhaserShare Administrator. See "Using the PhaserShare Administrator to configure Token Ring" on page 15.

■ With a TCP/IP connection and a World Wide Web browser, you can use PhaserLink. "Using PhaserLink software to configure Token Ring" on page 15.

Whichever method you use, reset the printer to make the changes take effect.

Using the *config-TokenRing* script

The UNIX shell script *config-TokenRing* is provided with the printer's network utilities software. The script creates a PostScript file containing the Token Ring parameters. Set the Token Ring parameters by sending the PostScript file to the printer.

Before performing this procedure, install the script on your host computer. If you have not already installed the file, see "Extracting files from unix.tar" on page 30. Your host spooling system must also be configured; see Chapter 5, "TCP/IP Configuration (UNIX)".

1. Connect the printer to the network. ARP (Address Resolution Protocol) requires that the printer be connected on the same physical network segment as the host. You will be using the **arp** command later in this procedure.

2. Log in.

3. Run the script *config-TokenRing:*

   a. In the directory where you placed your printer's network utilities, change (**cd**) to the *bin* subdirectory.

   b. Type the name of the script, redirecting the output to a file. Type:

      config-TokenRing > *filename*

4. When prompted by the script, enter the Token Ring parameters.

5. When the script is finished, log in as **root**.

6. Make an entry into the host's ARP (Address Resolution Protocol) table defining the printer's Printer Name/Token Ring address pair. In general, this requires a command corresponding to one of the following syntax examples:

   arp -s *printer-name   Token-Ring-address*   (for BSD systems)

   or

   arp -s ether *printer-name   Token-Ring-address*   (for System V)

   See the documentation for your host system for specifics of this command.

7. Turn on the printer.

8. Use the host spooling system (for example, **lpr** or **lp**) to send to the printer the file you created in Step **3b**; this stores the Token Ring information in the printer's memory, where it is retained over a reset or power cycle.

9. Reset the printer to make the changes take effect.

Using the PhaserShare Administrator to configure Token Ring

1. In the PhaserShare Administrator **Main** window, select the desired printer from the **Printer List**.

2. Click **Configure Printer**; this displays the **Configure Printer** dialog box.

3. In the **Configure Printer** dialog box, click the **Token Ring** tab.

4. In the **Token Ring** tab, set the Token Ring parameters as desired.

5. Click **OK**.

6. You are prompted to reset the printer. Reset the printer to make the changes take effect.

For more information on the PhaserShare Administrator, see the *PhaserShare Networking Manual* on the printer's CD-ROM.

Using PhaserLink software to configure Token Ring

For information on connecting to your printer via PhaserLink, see "Accessing printer information from a browser" on page 59. For general information on PhaserLink software, see Chapter 9, "PhaserLink Printer Management Software".

1. From the printer's home page, click **Configuration**; this displays the **View and Configure Settings** page.

2. From the **View and Configure Settings** page, click **View and Configure Interface Settings**; this displays the **View and Configure Interface Settings** page.

3. From the **View and Configure Interface Settings** page, click **View and Configure PhaserShare Settings (Token Ring card)**; this displays the **View and Configure PhaserShare Settings** page for Token Ring.

4. Enter your settings into the fields for **Token Ring Address**, **Speed**, and **Bridging**. If you make an error, click **Restore Initial Form Values** and start again.

5. When you are finished entering the settings, enter the **Validation Password** and click **Do/Apply**. If you are not sure of the password, contact your system administrator.

6. Reset the printer to make the changes take effect.

PhaserShare Series B LocalTalk card

When a PhaserShare Series B card is purchased initially with the printer, it is installed at the factory. When a PhaserShare Series B card is purchased later as an upgrade kit, follow the installation instructions that are shipped with the card. Both the LocalTalk connection on the card and the Ethernet connector on the printer's rear panel are simultaneously active.

LocalTalk connection

N O T E
LocalTalk is sometimes referred to as AppleTalk. LocalTalk refers to the physical connection; AppleTalk is the protocol.

You can make LocalTalk connections between the printer and a single computer or a LocalTalk network. If your LocalTalk installation is complex, or if you need assistance, contact your network system administrator.

C A U T I O N
Connect your printer to a LocalTalk network **before** you turn on the printer.

LocalTalk card connections and indicators

1. TX indicator (yellow); *blinks* while the interface is transmitting.
2. RX indicator (green); *blinks* while the interface is receiving.
3. LocalTalk connector; 8-pin, circular DIN.

N O T E
Both indicators flashing together indicates a fatal software error. Turn the printer off, then on again; if the problem persists, replace the card.
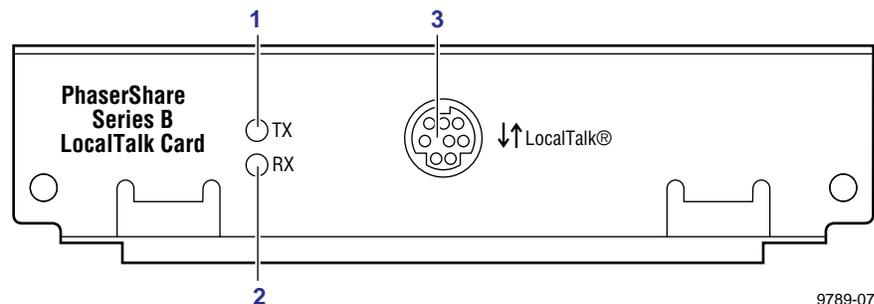
LocalTalk connectors, cables, and terminators

LocalTalk connectors and cables are available through your local reseller. Depending on the type of LocalTalk cables you use and your network configuration, you might need to use terminators at certain points in the installation. Refer to the documentation for your LocalTalk connectors and cables for details.

Connecting to a single computer

To avoid damaging the network interface, turn off the printer before making any LocalTalk connections.

1. Connect the short cable of a LocalTalk connector to the PhaserShare LocalTalk port.

2. Connect the short cable of another LocalTalk connector to your computer's LocalTalk port.

3. Connect a LocalTalk cable from the LocalTalk connector that you have just attached to your computer to the printer's LocalTalk connector.
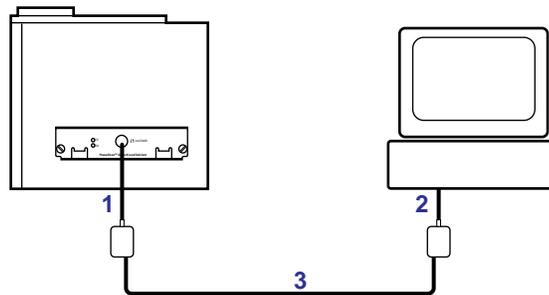
9789-08

Depending on the type of LocalTalk connectors you use and your network configuration, you might need to use external terminators. Refer to the documentation for your LocalTalk connectors and cables for details.

For configuration details, see Chapter 3, "EtherTalk, LocalTalk, and TokenTalk Configuration".

3

EtherTalk, LocalTalk, and TokenTalk Configuration

Configuration overview

N O T E

The printer's AppleTalk connection works with Macintosh system software 7.0, 7.1, 7.5, 7.6, 8.0, 8.1, and 8.2.

