

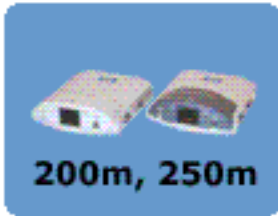


User's Guide

for HP Jetdirect 200m print server/Internet connector
and HP Jetdirect 250m print server/Internet connector

Contents:

1. [Get started quickly](#) with installing the printer and print server
2. [Learn the basics](#) of networking and network printing
3. [General information](#) about the print server
4. [Install the print server](#)
5. [Configure and manage the print server](#)
6. [Troubleshoot the print server](#)
7. [Get support](#) for the print server
8. [Specifications and regulatory information](#) for the print server
9. [Limited warranty](#) for the print server
10. [Some useful tools and techniques](#)
 - Tools
 - Installer
 - Embedded web server
 - Techniques
 - Printing a configuration page
 - Setting a new IP address
 - Performing a cold reset (reset to factory defaults)



Get Started Quickly

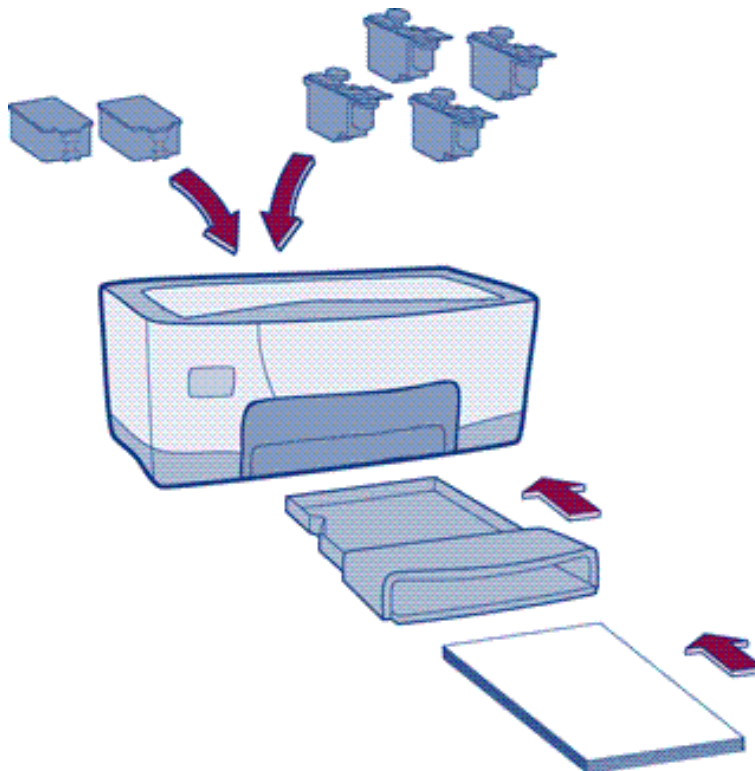


This is essentially the same information as the installation instructions that appear on the HP Jetdirect 200m/250m setup poster.

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User's Guide

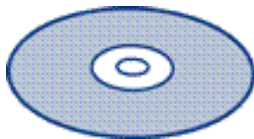
1. Set up the printer hardware.



200m, 250m

Refer to your printer's documentation for detailed instructions.

Do not connect the printer to your computer with a USB or parallel cable.



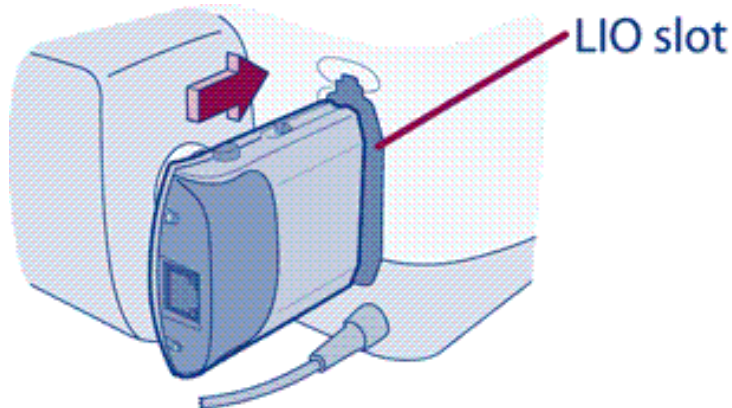
If your printer's CD is available, keep it handy for use in step 3, below. You will use the printer's CD instead of the HP Jetdirect CD — it has all the software you need for a complete network installation.

When the printer is set up, return to this poster and continue with step 2.

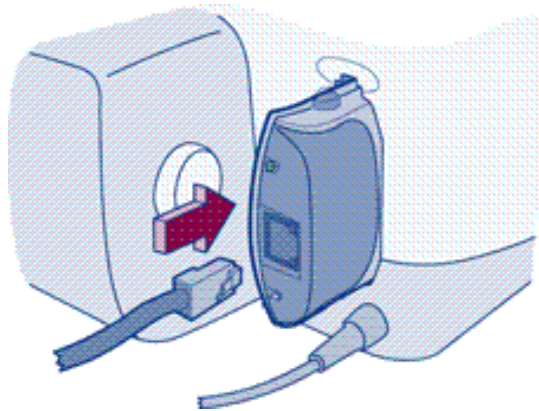
2. Connect the print server.

Switch on the printer's power.

Plug in the print server. Push it into the printer's LIO slot until it clicks into place.

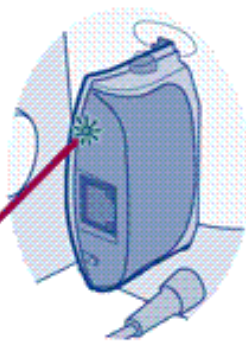


Plug in the network cable. Plug one end of the cable into your network device (a hub, switch, or router — if your network cabling is hidden in the walls, your connection may be a wall outlet). Plug the other end into the print server.

