

Connections and Internet Protocol (TCP/IP)

- "Overview of Network Setup and Configuration" on page 3-2
- "Choosing a Connection Method" on page 3-3
- "Connecting via Ethernet (Recommended)" on page 3-3
- "Connecting via USB" on page 3-4
- "Configuring the Network Address" on page 3-5
- "infoSMART Knowledge Base Documents (English only)" on page 3-8

This topic includes connecting the printer to the network via Ethernet, USB or Parallel, then configuring the printer's TCP/IP or AppleTalk/EtherTalk address for the particular network and operating system.

Overview of Network Setup and Configuration

Network connection and configuration steps are performed in the following order.

1. Turn the printer and the computer **On**, if you are connecting via Ethernet or USB. If you are using a Parallel connection, connect the cable to the printer and the computer while they are both **Off**, then turn them **On**.
2. Connect the printer to the network using the recommended hardware and cables.
3. Configure the printer's network address, which is required to identify the printer on the network. Run the Installer on the *Printer Installer and Utilities CD-ROM* to automatically set the printer's IP address, if the printer is connected to an established TCP/IP network.

If you do not want to run the Installer to automatically set the IP address, you can do one of the following:

- For Windows operating systems, use TCP/IP to manually set the printer's IP address.
 - For Macintosh, use TCP/IP or AppleTalk/EtherTalk to set the printer's network address.
4. Install the driver software on the computer from the *Printer Installer and Utilities CD-ROM*. For information on driver installation, see the section in this chapter for the specific operating system you are using.

Note

If the *Printer Installer and Utilities CD-ROM* is not available, you can download the latest driver from www.xerox.com/office/drivers.

Choosing a Connection Method

You can connect the printer to the network via Ethernet or USB. Some printer models also support using a Parallel cable connection. Hardware and cabling requirements vary for the different connection methods. Cabling and hardware listed below are generally not included with your printer and must be purchased separately.

Ethernet

Ethernet can be used for one or more computers. It supports many printers and computers on an Ethernet network.

USB

If you are connecting to one computer, a USB connection offers fast data speeds. However, a USB connection is not as fast as an Ethernet connection. To use USB, PC users must have Microsoft Windows 98 SP2, SE, Windows Me, Windows XP or Windows 2000. Macintosh users must use OS 9.x or later.

Parallel

A Parallel cable connection can also be used for connecting to one computer. This type of connection provides the slowest data speeds. Parallel connection requires a standard-to-high density Parallel printer cable, (36-pin high-density 1284-C [male] to 36-pin low density 1284-B [male] cable), with a maximum length of 10 feet (three meters). Connect the Parallel cable to the printer and the computer while they are both **Off**, then turn them **On**, install the printer driver from the *Printer Installer and Utilities CD-ROM*, and select the appropriate LPT Parallel port.

Connecting via Ethernet (Recommended)

An Ethernet connection is recommended because it is faster than a USB connection. It also allows the user direct access to CentreWare Internet Services (IS). CentreWare IS provides a simple interface that enables you to manage, configure, and monitor networked printers from your desktop using an embedded web server. For complete information about CentreWare IS, click the **Help** button in CentreWare IS to go to the *CentreWare IS Online Help*.

Network Connection

Depending on your particular setup, the following hardware and cabling is required for Ethernet.

- If you are connecting to one computer, an Ethernet “crossover” RJ-45 cable is required.
- If you are connecting to one or more computers with a hub, an Ethernet hub and two twisted-pair (category 5/RJ-45) cables are required.
- If you are connecting to one or more computers using a cable or DSL router, a cable or DSL router and two or more twisted-pair (category 5/RJ-45) cables are required. (One cable for each device.)

If you are connecting to one or more computers with a hub, connect the computer to the hub with one cable, then connect the printer to the hub with the second cable. Connect to any port on the hub except the uplink port.

TCP/IP and EtherTalk are the most common protocols used with Ethernet. To print using TCP/IP, each computer and printer requires a unique IP address. For more information, see "Configuring the Network Address" on page 3-5.