The configuration procedure for LocalTalk, EtherTalk, and TokenTalk consists of two simple steps:

1. Print the Configuration Page. It reports the printer's default name, which you need for EtherTalk and TokenTalk configurations. For information on printing a Configuration Page, see "Printing a Configuration Page" on page 2.

2. Verify that the printer is in the **Chooser**. See "Finding the printer's name in the Chooser" on page 20.

   ■ If the printer is not in the **Chooser**, see the *PhaserShare Networking Manual* on the printer's CD-ROM.

   ■ If the printer is in the **Chooser**, you may want to change the printer's name or zone. For information on these procedures, see the *PhaserShare Networking Manual* on the printer's CD-ROM.

Finding the printer's name in the Chooser

1. From the **Apple** menu, select **Chooser**.

2. In the upper-left corner of the **Chooser**, find the driver icon. (If the driver icon is not in the **Chooser**, you need to install the printer driver.) Click the driver icon.

3. If a list of zones appears in the lower-left portion of the **Chooser**, select the proper zone.

   N O T E

   The printer's default zone is listed on the Configuration Page in the EtherTalk or TokenTalk field. For more information on the Configuration Page, see "Printing a Configuration Page" on page 2.

4. A list of printers appears in the right portion of the **Chooser**; find your printer's name. The printer's default name is listed on the Configuration Page (see "Printing a Configuration Page" on page 2). If the name does not appear, check the cable connection between your printer and the network.

   N O T E

   It is possible for the **Printer Name** field on the Configuration Page to be blank. When the printer is powered up, it uses a default name and then checks to see that no other printer on the network has the same name. If enough printers with the same default name are present, it can take several minutes for the printer to establish a unique name. If the **Printer Name** field on the Configuration Page is blank, wait a short time and reprint the Configuration Page.

4

Novell NetWare Configuration

This chapter provides a quick configuration procedure for Windows environments using the Tektronix PhaserShare Administrator. For detailed information on the PhaserShare Administrator functions, see the PhaserShare Administrator on-line help.

The printer's CD-ROM and network utilities diskettes also contain a DOS application, NWSET, that can be used for configuration in DOS environments. For information on how to use NWSET, see the *README* file in the *NETWARE* directory on the printer's CD-ROM and network utilities diskettes.

Installing the PhaserShare Administrator

Your printer's software CD-ROM contains the files necessary for installing the PhaserShare Administrator. A single integrated installer is used to install printer drivers, the PhaserShare Administrator, and other software.

Installation

1. Insert the printer's software CD-ROM into the CD-ROM drive.

   ■ If the Windows autorun feature is enabled, the CD-ROM launches automatically.

   ■ If the Windows autorun feature is disabled, double-click **My Computer**, then double click the CD icon to launch the CD-ROM.

2. View the brief introductory information, then click **Install Drivers** to launch the installer.

3. When you are prompted to select **Easy Install** or **Custom Install**, select **Custom Install**.

4. During custom installation, a dialog box is displayed enabling you to install the PhaserShare Administrator. Follow the on-screen prompts to complete the installation.

Launch the Quick Configuration Wizard

Click **Quick Configuration** to launch the Quick Configuration Wizard.

Configure the printer and set up queues

1. If desired, change the **Print Server Name** or **Printer Name**.

2. Select connection mode(s) by checking the box(es) for **Bindery Services**, **NDS Services**, or both.

3. Click **Next**; the dialogs that follow allow you to configure Bindery connections, NDS connections, or both. You need to supply the following information for these connections:

Information needed for Bindery connections

Select either the configuration file server or the preferred file server from the drop-down list; click **Next**.

If the file server you want is not on the list, proceed with these steps:

a. Click **File Servers** to display the **File Servers Browse** dialog box.

b. Select the server you want. Click **OK**. You are returned to the **File Server Selection** dialog box.

c. Select either the configuration file server or the preferred file server from the drop-down list. Click **Next**.

Create and select a new queue, or select an existing queue. Click **Finish**.

Information needed for NDS connections

■ Specify the current **Directory Services Tree** (the tree where the print server will reside).

■ Specify the current **Directory Services Context** (the location in the directory services tree where the print server will reside).

■ Create and select a new queue, or select an existing queue. Click **Finish**.

Verify information and finish the configuration

After you have entered the configuration information, the Quick Configuration Wizard displays the **Configured Printer Information** dialog box, which reports the information you have entered.

1. Verify that the information is correct.

   - If the information is correct, click **Apply Changes**.

   - If the information is not correct, click **Back** to return to previous dialog boxes and correct the information. Click **Next** to return to the **Configured Printer Information** dialog box. Click **Apply Changes**.

   - To exit the wizard and return to the **Main** window without making any changes, click **Cancel**.

2. After you click **Apply Changes**, the printer resets; the changes take effect when the reset is complete.

3. After the reset, you are prompted to print a test page. It is recommended that you print a test page to verify a successful installation. For more information on NetWare configuration and troubleshooting, see the *PhaserShare Networking Manual* on your printer's CD-ROM.

Setting IPX frame types from the front panel

1. When the front panel displays `READY TO PRINT`, press the down-arrow button until `Menu` is highlighted. Press **Select**.

2. Press the down-arrow button until `Printer Configuration` is highlighted. Press **Select**.

3. Press the down-arrow button until `Network Settings` is highlighted. Press **Select**.

4. Press the down-arrow button until `NetWare` is highlighted. Press **Select**.

5. Press the down-arrow button until `IPX Frame Type` is highlighted. Press **Select**.

6. Press the down-arrow button until the desired frame type is highlighted. Press **Select** until `On` is displayed. If desired, you can set more than one frame type.

7. To return the printer to normal operation, press the down-arrow button until `Exit` is highlighted. Press **Select**.

5 *TCP/IP Configuration (UNIX)*

Adding the printer to the host table

Add the printer's name to the host table and assign an IP address to the printer's name. Depending on your host system, you may do this one of three ways:

- Use NIS (Name Information Server, formerly Yellow Pages).

- Use DNS (Domain Name Server).

- Edit a file (for example, */etc/hosts*). For an example, see "Example installation for a typical BSD UNIX system" on page 27.

Assigning a print queue to the printer

- For BSD systems, edit the */etc/printcap* file and add a spool directory (for example, to */usr/spool/lpd*).

- For System V hosts, configure the queue as a remote BSD print queue (support for TCP/IP LPR is required). Specific instructions for the following System V hosts are provided in the *PhaserShare Networking Manual* on the printer's CD-ROM:

  - Sun Solaris

  - SGI IRIX 5.3 and 6.x

  - IBM AIX 3.x and 4.x

  - Hewlett-Packard HP-UX 9.x and 10.x.

N O T E

Some UNIX hosts report an error when you configure a print queue that is not currently on the network; ignore this message.

Assigning print queues with PhaserPrint for UNIX

For UNIX environments, Tektronix offers PhaserPrint for UNIX software, which provides fast raster printing and a graphical user interface with push-button control of printer features. For more information on PhaserPrint software, see the *PhaserShare Networking Manual* on the printer's CD-ROM.

If you want to print using PhaserPrint for UNIX software, you must use PhaserPrint software to configure your host. Refer to the PhaserPrint for UNIX user manual or the instructions provided with the PhaserPrint for UNIX CD-ROM for configuration information. PostScript and PDF versions of the manual are available from the Tektronix ftp site:

ftp.tek.com/cpid/UNIX/phaserprint2.1/demo/MANUALS

Required remote printer queue names

The printer's internal LPR queue uses the BSD protocol; its known queues are listed in the following table. These are the only remote queue names that the printer recognizes. If you use another name, the printer automatically defaults to AUTO.