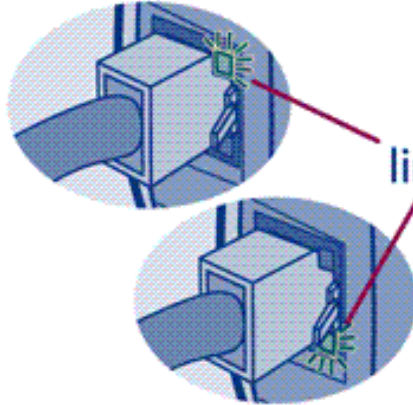


Check the lights. After a few seconds, the status light should be ON (solid green) and one of the two link lights should be ON (solid green). If the lights on the print server are different from this pattern, see the [troubleshooting notes](#) on the other side of this poster.


status light



link light



Wait two minutes for the print server to poll the network for available protocols and services.

Print a configuration page by pushing the test button ( icon).

test button 



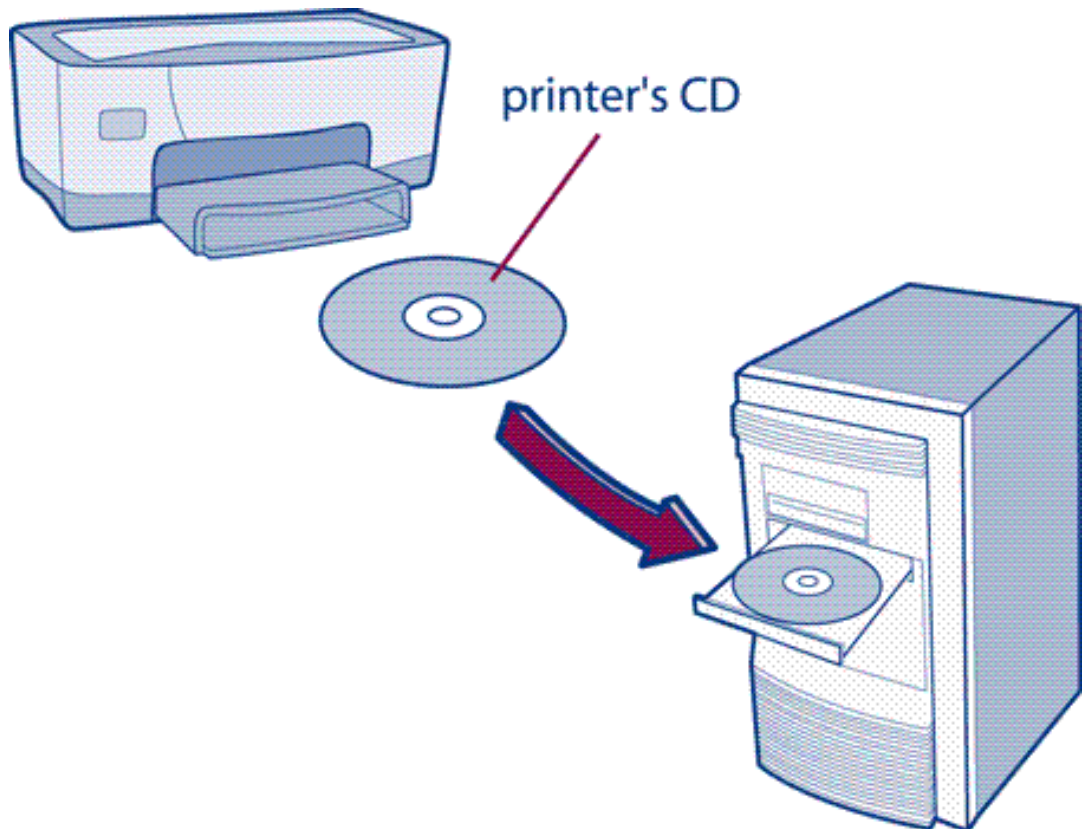
If the page does not print successfully, see the [troubleshooting notes](#) on the other side of this poster.



3. Choose the installation CD and run the installer.

Windows:

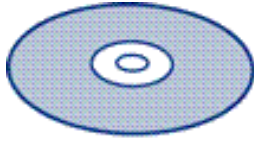
Use the CD that came with your printer (instead of the HP Jetdirect CD) if it is available. The printer's CD has all the software you need for a complete network installation.



Insert the printer's CD into your computer's CD drive. The CD should start automatically and offer you a choice of buttons — click on the Install button and follow the instructions on the screen. (If the CD does not start automatically, double-click on the SETUP program on the CD.) When the installer finishes and you can print to the network printer, you have completed the installation.

If the printer's CD is not available, insert the HP Jetdirect (print server) CD and run its

installer.



HP Jetdirect CD
(use only if printer's CD
is not available)

You will also need your printer's driver; if you don't have it, you can get it from the Web at <http://www.hp.com/cposupport/software.html>.

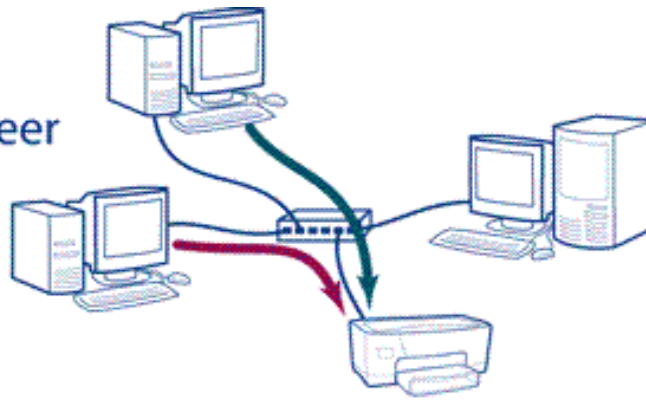
MacOS:

Install the printer driver from the CD that came with the printer. If that CD is not available, you can get the driver from the Web at <http://www.hp.com/cposupport/software.html>.