Standalone (Cable or DSL) Network Connection

For information about setting up a cable or DSL connection for your printer, go to the table of [infoSMART Knowledge Base documents](#) at the end of this section.

Connecting via USB

A USB connection requires a standard A/B USB cable. This cable is not included with your printer and must be purchased separately. Verify that you are using the correct USB cable for your connection.

Windows 98 or Later and Windows 2000 or Later

1. Connect the USB cable to the printer and turn it **On**.
2. Connect the USB cable to the PC and follow the **Add New Hardware Wizard** to create the USB port.
3. Follow the **Add Printer Wizard** to install the driver from the *Printer Installer and Utilities CD-ROM*.

For more information, go to the table of [infoSMART Knowledge Base documents](#) at the end of this section.

Macintosh OS 9.x

A USB-connected printer does not display in the Chooser.

1. Install the driver from the *Printer Installer and Utilities CD-ROM*.
2. Use the **Desktop Printer Utility** to create a desktop USB printer. The utility is located in the **PhaserTools** folder which is created during the software installation.

For more information, go to the table of [infoSMART Knowledge Base documents](#) at the end of this section.

Macintosh OS X (10.1 and Higher)

1. Install the driver from the *Printer Installer and Utilities CD-ROM*.
2. Open the **Print Center** utility. In Macintosh OS X, version 10.3 or higher, the utility is called **Printer Setup**. To locate utilities on the Macintosh hard drive, open the **Applications** folder, then open the **Utilities** folder.
3. Click the **Add** button.
4. Select **USB** from the top drop-down list.

5. Select the printer in the printers window.
6. Verify that your printer is set to **Auto Select**.
7. Click the **Add** button.

The printer is displayed as an available printer in the **Print Center/Printer Setup**.

For more information, go to the table of [infoSMART Knowledge Base documents](#) at the end of this section.

Configuring the Network Address

TCP/IP and IP Addresses

If your computer is on a large network, contact your network administrator for the appropriate TCP/IP addresses and additional configuration information.

If you are creating your own small Local Area Network or connecting the printer directly to your computer using Ethernet, follow the procedure for automatically setting the printer's Internet Protocol (IP) address.

PCs and printers primarily use TCP/IP protocols to communicate over an Ethernet network. With TCP/IP protocols, each printer and computer must have a unique IP address. It is important that the addresses are similar, but not the same; only the last digit needs to be different. For example, your printer can have the address 192.168.1.2 while your computer has the address 192.168.1.3. Another device can have the address 192.168.1.4.

Generally, Macintosh computers use the EtherTalk protocol to talk to a networked printer. Unlike TCP/IP, EtherTalk does not require printers or computers to have IP addresses.

Many networks have a Dynamic Host Configuration Protocol (DHCP) server. A DHCP server automatically programs an IP address into every PC and printer on the network that is configured to use DHCP. A DHCP server is built into most cable and DSL routers. If you use a cable or DSL router, see your router's documentation for information on IP addressing.

For more information, go to the table of [infoSMART Knowledge Base documents](#) at the end of this section.

Automatically Setting the Printer's IP Address

If the printer is connected to a small established TCP/IP network without a DHCP server, use the Installer on the *Printer Installer and Utilities CD-ROM* to detect or assign an IP address to your printer. For further instructions, insert the *Printer Installer and Utilities CD-ROM* into your computer's CD-ROM drive. After the Installer launches, follow the prompts for installation.

Note

For the automatic Installer to function, the printer must be connected to an established TCP/IP network.

Dynamic Methods of Setting the Printer's IP Address

You can set the printer's IP address using any of the following methods. DHCP is enabled by default on all Phaser printers.

- DHCP
- CentreWare IS
- AutoIP

Information Required for Manual IP Addressing

Information	Comments
Internet Protocol (IP) address of the printer	Format is <i>xxx.xxx.xxx.xxx</i> , where <i>xxx</i> represents a decimal number from 0–255.
Network Mask	If you are unsure, leave this blank; the printer chooses an appropriate mask.
Default Router/Gateway address	Router address is required to communicate with the host device from anywhere other than the local network segment.