Queue name	Language
PS	PostScript
PCL	PCL (Printer Control Language)
AUTO	Automatic Language Selection (the printer automatically senses the language of the print job and processes it accordingly)

Using PostScript utility files to control printer features from queues

As you set up a spool queue, you can use the PostScript utility files provided with your printer's software to control printer features (for example, selecting upper or lower paper trays, or selecting print quality modes). See your printer's user documentation for more information on these utility files.

UNIX model files

These files allow you to access printer features from the UNIX command line by using the **-o** printing option. On the printer's CD-ROM, the file *model.tar* contains the installer for the model files and model files for Sun Solaris, Hewlett-Packard, and IBM AIX workstations.

Example installation for a typical BSD UNIX system

The following procedure is an example spooler configuration that will work for many BSD systems, including SunOS 4.x and 5.x (Solaris 1.x and 2.x) and Digital UNIX.

Modify the */etc/hosts* file to identify the printer to the workstation and modify the */etc/printcap* file to describe the printer to the workstation:

1. Log on to your system as *root*.

2. Make a backup copy of the */etc/hosts* file.

N O T E

You need superuser privileges to edit this file.

3. Edit */etc/hosts* and add a line that defines the printer's IP address and its name. The IP address you enter here for the printer must be the same address you specified as the printer's IP address when it was configured. The name is the name by which your workstation identifies the printer (you will enter this same remote name in your */etc/printcap* file in the next step). For example:

        134.62.33.138   Phaser840

In this example, `134.62.33.138` is the printer's IP address and `Phaser840` is the printer's remote name.

4. Make a backup copy of the */etc/printcap* file.

5. Edit */etc/printcap* and add an entry for your printer. Refer to the following example and the table "Descriptions of printcap parameters" on page 28 to create your entry.

Sample printcap file

```
# Printer:  Tektronix Phaser840
# Print queue name: colorprinter
# Remote machine name:  Phaser840
# Remote printer queue name:  PS
# Spool directory:  /usr/spool/lpd/colorprinter
  colorprinter:\
   :lp=:\
   :rm=Phaser840:\
   :rp=PS:\
   :mx#0:\
   :lf=/usr/spool/lpd/ERRORLOG:\
   :sd=/usr/spool/lpd/colorprinter:
#
```

Descriptions of *printcap* parameters

Parameter	Description
lp	Name of the device to open; this parameter must be left empty or set to *ature /dev/null*.
rm	Remote machine name. The name by which the workstation identifies the printer; must match the name in the */etc/hosts* file.
rp	Remote printer queue name. The queue name that the printer recognizes; must be one of the following: PS for PostScript PCL for Printer Control Language HPGL for Hewlett-Packard Graphics Language AUTO for Automatic Language Selection (the printer automatically senses the language of the print job and processes it accordingly) If you specify any other remote printer queue name, the printer defaults to AUTO. Your printer model may not support all languages listed here. See your printer's user documentation for information on the supported languages.
mx	Maximum file size. Set this parameter to **0** for unlimited file size; this allows the print command to handle large PostScript or image files.
lf	Log file where print command error messages are collected. Some systems have a log file for each print queue. Refer to your workstation's documentation for more information.
sd	Host spool directory. Make a separate spool directory for each queue.

6. Set up spool directories. After you have edited the */etc/hosts* and */etc/printcap* files, create and set permissions for the spool directory you specified. For example:

    ```
    cd /usr/spool/lpd
    mkdir colorprinter
    chown daemon colorprinter
    chgrp daemon colorprinter
    chmod 770 colorprinter
    ```

    Refer to your UNIX documentation for the correct command syntax for your workstation.

Printer configuration

There are two steps to printer configuration:

1. Set the printer's IP address and other addressing information. The Phaser 840 printer supports the use of IP host name as well as an IP address. See Chapter 8, "Setting the Printer's IP Addressing Parameters" for more information.

2. Set the printer's other TCP/IP parameters (optional):

    ■   Set host access and control-character filtering for each port.

    ■   Receiving printer status (Syslog, SNMP, or email notification).

    For information on setting these TCP/IP parameters, see the *PhaserShare Networking Manual* on the printer's CD-ROM.

Extracting files from *unix.tar*

The file *unix.tar* contains all shell scripts and other files needed for network configuration in UNIX environments. The file is in UNIX **tar** format. The file is included on your printer's software CD-ROM.

Listing the contents of *unix.tar*

Type this command:

> **tar   tvf   /*directory-name*/unix.tar**

Where *directory-name* is the mount point or the directory that contains the file. For example:

```
tar    tvf    /mnt/unix.tar
```

Extracting the files

1. Change (**cd**) to the directory on your workstation where you want the files to reside.

2. Type this command:

> **tar   xvf   /*directory-name*/unix.tar**

Where *directory-name* is the mount point or the directory that contains the file. For example:

```
tar    xvf    /mnt/unix.tar
```

6

Windows 95 and Windows 98: PhaserPort Software

TCP/IP configuration for a PC

If you don't already have a TCP/IP address configured for your PC, contact your system administrator to ensure that the configuration is made according to your company guidelines. If there is no TCP/IP network already in place, configure your PC with a unique address such as 192.1.1.1. To check the IP address for your PC, follow these steps:

1. From the **Start** menu, click **Run**.

2. Enter:

    ```
    winipcfg
    ```

3. Click **OK**.

4. Choose your network adapter from the pulldown list.

5. The IP address is listed in the **IP Address** field.

For more information on installing and configuring TCP/IP in Windows environments, see your Microsoft Windows documentation.

Setting the printer's IP address

You can set the printer's IP address by any of the following methods:

■ **Use the printer's front panel.** For more information, see "Setting IP parameters from the front panel" on page 48.

■ **Use DHCP.** For more information, see "Setting IP parameters: DHCP" on page 51.

■ **Download a PostScript utility file.** For more information, see the *README* files on the printer's CD-ROM and network utilities diskettes. PC users: the *README* file for PostScript utility files is in the *UTILS* directory. Macintosh users: the *ReadMe* file for PostScript utility files in the *Network Utilities* folder.

PhaserPort software installation

Using the installer

You can install PhaserPort software using the installer on your printer's software CD-ROM. A single integrated installer is used to install printer drivers, PhaserPort, and other software.

1. Insert the printer's software CD-ROM into the CD-ROM drive.

   ■ If the Windows autorun feature is enabled, the CD-ROM launches automatically.

   ■ If the Windows autorun feature is disabled, double-click **My Computer**, then double click the CD icon to launch the CD-ROM.

2. View the brief introductory information, then click **Install Drivers** to launch the installer.

3. When you are prompted to select **Easy Install** or **Custom Install**, select **Custom Install**.

4. During custom installation, a dialog is displayed enabling you to select the options you want to install. Check the box for PhaserPort. To install the drivers and PPD files for your printer, check the box for Drivers/PPDs (this is recommended for first-time installations). Follow the on-screen prompts to complete the installation. For details, see, "Create your first port and install the driver" on page 33.