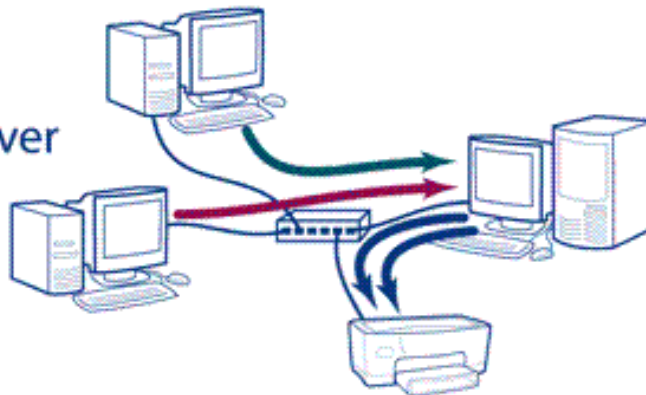
If you need to print via the IP protocol, use the LaserJet utility on the HP Jetdirect (print server) CD.

4. Set up other computers as needed.

peer-to-peer



client/server



For peer-to-peer printing (where each computer prints directly to the network printer), run the installer (as in step 3) on each computer.

For client/server printing (where each computer sends print jobs through a network server computer), you need run the installer only on the server, and set up the server for printer sharing. Then each client computer must install the printer driver and connect to the shared printer on the network server. (An easy way to do this is to use the Microsoft Windows Point and Print function. See your operating system documentation for details on Point and Print.)

For basic information on [peer-to-peer and client/server printing](#), see the [Network Basics Tutorial](#) on the HP Jetdirect CD.



Troubleshooting during installation

If you encounter problems during installation, check these steps:

Test page does not print. Try these steps:

Back to:

Install
start of
User's Guide

- Check that the print server is firmly seated in the printer's LIO slot and that the status light is ON (solid or blinking green).
- If the printer has an LCD panel, correct any errors that are displayed.
- If there is still a problem, call HP technical support.

Installer does not discover printer. Try these steps:



- Check that the print server is firmly seated in the printer's LIO slot and that the status light is ON (solid green). Wait 2 minutes for the print server to poll the network, then run the installer again.
- Check that the network cable is securely connected to the print server and that one of the link lights is ON (solid green). Wait 2 minutes for the print server to poll the network, then run the installer again.
- Perform a cold reset: unplug the print server from the printer, then plug it in while pressing the Test button. Wait 2 minutes for the print server to poll the network, then run the installer again.
- If there is still a problem, follow the hardware troubleshooting procedure (see next paragraph).

Other problems: Run the interactive hardware troubleshooter. Answer the questions by clicking on the buttons. [Click here for the troubleshooter.](#)

What the Status light means:



OFF: not receiving power.



Green, ON solid: on and ready.



Green, blinking slowly: not ready or self-test in progress or no network connection (check link lights).



Green, blinking quickly: processing configuration page.



Amber, blinking slowly: fault -- follow the [troubleshooting procedure](#).

Networking Basics

Please click on a title to view a document.

The Network Basics Tutorial

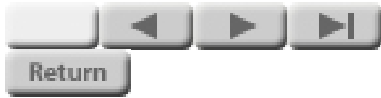
A brief overview of:

- Networks
- Network Printing
- Installing a Network Printer

Tips on Getting Started

Answers to common questions:


- Which CD should I use?
- Where do I find the printer driver?
- When do I stop?



The Network Basics Tutorial

This tutorial tells you about:

- [Networks](#)
- [Network Printing](#)
- [Installing a Network Printer](#)

Click the button to continue. 

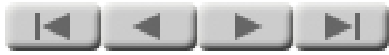


Section 1:

Networks

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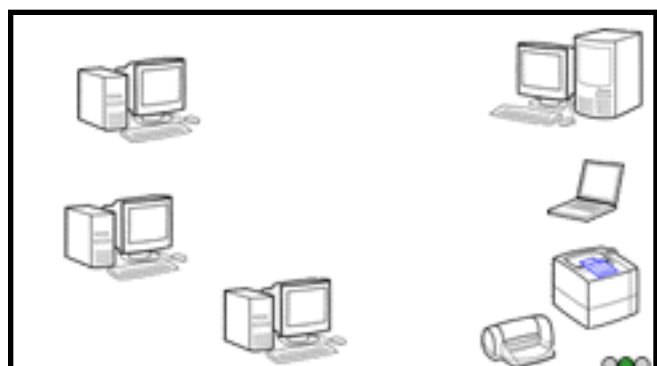
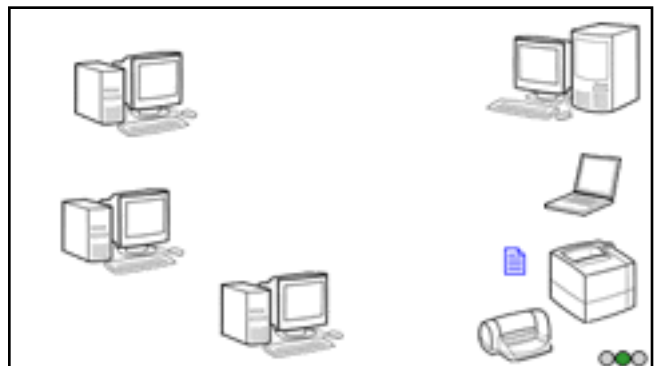
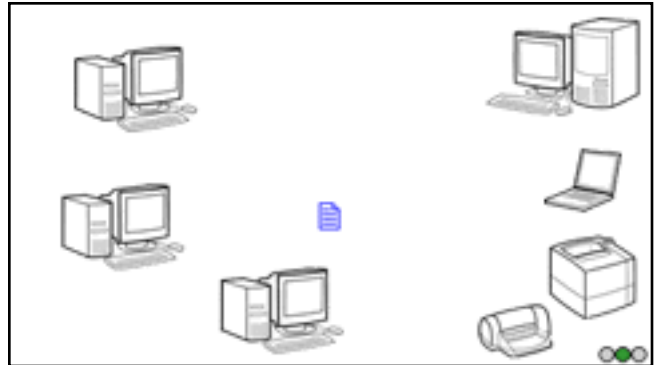
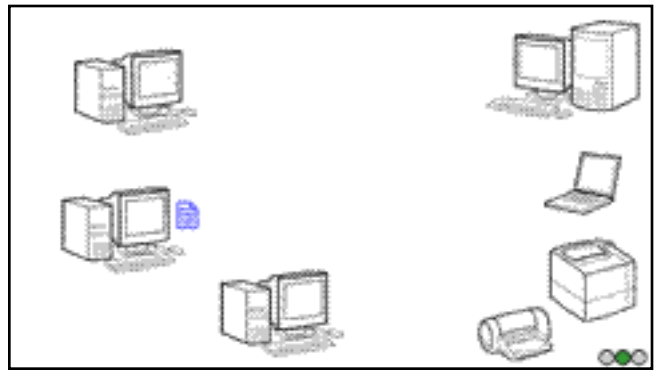




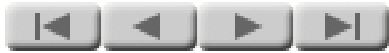
What you want . . .

. . . is for all your computers to be able to:

- **Communicate** -- send and receive e-mail, and participate in conferences
- **Share information** -- transfer files among systems, and get information from central databases
- **Share resources** -- use shared printers, scanners, and servers

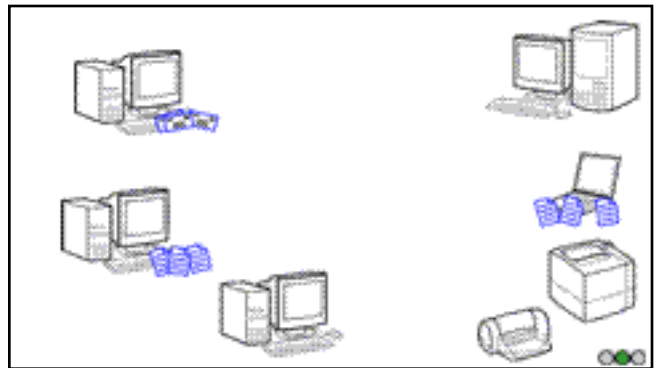
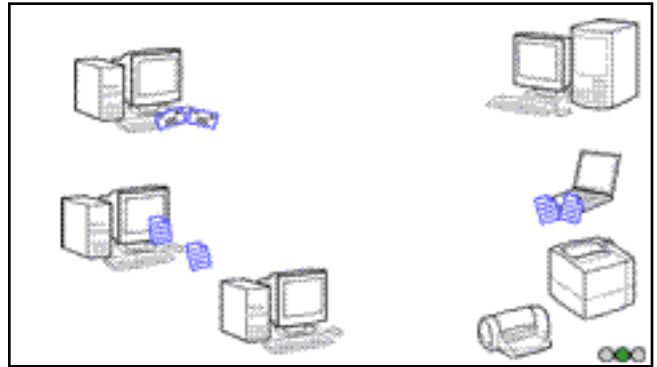
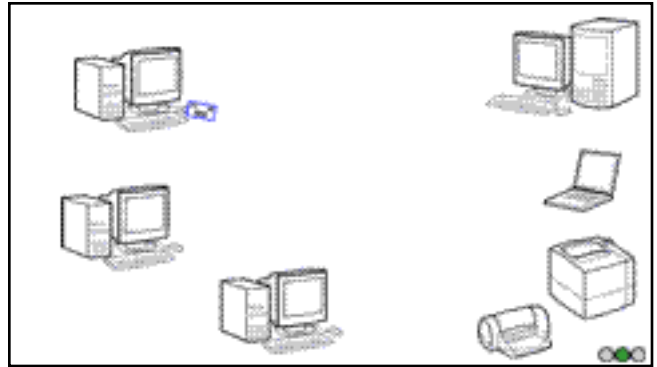
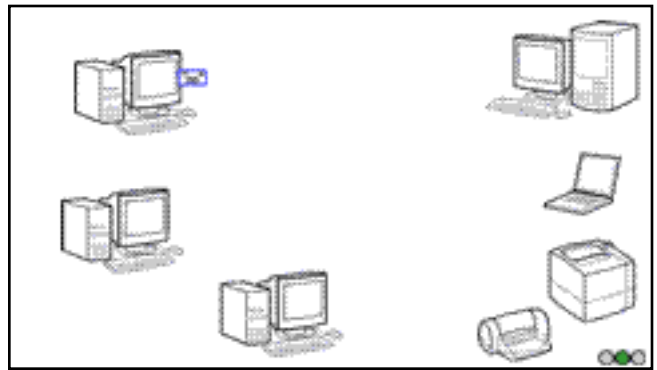


NETWORKS



The problem is . . .

. . . standalone computers have no way to talk to each other, so attempts at communication fail.