Enabling DHCP on the Printer

Verify that the printer DHCP protocol is enabled by setting the printer's front panel or by using CentreWare IS. DHCP is enabled by default on all Phaser printers.

Note

To determine the printer's IP address, select **Printer Identification** at the front panel. For information about the front panel, go to [Reference/Features](#) on the *User Documentation CD-ROM*.

Changing or Modifying the IP Address Using CentreWare IS

CentreWare IS provides a simple interface that enables you to manage, configure, and monitor networked printers from your desktop using an embedded web server. For complete information about CentreWare IS, click the **Help** button in CentreWare IS to go to the *CentreWare IS Online Help*.

After setting the printer's IP address, you can modify TCP/IP settings using CentreWare IS.

1. Launch your web browser.
2. Enter the printer's IP address in the browser's **Address** field (<http://xxx.xxx.xxx.xxx>).
3. Select **Properties**.
4. Select the **Protocols** folder on the left sidebar.
5. Select **TCP/IP**.
6. Enter or modify the settings, then click **Save Changes** at the bottom of the page.

Using Host Names with the Domain Name Service (DNS)

The printer supports DNS through an embedded DNS resolver. The DNS resolver protocol communicates with one or more DNS servers to resolve 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 configure one or more DNS servers and a local DNS domain name space database. To set up the printer for DNS, supply a maximum of two DNS name server IP addresses.

Dynamic Domain Name Service (DDNS)

The printer supports Dynamic DNS through DHCP. You must have DHCP enabled on the printer for DDNS to function. Your network's DHCP server must also support Dynamic DNS updates through option 12 or option 81 support. See your network administrator for details.

1. Launch your web browser.
2. Enter the printer's IP address in the browser's **Address** field (<http://xxx.xxx.xxx.xxx>).
3. Select **Properties**.
4. Select the **Protocols** folder on the left sidebar.
5. Select **TCP/IP**.
6. In the BOOTP/DHCP Settings section, set the **BOOTP/DHCP** option to **ON**.
7. To enable DDNS, enter the following DDNS/WINS settings information:
 - **DDNS** - Set to **ON**.
 - **Release Host Name** - Set to **NO**.
 - **DDNS/WINS Name** - Use the default name provided by Xerox or enter another name.
 - **Primary WINS Server** (optional)
 - **Secondary WINS Server** (optional)
8. Click **Save Changes** when you are finished entering the settings.

Manually Setting the Printer's IP Address

Note

Ensure that your computer has a properly configured IP address for your network. Contact your network administrator for more information.

If you are on a network without a DNS server, or in an environment where the network administrator assigns printer IP addresses, you can use this method to manually set the IP address. Manually setting the IP address overrides DHCP and AutoIP. Alternatively, if you are in a small office with a single PC and use a dialup modem connection, you can manually set the IP address.

1. At the printer's front panel, select **Printer Setup**, then press the **OK** button.
2. Select **Connection Setup**, then press the **OK** button.
3. Select **Network Setup**, then press the **OK** button.
4. Select **TCP/IP Setup**, then press the **OK** button.
5. Select **DHCP/BOOTP**, then press the **OK** button to select **Off**.
6. Select **TCP/IP Address**, then press the **OK** button.
7. Enter the printer's IP address, then press the **OK** button.

infoSMART Knowledge Base Documents (English only)

For more information, go to www.xerox.com/office/5500infoSMART to view these documents.

Reference Name	Title
R1002033188	Basic TCP/IP Tutorial and Home Networking Guidelines
R1015020333	Installing the Printer Driver in Windows 9x When Using a USB Connection
R1015020339	Installing the Printer Driver in Windows 2000 When Using a USB Connection
R1015020349	Installing the Printer Driver in Windows XP When Using a USB Connection
R1015020355	Installing the Printer for a USB Connection in Mac OS 9
R1015020367	Installing the Printer for a USB Connection in Mac OS X 10.3.1 (and later)
R1002018545	Understanding TCP/IP Addressing and Subnetting Basics