Create your first port and install the driver

1. After the port monitor is installed, the **Add PhaserPort** dialog box is displayed. Create your first port:

    a. In the **Description** field, enter a name for the port (this can be the printer name/model, location, or any other descriptive name of your choice), such as **Phaser 840**.

    b. In the **Name/Address** field, enter the IP address or DNS name of the printer (for example, 192.1.1.2).

    If you don't know the printer's IP address or DNS name, click **Browse** to display a list of printers on the network. Double-click the printer you want; PhaserPort automatically enters the information into the **Add PhaserPort** dialog. To search the network again, click **Refresh**; to narrow down the search by using subnets, click **Advanced**.

    c. Click **OK**.

2. If you have NetWare software installed on your computer, you are asked if you want to install the PhaserShare Administrator software. If you also want to print using NetWare, choose **Yes**, then click **Next**.

3. If you chose to install drivers and PPD files earlier in the installation, the **Finish Installation** dialog displays information about the Add Printer Wizard. Read the information, then click **Next** to start the Add Printer Wizard, which allows you to install the driver for your printer. The drivers are on your printer's CD-ROM.

    If you did not choose to install drivers and PPD files earlier in the installation, go to Step 5.

4. Install the driver.

    a. In the **Add Printer Wizard**, click **Next**. Choose **Local printer**, then click **Next**.

    b. Click **Have Disk**, type the drive letter for the CD-ROM, and click **OK**.

    c. Select your printer from the list, then click **Next**.

    d. In the **Available ports** list, select the port you created during the first part of the installation and click **Next**.

e. If desired, change the printer's name (the name that will show in your **Printers** window). You can also choose to make this printer your default Windows printer. Click **Next**.

f. If you are prompted to send a test page to the printer, choose **No**. Click **Finish**.

5. Complete the installation.

a. In the **Installation Completed** dialog, click **Finish**.

b. When prompted, finish the setup by registering your printer and restarting your computer.

6. The following topics provide instructions for using PhaserPort after the initial installation:

■ The next topic: "Adding a port for a new printer".

■ "Adding a port to an existing printer" on page 35.

■ "Changing a port's IP address" on page 36.

Adding a port for a new printer

Use this procedure to install a new printer and add a port for it.

1. Start the Add Printer Wizard:

a. From the **Start** menu, select **Settings**, then click **Printers**.

b. From the **Printers** window, open **Add Printer**.

2. Use the Add Printer Wizard to install the printer. When prompted, make the following choices:

■ When prompted to specify how the printer is attached, choose **Local Printer**.

■ Choose **LPT1** as the connection port.

If you are prompted to send a test page to the printer, choose **No**.

3. When you are finished with Add Printer Wizard, follow the directions in the next topic, "Adding a port to an existing printer".

Adding a port to an existing printer

Use this procedure to add a port after you have installed the printer.

1. Select your printer:

   a. From the **Start** menu, select **Settings**, then click **Printers**.

   b In the **Printers** window, right-mouse click on your printer.

2. From the pop-up menu, choose **Properties**.

3. When the properties dialog for the printer is displayed, click **Details**.

4. Click **Add Port**, then select **Other**.

5. Highlight **PhaserPort** and click **OK**; this displays the **Add PhaserPort** dialog.

   a. In the **Description** field, enter a name for the port (this can be the printer name/model, location, or any other descriptive name of your choice), such as **Phaser 840**.

   b. In the **Name/Address** field, enter the IP address or DNS name of the printer (for example, 192.1.1.2), and click **OK**.

   If you don't know the printer's IP address or DNS name, click **Browse** to display a list of printers on the network. Double-click the printer you want; PhaserPort automatically enters the information into the **Add PhaserPort** dialog. To search the network again, click **Refresh**; to narrow down the search by using subnets, click **Advanced**.

   c. Click **OK**.

6. Click **OK** again to apply the changes; the printer driver is now configured to use your new **PhaserPort**.

Changing a port's IP address

If the IP address of the printer is changed, change the IP address of the corresponding port:

1. Select your printer:

   a. From the **Start** menu, select **Settings**, then click **Printers**.

   b. In the **Printers** window, right-mouse click your printer, then click **Properties**.

2. In the **Properties** dialog, click **Details**.

3. Verify that **PhaserPort** appears in the **Print to the following port** field and click **Port Settings**.

4. In the **Configure PhaserPort** dialog, enter the correct IP address or DNS name for the printer.

   If you don't know the printer's IP address or DNS name, click **Browse** to display a list of printers on the network. Double-click the printer you want; PhaserPort automatically enters the information into the **Add PhaserPort** dialog. To search the network again, click **Refresh**; to narrow down the search by using subnets, click **Advanced**.

5. Click **OK**.

6. Click **OK** again to apply the changes.

7 *Windows NT*

The procedures in this chapter are valid for Windows NT version 3.x and 4.x. For information about driver installation for later versions of Windows NT, visit the Tektronix web site:

www.tek.com/Color_Printers/support

Setting the printer's IP address

Set the printer's IP address by any of the methods described in Chapter 8, "Setting the Printer's IP Addressing Parameters".

Adding a Windows NT 4.0 driver on a Windows NT 4.0 server or workstation

The Windows NT 4.0 PostScript driver is a PPD-based driver. Follow these instructions to add or update the Tektronix Phaser PPD (PostScript Printer Description) file for use with Windows NT 4.0. Adding this support gives your printer access to Tektronix page sizes, tray selection, TekColor color corrections, and resident fonts.

This update procedure provides printer page-size information for Windows NT applications. These instructions assume a basic familiarity with Windows NT operation and terminology. For additional information about Windows NT, refer to your Microsoft Windows NT documentation.

N O T E

You may need the Windows NT 4.0 CD-ROM or your printer's software CD-ROM to complete this procedure.

Add the printer

1. Log in as Administrator or a user with administrator privileges.

2. Click **Start**, **Settings**, and **Printers**.

3. In the **Printers** dialog box, double-click **Add Printer**.

   - If you intend to do your printer management from this computer, click **My Computer**. The rest of this procedure applies when you click **My Computer**.

   - If you intend to do your printer management from another computer, click **Network Print Server**. In this case, you need only enter the printer's name in the **Printer** field and click **OK**. The rest of this procedure does not apply.

4. Click **Next**.

5. If the printer is connected directly to the computer, select the port the printer is connected to:

   a. **LPTx** is for a parallel-printer connection.

   b. **COM** is for a serial-connected printer.

6. If this printer is connected to the network, click **Add Port**. Tektronix printers support two types of network ports, LPR and AppleTalk. The next topic covers LPR ports; for information on AppleTalk ports, see "Creating an AppleTalk port" on page 39.

Creating an LPR port

1. To connect via TCP/IP, double-click **LPR Port** in the **Printer Ports** dialog box. If **LPR Port** is not listed in this box, the Microsoft TCP/IP Printing Service must be installed on the NT machine:

    a. Click **Start**, **Settings**, **Control Panel**, and **Network**.

    b. Click **Services**, then click **Add**.

    c. Select **Microsoft TCP/IP Printing**, then click **OK** and install this service. The original Windows NT distribution CD-ROM is needed during installation.