Replay

NETWORKS



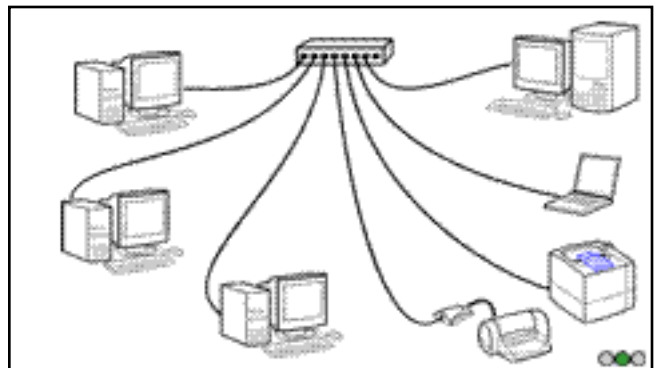
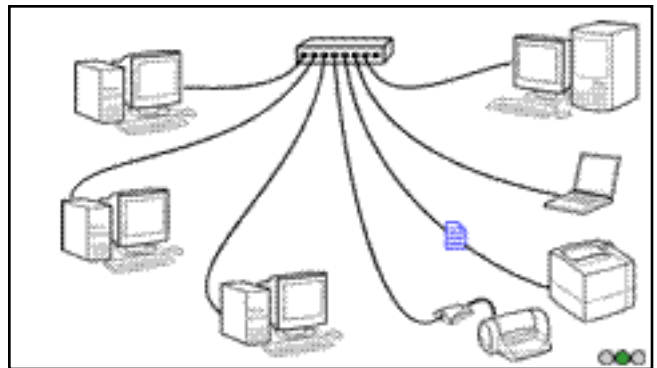
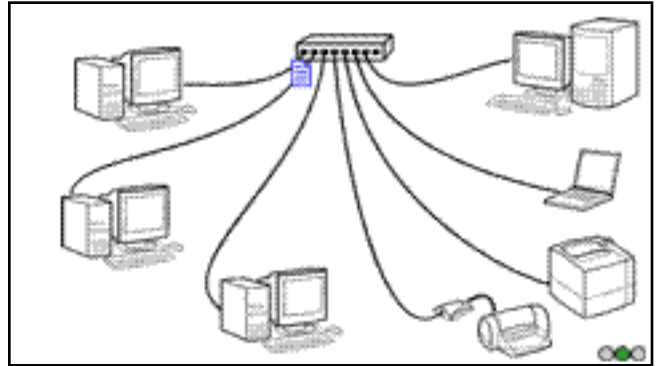
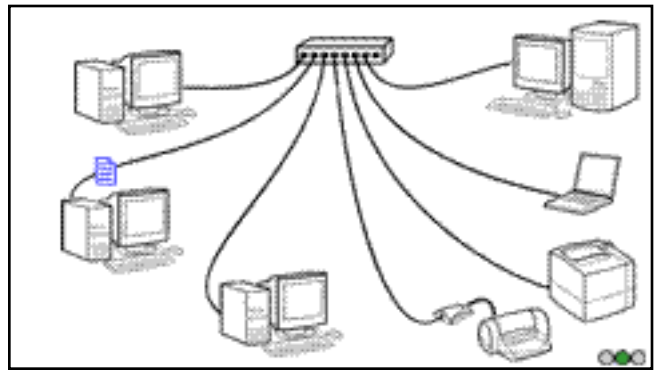
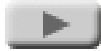
The solution: a local area network

A local area network (or LAN) provides wiring that ties the computers together and allows them to communicate. (The most common type of local area network may also be referred to as an Ethernet LAN or an Ethernet.)

A typical LAN uses twisted-pair wiring (similar to telephone wiring) to connect each computer to a central hub. The hub transmits network communications between computers.

For details on LAN wiring, click here:

Details

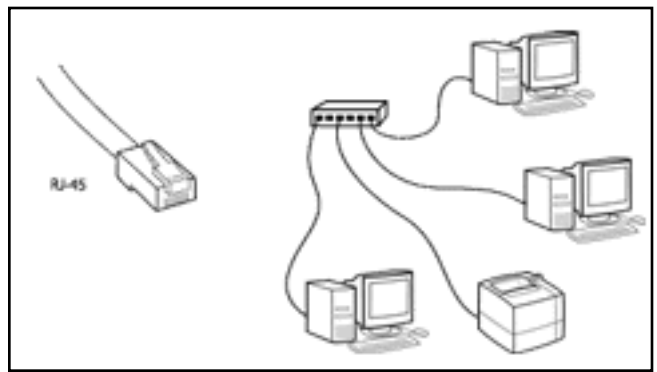


Replay



Wiring: twisted-pair

The most common wiring used for LANs is twisted-pair wiring, similar to the wiring used for telephones. This wiring connects the computers or other network devices to a central hub. The use of telephone-type wiring makes it easy for the persons who administer your telephone wiring to administer the network wiring as well.



RJ-45 connectors are used to connect the twisted-pair wiring to the computer and to the hub. The wire for a network can be graded in a number of categories; Category 5 wiring is the most popular grade. Category 5 wiring has superior electrical characteristics, and we strongly recommend it for all twisted-pair networking applications. The wire grade is usually marked on the cable jacket.

The equipment for a twisted-pair LAN commonly operates at a data rate of either 10 Mbps (megabits per second) or 100 Mbps. Category 5 wiring is required for 100-Mbps operation. A 10-Mbps LAN can run on either Category 3 or Category 5 wiring (though we strongly recommend Category 5). At either data rate, cables may extend up to 100 meters (328 feet) from the hub to the computer.