N O T E

> The TCP/IP protocol must also be installed on the server. Click the **Protocol** tab to verify if it is installed. See your Windows NT documentation for details. Reboot Windows NT after installing TCP/IP.

2. In the **Add LPR compatible printer** dialog box, enter the printer's IP address or DNS name in the box labeled **Name or address of server providing lpd**. In the box marked **Name of printer or print queue on that server**, enter **PS** or **AUTO** in uppercase. Click **OK**.

3. When returned to the **Printer Ports** box, click **Close**.

4. At the **Add Printer Wizard** dialog box, click the box next to this new port; a check mark is added. Click **Next**.

Creating an AppleTalk port

1. In the **Printer Port** dialog box, double-click **AppleTalk Printing Devices**.

2. In the **Available AppleTalk Printing Devices** dialog box, select the zone where the printer resides. If no zone name appears, double-click the zone icon.

3. Windows NT searches for all AppleTalk devices in that zone and displays a list; double-click your printer.

4. Windows NT prompts you to capture the printer; click **No**. (Capturing the printer causes it to disappear from the **Chooser**.)

5. After adding the printer port, click the box next to the new port to select it; click **Next**.

Install the driver

1. In the **Add Printer Wizard** dialog box, click **Have Disk** to add a new Tektronix driver.

2. Type the path name to the driver files. This can be `A:\` if the files are on a diskette. If these files were downloaded from an on-line service, type the path name where they were saved. Click **OK**.

3. Select the printer model and click **Next**.

4. If prompted that a driver is already installed for this printer, select **Replace existing driver**. Click **Next**.

Name the printer and set up sharing

1. Type the printer's name; this can be any name you want. If the Windows-based applications are to use this printer as the default printer, click the appropriate box. Click **Next**.

2. If this printer is to be shared on the network, click **Shared** and click all applicable platforms that may be printing to this printer. If desired, enter a **Share Name** for the printer. If the printer is a local printer only, click **Not shared**. Click **Next**.

Windows NT creates the printer

1. If you want Windows NT to print a test page after installing the printer driver, click **Yes** (recommended). If you do not want the Windows NT test page, click **No**. When finished, click **Finish**.

2. At this point, Windows NT is ready to create the printer. You may need the original Windows NT distribution CD-ROM or your printer's software CD-ROM to complete this step. Once the CD-ROM is installed, type the drive letter or path name to the files requested. On the Windows NT CD-ROM, the files are usually in the *I386* directory for Intel-based Windows NT servers. Click **OK**.

3. If you chose to have a test page printed in Step **1**, check to see if it printed. If the test page printed, click **OK**.

Adding a Windows NT 4.0 driver on an NT 3.51 server

N O T E

For proper installation, use the latest Windows NT 3.51 drivers and Windows NT 4.0 drivers, available from the Tektronix web site:

www.tek.com/Color_Printers/support/software.html

The following procedure describes how to set up the Windows NT 3.51 server to automatically load a Windows NT 4.0 driver on a Windows NT 4.0 client.

N O T E

You must have Administrator access on the Windows NT 3.51 server.

Add the printer

1. From a Windows NT 4.0 client, click the right-mouse button on **Network Neighborhood**. Select **Find Computer**.

2. Type the name of the Windows NT 3.51 server. Press **Enter**.

3. Double-click the Windows NT 3.51 server icon.

4. Double-click the Windows NT 3.51 server's **Printers** folder.

5. In the Windows NT 3.51 server's **Printers** folder, double-click **Add Printer**.

N O T E

If you do not have an **Add Printer** icon, then you are not logged on with an account that has Administrator access on the Windows NT 3.51 server.

The first **Add Printer Wizard** dialog box should say **Remote print server <*3.51 server name*>**.

6. Select the port where the printer is connected.

N O T E

You cannot create a port on the Windows 3.51 server from the Windows 4.0 client; create the port on the Windows 3.51 server. After the port is created, you can select that port from the Windows 4.0 client.

Install the driver

1. In the **Add Printer Wizard** dialog box, click **Have Disk** to add a new Tektronix driver.

2. Type the path name to the driver files. This can be `A:\` if the files are on a diskette. If these files were downloaded from an on-line service, type the path name where they were saved. Click **OK**.

3. Select the printer model and click **Next**.

Enter the printer's name and set up sharing

1. Type the printer's name; this can be any name you want. Click **Next**.

2. If this printer is to be shared on the network, click **Shared** and highlight all applicable platforms that may be connecting to this server (**Windows NT 4.0 x86** should be one). If desired, enter a **Share Name** for the printer.

Windows NT creates the printer

1. If you want Windows NT to print a test page after installing the printer driver, click **Yes** (recommended). If you do not want the Windows NT test page, click **No**. When finished, click **Finish**.

2. When prompted for the Windows NT 3.51 CD-ROM, insert it into your computer's CD-ROM drive and click **OK**.

3. Type the path name to the driver.

N O T E

For proper installation, you must use the latest Windows NT 3.51 drivers and Windows NT 4.0 drivers, which are available from the Tektronix web site:

www.tek.com/Color_Printers/support/software.html

The printer should now exist on the Windows NT 3.51 server and have Windows NT 4.0 drivers available. Now any Windows 4.0 client can use that shared printer, and the driver is installed automatically.

Adding a Windows NT 3.x driver

This update procedure provides printer page size information for Windows NT applications. However, TekColor color corrections and other PostScript Level 2 features are not supported by the Windows NT driver. Refer to your printer's user documentation for instructions on other ways of selecting color corrections. Refer to your Microsoft Windows NT documentation for details on features in the Windows NT driver.

These instructions assume a basic familiarity with Windows NT operation and terminology. For additional information about Windows NT, refer to your Microsoft Windows NT documentation.

1. Start your system with **Windows NT**.

2. From the **Main** window, double-click the **Print Manager** icon.

3. Install the Tektronix printer. From the **Printer** menu, select **Create Printer**; the **Create Printer** dialog box appears.

4. Under **Driver**, scroll to the end of the list and select **Other**; the **Install Driver** dialog box appears.

5. When prompted, do one of the following.

    ■   **If you are using the printer's CD-ROM:** Type the CD-ROM drive location. Click **OK**; the **Select Driver** dialog box appears.

    ■   **If you are using the printer's software for Windows diskette:** Type the diskette drive location. Click **OK**; the **Select Driver** dialog box appears.

6. Under **Printer Driver**, choose your printer from the list, then click **OK**.

N O T E

If you are using older drivers, you get a series of **Noncritical Errors** stating that Windows NT is unable to open the *PSCRIPT.DLL* file and the *PSCRIPT.DRV* files. Click **Ignore** or update your driver.

7. Under **Print to**, scroll to the end of the list and select **Other**; the **Printer port** dialog box appears. Tektronix printers support two types of network ports in Windows NT: LPR and AppleTalk. The next topic covers LPR ports; for information on creating an AppleTalk port, see "Creating an AppleTalk port" on page 45.

Creating an LPR port

1. In the **Printer Port** dialog box, click the **LPR** port. If the LPR port is not listed in the **Printer Port** dialog box, the Microsoft TCP/IP Printing Service needs to be added to the Windows NT machine:

   a. In **Control Panel**, double-click **Network**; the **Network Settings** dialog box appears.

   b. In **Network Settings**, click **Add Software**; the **Add Network Software** dialog box appears.

   c. In the **Add Network Software** dialog box, click the drop-down menu for **Network Software**. In the list, select **TCP/IP Protocol and Related Components**, then click **Continue**; the **TCP/IP Installation** dialog box appears.

   d. In the **TCP/IP Installation** dialog box, select **TCP/IP Network Printing Support**. (Consult your Windows NT documentation for information on other TCP/IP options.)

   e. Click **Continue** to install this service. The original Windows NT distribution diskettes are needed during installation. To apply these changes, restart Windows NT.

2. In the **Add LPR compatible printer** dialog box, enter your printer's IP address in the field named **Name or address of server providing lpd**. In the field named **Name of printer or print queue on that server**, enter **PS** or **AUTO** in UPPERCASE letters.

Creating an AppleTalk port

1. In the **Printer Port** dialog box, double-click the **AppleTalk Printing Devices** port. If the **AppleTalk Printing Devices** port is not listed in the **Printer Port** dialog box, the Microsoft Services for Macintosh needs to be added to the Windows NT machine:

    a. In the **Control Panel**, double-click **Network**; the **Network Settings** dialog box appears.

    b. In the **Network Settings** dialog box, click **Add Software**; the **Add Network Software** dialog box appears.

    c. In the **Add Network Software** dialog box, click the drop down menu for **Network Software**. In the list, select **Services for Macintosh**, then click **OK** to install the service. The original Windows NT distribution diskettes are needed during installation. To apply these changes, restart Windows NT.

2. In the **Available AppleTalk Printing Devices** dialog box, select the zone where the printer resides. If no zone name appears, double-click the zone icon.

3. Windows NT searches for all AppleTalk devices in that zone and displays a list; double-click your printer.

4. Windows NT prompts you to capture the printer; click **No**. (Capturing the printer causes it to disappear from the **Chooser**.)

Set up sharing

If this printer is to be shared on the network, perform the following steps:

1. In the **Create Printer** dialog box, check the option **Share this printer on the network**.

2. Enter any name you want for the **Share Name**.

8

Setting the Printer's IP Addressing Parameters

You can set the printer's IP address and other IP parameters by any of the following methods:

- **Use the printer's front panel.** See "Setting IP parameters from the front panel" on page 48.

- **Server-based printer configuration.** Uses RARP (Reverse Address Resolution Protocol), BOOTP (Boot Parameter Protocol), or DHCP. When turned on or reset, the printer receives its IP addressing information from a boot server. See "Setting IP parameters: RARP or BOOTP" on page 49 or "Setting IP parameters: DHCP" on page 51.

- **Printer-based printer configuration (using a downloaded configuration file).** Can be used on hosts that do not have RARP, BOOTP, or DHCP. For UNIX, use a Tektronix-provided shell script to prepare a configuration file. When you send the file to the printer, you store the IP addressing information in the printer's internal memory, where the printer reads it when reset. See "Setting IP parameters: PostScript utility file (UNIX only)" on page 54.

- PC and Macintosh users can also set IP parameters using PostScript utility files; see the *README* files on the printer's CD-ROM or diskettes. The PC *README* file is in the *UTILS* directory; the Macintosh *README* file is in the *Network Utilities* folder.

- **Printer-based printer configuration (using PhaserLink Printer Management Software).** After setting the printer's IP address by one of the other three methods listed here, you can perform the rest of the TCP/IP configuration using PhaserLink Printer Management Software, if you have a World Wide Web browser. See "Setting IP parameters: PhaserLink Printer Management Software" on page 56.

NOTE

When two or more IP addressing methods are used simultaneously, the printer uses the first address that it successfully obtains.

Obtain the information listed in the following table. It might be helpful to write down this information so you can refer to it during the configuration procedure.

Information for TCP/IP configuration

Information	Comments
Internet (IP) address for the printer	Format is x.x.x.x, where x represents a decimal number from 0 - 255.
Network mask	If you are unsure, leave this blank; the printer will choose an appropriate mask.
Broadcast address	If you are unsure, leave this blank; the printer computes an appropriate broadcast address.
	The address the printer uses to **send** broadcast packets. Regardless of how this parameter is set, the printer **accepts** broadcast packets from any of the commonly used broadcast address conventions.
Gateway IP address	Router address. You need this address if you want to communicate with the printer from anywhere other than the local network segment.

Setting IP parameters from the front panel

1. When the front panel displays **READY TO PRINT**, press the down-arrow button until **Menu** is highlighted. Press **Select**.

2. Press the down-arrow button until **Printer Configuration** is highlighted. Press **Select**.

3. Press the down-arrow button until **Network Settings** is highlighted. Press **Select**.

4. Press the down-arrow button until **TCP/IP** is highlighted. Press **Select**.

5. **Set the IP address:**

   a. Press the down-arrow button until **IP Address** is highlighted. Press **Select**.

   b. Press the left- or right-arrow buttons to highlight the 3-digit part of the address that you want to set. Press the up- or down-arrow keys to change the numbers.

   c. When the address is set, press **Select**.

6.   **Set the network mask:**

    a.   Press the down-arrow button until `NW Mask` is highlighted. Press **Select**.

    b.   Press the left- or right-arrow buttons to highlight the 3-digit part of the address that you want to set. Press the up- or down-arrow keys to change the numbers.

    c.   When the address is set, press **Select**.

7.   **Set the default router/gateway address:**

    a.   Press the down-arrow button until `Default Router/Gateway Address` is highlighted. Press **Select**.

    b.   Press the left- or right-arrow buttons to highlight the 3-digit part of the address that you want to set. Press the up- or down-arrow keys to change the numbers.

    c.   When the address is set, press **Select**.

8.   To return the printer to normal operation, press the down-arrow button until `Exit` is highlighted. Press **Select**.

Setting IP parameters: RARP or BOOTP

With this method, configuration information is sent to the printer over the Ethernet or Token Ring connection via RARP or BOOTP, depending on which protocol your host supports. This is called Dynamic Address Resolution.

You store the printer's configuration information in a configuration file such as an *ethers* or *bootptab* file on a boot server. On power-up, the printer issues RARP and BOOTP requests and receives the configuration information from the server in the RARP or BOOTP response.

The RARP response contains only IP address information. After the printer has its address information, you can set other TCP/IP parameters by either of two methods:

■   With a TCP/IP connection and a World Wide Web browser, you can use PhaserLink Printer Management Software; see "Setting IP parameters: PhaserLink Printer Management Software" on page 56.

■   Send PostScript files to the printer using your host spooler. UNIX shell scripts for creating the PostScript files are provided with your printer's network utilities software. See "Setting IP parameters: PostScript utility file (UNIX only)" on page 54. For PC environments, the PostScript file *IPCONFIG.PS* is in the *UTILS* directory on your printer's CD-ROM or network utilities diskettes.

N O T E

The printer's BOOTP and RARP implementations do not support booting across a router. The BOOTP or RARP server (host) and client (printer) must be connected to the same Token Ring or Ethernet segment, or to segments interconnected only by repeaters and/or bridges. However, with certain hosts (such as OS/2) on Token Ring networks, the server and the client must be on the same Token Ring. Furthermore, the printer's BOOTP and RARP implementations do not support booting between Token Ring and Ethernet segments.