A twisted-pair network running at 10 Mbps is called a type 10Base-T network. A twisted-pair network running at 100 Mbps is called a type 100Base-T network.



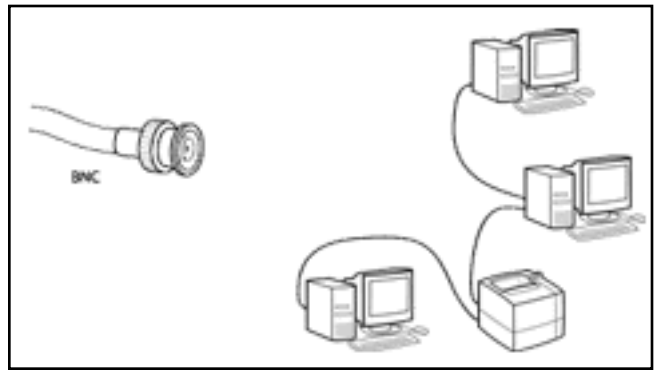


Wiring: thin coax

An alternative to twisted-pair wiring is thin coaxial cabling, often called thin coax. This cabling is known as RG-58A or RG-58U cable, and has an impedance of 50 ohms. (It looks similar to the 75-ohm thin coaxial cable used in television installations, but the television cable will not work in a network.)

The connectors used with thin coax are BNC connectors. The cable is a continuous cable, up to 185 meters (606 feet) long, made up of shorter segments with BNC connectors at each end. It connects to computers and other devices along its length using BNC "T" connectors, and there is a 50-ohm terminator at each end of the cable. This cabling scheme does not use a hub.

A thin coaxial LAN operates at a data rate of 10 mbps (megabits per second), and is known as a type 10Base2 network.



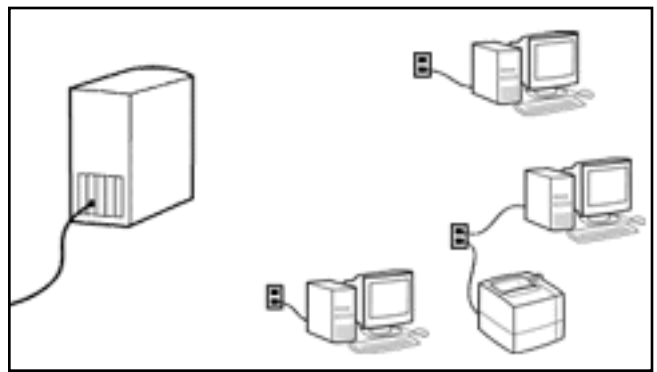
Return

Computer connections

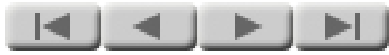
For twisted-pair LANs: A desktop computer connects to a twisted-pair LAN through a network interface card (NIC) that resides in a slot in the computer, or through a similar interface built in to the computer itself. The RJ-45 plug of the network cable plugs into an RJ-45 jack on the card or in the computer. A portable computer may have a built-in connection using an RJ-45 jack, or it may use a PC card that inserts into a PC card slot in the computer. (Some PC cards take up two slots and have room for an RJ-45 jack that is integral with the card; others take up only a single slot but require a short cable that provides the RJ-45 jack.)

For thin coaxial LANs: A desktop computer typically connects to a thin coaxial LAN through a network interface card (NIC) ; built-in BNC connections are uncommon. Portable computers connecting to thin coaxial LANs use a PC card with a short cable that provides a BNC connection. In all cases, the LAN cable connects to the computer through a BNC "T" connector.

Hidden network cables and equipment: In many network installations, the hubs are kept in equipment closets and the cables are hidden in the walls. In these installations, wall outlets with RJ-45 jacks are the only visible components of the network wiring. For such a network, you use a short length of network cable to connect from the computer to the wall jack.



Return

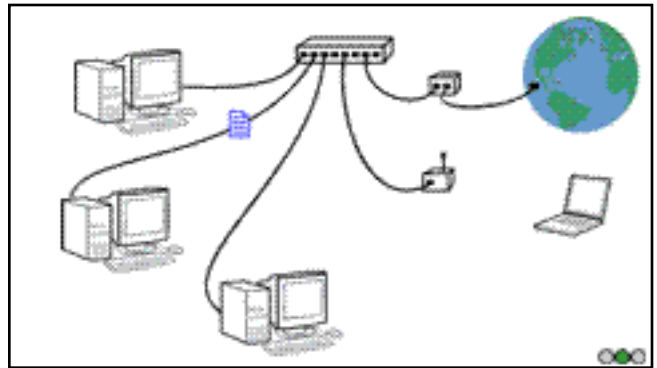
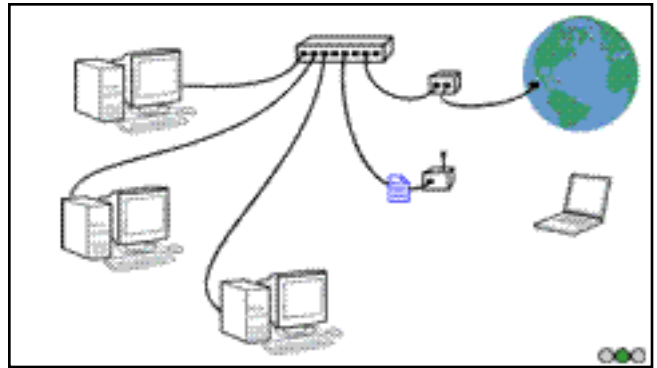
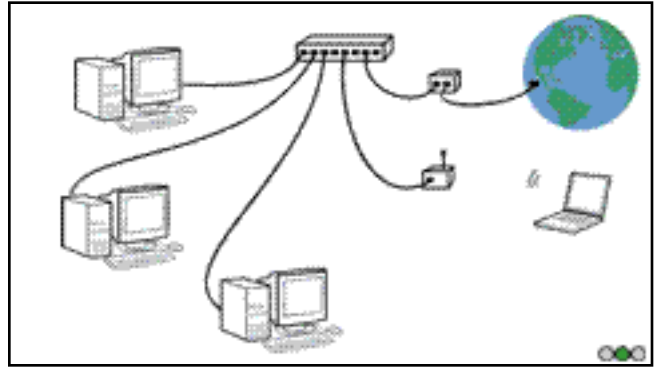
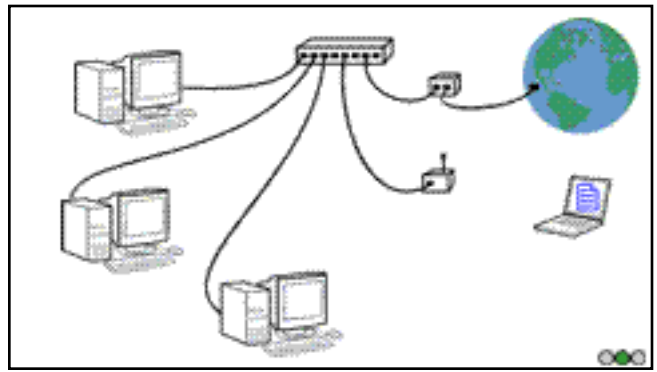