1.   Store the printer's configuration information in an *etc/ethers* or */etc/bootptab* file.

2.   Connect the printer to the network.

3.   Turn on the printer. At power up, the printer issues RARP and BOOTP requests and receives the configuration information from the host in the RARP or BOOTP response.

Setting IP parameters: DHCP

DHCP (Dynamic Host Configuration Protocol) is a system in which Windows NT servers can allocate IP addresses dynamically. Under DHCP, the server gives the printer (called a DHCP client) an IP address when the printer is reset.

Installing the DHCP server

1. In **Control Panel:Network**, select **Add Software**.

2. Select **TCP/IP components**.

3. In the second window that is displayed, select **DHCP server**.

Setting up a DHCP server

1. Access your DHCP management utility:

   ■ **Windows NT 4.x.** Click **Start**; select **Programs**, then **Administrative Tools (Common)**. Select **DHCP Manager**.

   ■ **Windows 3.5x.** Go to the **Network Administration** group and select **DHCP Manager**.

2. Configure DHCP with a *scope*; a scope is a range of IP addresses available for allocation to DHCP clients. For example, the scope could be the IP addresses 192.2.194.101 through 192.2.194.254.

   Defining a scope in Windows NT 4.x

   a. Click **Start**, **Programs**, **Administrative Tools**, **DHCP Manager**.

   b. Double-click **Local Machine**.

   c. Click **Scope**, **Create**.

   d. Enter the IP information to define the scope.

Defining a scope in Windows NT 3.5.x

a. Open the **Network Administration** group.

b. Double-click **DHCP Manager**.

c. Double-click **Local Machine**.

d. Click **Scope**, **Create**.

e. Enter the IP information to define the scope.

3. Define the *lease*. A lease is a pre-determined time that the printer holds the IP address. When the lease time expires, the printer queries the DHCP server again to renew its lease of the IP address. It is recommended that you set the lease to **Unlimited**.

4. Define a name for the scope. You are prompted to activate the newly created scope; answer **Yes**.

5. Restart the DHCP server:

a. In **Control Panel:Services**, scroll to **DHCP Server**.

b. Click **Stop**; click **Start**.

c. Click **Close**.

6. Turn on the printer. The printer receives its IP address from the server. Print a Configuration Page to obtain the IP address ("Printing a Configuration Page" on page 2).

7. Using **Add Printer Wizard** (Windows NT 4.0) or **Print Manager** (Windows NT 3.5x), verify that a Windows NT printer port refers to the printer's IP address or DNS name. See Chapter 7, "Windows NT" for more information.

8. Configure the printer's DHCP client software.

DHCP transactions

■   On power up or reset, the printer sends a *DHCP discover packet*, indicating its Ethernet address and requesting an IP address.

■   The DHCP server responds to the discover packet with a *DHCP offer packet*, which contains an IP address from within the assigned scope and the assigned lease.

■   The printer examines the DHCP offer packet and decides whether to accept the lease. The printer sends a *request packet*, accepting the IP address and the lease.

N O T E

There can be multiple DHCP servers on the same network, each defining its own scopes and leases. The printer selects the first lease offered.

■   The DHCP server sends an *acknowledgment packet* to the printer, which completes the transaction.

Supported BOOTP/DHCP fields

The printer recognizes the BOOTP/DHCP fields listed in the following table.

Field	Description	Values
gw	Gateway address list	List of IP addresses separated by spaces.
ha	Hardware address	Hexadecimal; the *ha* tag must be preceded by the *ht* tag.
ht	Hardware type (see Assigned Numbers RFC)	Unsigned decimal, octal, or hexadecimal integer, or one of the following symbolic names: **For UNIX Ethernet:** *ethernet* or *ether* for 10-Mbit Ethernet (DIX encapsulation); *ieee802* for IEEE 802 Ethernet (SNAP encapsulation). **For UNIX Token Ring:** *token ring* **For OS/2 Ethernet or Token Ring:** *ether*
ip	IP address	Single IP address.
lg	Log host address(es)	List of IP addresses separated by spaces.
sm	Subnet mask	Single IP address.
dn	IP domain name	Single domain name.
ds	DNS server IP address	Printer recognizes up to two IP addresses, separated by spaces.

Setting IP parameters: PostScript utility file (UNIX only)

Use the *config-IP* script to create a PostScript file that sets the printer's IP addressing parameters. The *config-IP* script is provided with your printer's network utilities software.

■ The output of the script is PostScript code, which you must send to the printer. When you run the script, redirect the output to a file. Then send the file to the printer.

■ The script prompts you to provide certain information. For information about these prompts, see the next table "IP parameters".

The advantage of this method is that each printer has a permanent setup stored in memory and is not dependent on a boot server for boot information. The disadvantage is that you must configure each printer individually.

Before performing this procedure, install the files from your printer's network utilities software on to your host computer. If you have not already installed the files, see "Extracting files from unix.tar" on page 30.

The IP parameters are listed in the following table. For the procedure, see the next topic, "Running the config-IP script".

IP parameters

Parameter	Description
Use RARP	Yes/no. Specifies whether the printer should get its IP address from a RARP response at power-up (default is **yes**). Answer **no** for a printer-based configuration; this prevents RARP packets from appearing on the network when the printer is turned on or reset.
Use BOOTP/DHCP	Yes/no. Specifies whether the printer should get its IP address from a BOOTP or DHCP response at power-up (default is **yes**). Answer **no** for a printer-based configuration; this prevents BOOTP or DHCP packets from appearing on the network when the printer is turned on or reset.
IP address	Printer's address on a network. Format is x.x.x.x, where x represents a decimal number from 0 - 255. Must be a valid IP address and not 0.0.0.0, 255.0.0.0, any address starting with 127, or any address ending with 255.
Network mask	Needed in networks that use sub-netting. If you are not using sub-netting, leave this blank; the printer will choose an appropriate mask. Format is *x.x.x.x,* where *x* represents a decimal number from 0 - 255.
Broadcast address	Address the printer uses to send broadcast packets. Format is *x.x.x.x,* where *x* represents a decimal number from 0 - 255. If you are unsure, leave this blank; the printer chooses an appropriate address.
Default gateway (router)	Address the printer uses to communicate with devices not on the same network segment. Format is *x.x.x.x*, where *x* represents a decimal number from 0 - 255.

Running the *config-IP* script

1. Connect the printer to a network. ARP (Address Resolution Protocol) requires that the printer be connected on the same physical network segment as the host.

2. Run the script *config-IP*:

    a. In the directory where you placed your printer's network utilities, change (**cd**) to the *bin* subdirectory.

    b. Type the name of the script, redirecting the output to a file. Type:

    > **config-IP >** *filename*

3. Enter the information when prompted by the script.

N O T E

The script accepts IP addresses that have empty fields (for example, 123..40.10). The script does not detect this error. Double-check the IP addresses you enter.

4. Log in as **root**.

5. Make an entry into the host's ARP table defining the printer's IP/hardware address pair. In general, this requires a command corresponding to one of the following examples:

    > **arp -s** *printer-IP-address hardware-address*   (for BSD systems)
    >
    > *or*
    >
    > **arp -s ether** *printer-IP-address hardware-address*   (for System V)

    See your host system documentation for specifics of this command.

N O T E

The hardware address in the **arp** command example is the printer's Ethernet Address for PhaserShare Ethernet interfaces or the Token Ring Address for PhaserShare Token Ring cards.

6. Turn on the printer.

7. Execute the **ping** command from the host:

    ping *printer-IP-address*

8. Use the host spooling system (for example, **lpr** or **lp**) to send to the printer the file you created in Step **2b**. This stores the IP addressing information in the printer's internal memory, where it is retained over a reset or power cycle. (For more information on setting up queues, see "Assigning a print queue to the printer" on page 25.)

9. Reset the printer.

Setting IP parameters: PhaserLink Printer Management Software

After setting the printer's IP address by one of the methods described previously in this chapter, you can perform the rest of the TCP/IP configuration using PhaserLink Printer Management Software, if you have a World Wide Web browser. For more information on PhaserLink Printer Management Software, see Chapter 9, "PhaserLink Printer Management Software".

1. From the printer's home page, click **Configuration**; this displays the **View and Configure Settings** page.

2. From the **View and Configure Settings** page, click **View and Configure Interface Settings**; this displays the **View and Configure Interface Settings** page.

3. From the **View and Configure Interface Settings** page, click **View and Configure TCP/IP Settings**; this displays the **View and Configure TCP/IP Settings** page.

4. Enter your printer's settings. If you make an error, click **Restore Initial Form Values** and start again.

5. When you are finished entering the settings, enter the **Validation Password** (if one has been set) and click **Do/Apply**.

6. The printer responds by displaying a dialog box that allows you to reset the printer. The new parameters will not take effect until the printer is reset.

DNS

The printers support Domain Name Services (DNS) through an embedded DNS stub resolver. The DNS resolver protocol communicates with one or more DNS servers to request the IP address for a given host name or the host name for a given IP address.

To use an IP host name for the printer, the system administrator must have already configured one or more DNS servers and a local DNS domain name space data base.

To set up the printer for DNS, supply an IP domain name and up to two DNS name server IP addresses. There are three ways to set up the printer:

- BOOTP. See "Setting IP parameters: RARP or BOOTP" on page 49.

- DHCP. See "Setting IP parameters: DHCP" on page 51.

- With TCP/IP, you can use PhaserLink. See the next topic, "Setting up the printer for DNS using PhaserLink Printer Management Software".

Setting up the printer for DNS using PhaserLink Printer Management Software

After setting the printer's IP address by one of the methods described previously in this chapter, you can set up the printer for DNS using PhaserLink Printer Management Software, if you have a World Wide Web browser. For more information on PhaserLink Printer Management Software, see Chapter 9, "PhaserLink Printer Management Software".

1. From the printer's home page, click **Configuration**; this displays the **View and Configure Settings** page.

2. From the **View and Configure Settings** page, click **View and Configure Interface Settings**; this displays the **View and Configure Interface Settings** page.

3. From the **View and Configure Interface Settings** page, click **View and Configure TCP/IP Settings**; this displays the **View and Configure TCP/IP Settings** page.

4. Set the **Domain Name Service Resolver Enabled** field to **Yes**.

5. Enter the following information:

   ■ Primary Name Server IP Address (required)

   ■ Second Name Server IP Address (optional)

   ■ IP Domain Name (required)

   ■ Additional Search Domain Name(s) (optional)

6. When you are finished entering the settings, enter the **Validation Password** and click **Do/Apply**.

7. The printer displays a dialog box that allows you to reset the printer. New parameters will not take effect until the printer is reset.

9

PhaserLink Printer Management Software

PhaserLink Printer Management software is a printer administration and support tool using World Wide Web technology. With PhaserLink software, you can access printer status and manage your printer over a TCP/IP network using a web browser. PhaserLink Printer Management software gives you the following capabilities:

■   Receive printer status and manage your printer over the network using a standard web browser.

■   Define a link to your local web server's support page.

■   Access on-line manuals and technical support information by using built-in links to the Tektronix web site.

PhaserLink Printer Management software provides an easy-to-use, consistent interface that you can use for most of the configuration tasks described throughout this guide.

Accessing printer information from a browser

Once a TCP/IP connection to the printer has been established and the printer's IP address is set, you can visit the printer's home page from your web browser by entering the printer's URL (Uniform Resource Locator), just as you would to visit any web site. The printer's default URL is listed here:

http://*printer's-IP-address***/**

where *printer's-IP-address* is the IP address you set during TCP/IP configuration.

N OTE

Some platforms and browsers allow you to set a name/IP address pair in the UNIX host table (or equivalent name-server database on a non-UNIX host); the printer's name can be used in place of the IP address in the URL. For example:

http://Phaser840-Marketing/

PhaserLink Printer Management software help files

Most PhaserLink pages allow you to view and set printer parameters through fields. HTML files containing descriptions of the fields are supplied on the printer's CD-ROM in the *PHLINK* directory, where the file *PLHOME.HTM* is the home page for the help files. These files can be viewed using any browser that supports HTML 3.0.

If you copy these PhaserLink software help files to your local web server, then define that server as your local link, PhaserLink users can access the help files from the printer's PhaserLink **Help** page.

Configuring PhaserLink Help

1. Copy the PhaserLink help files from the printer's CD-ROM to your local web server. Note the URL for the PhaserLink Help home page, *PLHOME.HTM*.

2. Access the printer's **Status** page by entering the printer's URL into your browser. See "Accessing printer information from a browser" on page 59 for more information.

3. Click **Configure**; this displays the **View and Configure Settings** page.

4. Click **Define Local HTTP Link**; this displays the **Define Local HTTP Link** page.

5. Enter the URL that you have set up for the PhaserLink Help home page. If you have configured PhaserLink to require a password, enter it into the **Password** field. Then click **Do/Apply**.

N O T E
  PhaserLink passwords are not encrypted.

Accessing PhaserLink Help

When the PhaserLink Help home page has been defined as a local link, as described in the previous procedure, users can access PhaserLink Help this way:

1. Click **Help**; this displays the **Help** page.

2. On the **Help** page, click **local HTTP link**; this displays the PhaserLink Help home page.

Setting printer parameters: PhaserLink software pages

If there are read-write parameters on the page, there is a field at the bottom of the page for a validation password. By default, the password is a NULL string (no characters). The password is common across all PhaserLink software pages.

N O T E

PhaserLink passwords are not encrypted.

■ If you enter an invalid password, the printer reports an error. The **Validation Password** link displays the **Set Administrator Password** page, which you can use to change the password.

■ Click **Restore Initial Form Values** to restore all values on the page to their previous settings.

■ To transmit changes to the printer, click **Do/Apply**.

Information Forwarding

When you click a link that connects you to the Tektronix web server, the Information Forwarding feature causes the printer to send the following printer status information back to the Tektronix server:

■ Printer model

■ Firmware version

■ Printer ID number

■ Page count

■ Language

■ Serial Number

Transmitting this information back to the Tektronix server ensures the quickest connection to relevant product and update information. Tektronix may store this information to serve you better in the future.

Disabling Information Forwarding

1. Display the **View and Configure Information Forwarding** page.

2. Select **No** from the **Information Forwarding Enabled** menu button.

3. If a validation password has been assigned, enter the password to make the change to take effect.

   N O T E
   PhaserLink passwords are not encrypted.

4. Click the **Do/Apply** button.

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