L is for Local

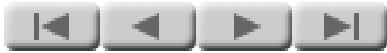
The "local" in "local area network" means that the network is in a single location. A LAN can be small enough to serve a home office or a small business, or it can be large enough to serve a school, a hospital, or a substantial business or public office. It can cover several buildings, as long as they can all be connected into a single network. Several types of LAN equipment are available to expand a LAN beyond the workgroup-sized unit typically served by a single hub.

Note that the definition of a local area network does not include broader networks such as the Internet or a corporate network with locations in many cities or countries. These broader networks are often called WANs, or wide area networks. It is possible for a LAN to connect to such a network through a gateway -- a device that connects different types of networks. The gateway can be a separate piece of equipment, or it can include the LAN hub. (This latter type of gateway is becoming increasingly common for Internet connections, particularly for high-speed DSL connections.)

Though wireless networking is becoming increasingly popular, most wireless equipment still connects to a wired LAN. In a typical case, a portable computer may have a wireless LAN card. When the computer comes within range of a wireless gateway, it connects through the gateway to the wired LAN, and to all the computers and other resources on that LAN.

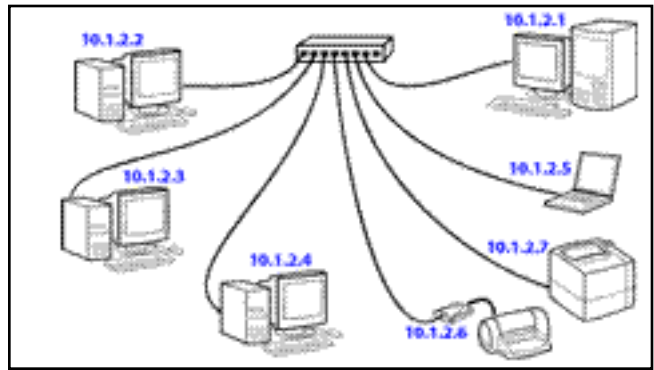


NETWORKS



Addresses

Each device on the network has a unique address. This allows you to communicate with a specific computer (or other device, such as a printer). That way, your e-mail doesn't go to everybody, and your print job doesn't get printed simultaneously on all printers on the network.



There are several addressing schemes for networks. Of these, the most popular is that of the Internet Protocol (IP). In addition to being used on the Internet, IP addressing can also be used for standalone networks that don't connect to the Internet. The network addresses shown in the illustration are sample IP addresses.

Other network addressing schemes you may encounter include IPX (used with Novell NetWare networks), DLC, and AppleTalk. In this tutorial, we limit our discussion of network addressing to IP addressing, as it is the most popular.

The number of possible IP addresses is huge. So is the number of Internet users, and the possibility of conflicts is a real one. If you use IP addresses on your LAN and that LAN connects to the Internet, you must be careful to use addresses that have come from a reliable source, such as your Internet service provider (ISP).





Section 2:

Network Printing

Click the button to continue.



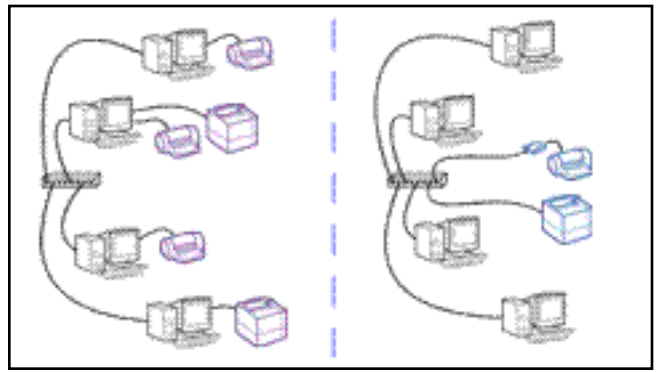


Why use network printers?

Using network printers lets you meet your computer users' printing needs more efficiently. By sharing printers among several users, you reduce the number of printers you need. This approach

- *saves money* -- there's less equipment to buy
- *saves space* -- users don't need to make space for a printer
- *saves maintenance* -- fewer printers mean less bother

all with little inconvenience to users. (In fact, shared printers may be *more* convenient: nobody has to go without a printer or change to a different computer just to print; and sharing may save enough money to let you purchase printers with more functions or greater speed.)

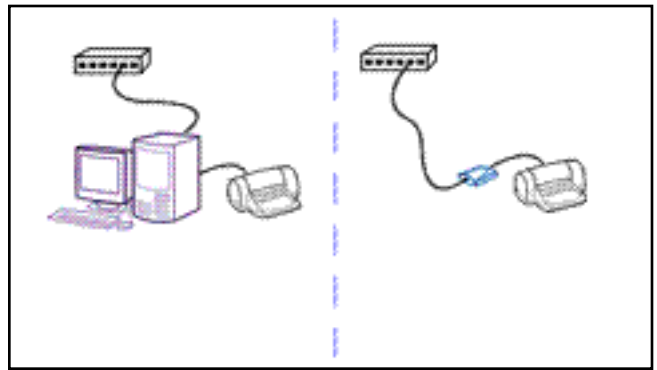




Why use a print server?

A print server provides your printer with *connection to the network*. You could get the same connection using a computer -- your network server -- but it would cost more and be more complex. Using a print server saves you money and frees up your network server for other tasks, such as file storage.

You might want to use a network server for *management of print jobs*, a function that may be useful for larger networks. In such an application you will still probably want to use a print server, because its small size gives you *location flexibility*. Using a print server, you can easily place your printers near your users, while keeping the network server out of the way in a central computer area. (You will see this application in the notes on the client/server topology, a couple of pages later in this tutorial.)





Hardware connections

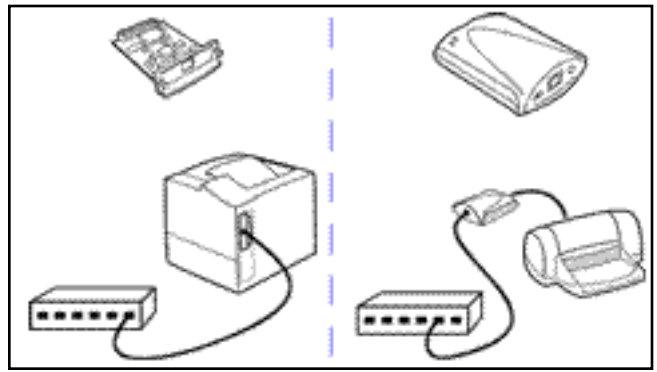
Print servers can be internal or external devices. Which one you choose depends on your printer.

Internal print servers -- These are special-purpose cards or modules that plug into the built-in input/output slot in the back of some printers. The slot provides the data and power connections for the print server, and the network cable plugs into the network connector on the face of the print server.

Internal print servers come in a variety of configurations to match the style of your printer slot and the type of network connection you need.

External print servers -- External print servers are for printers that don't have a built-in slot. The print server is a small module that sits next to the printer (or mounts on the printer using a clip) and connects to the printer's USB or parallel port using a standard printer cable. A network cable plugs into the network connector on the print server, and a power cord connects to a wall outlet to provide the print server's power. (We haven't shown the power cord in the illustration, just to keep the drawing simpler.)

External print servers come in several different configurations to match the printer's data port (USB or parallel) and the type of network connection you need.



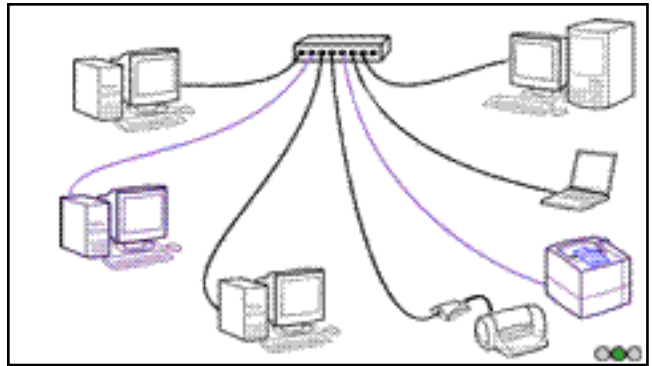
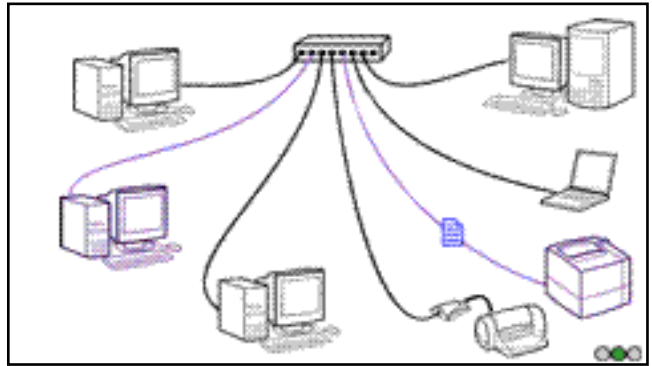
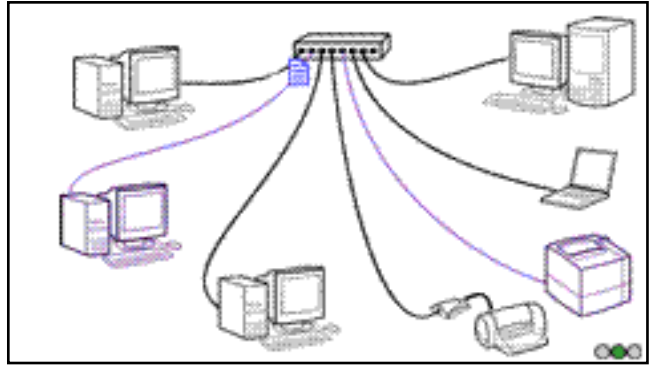
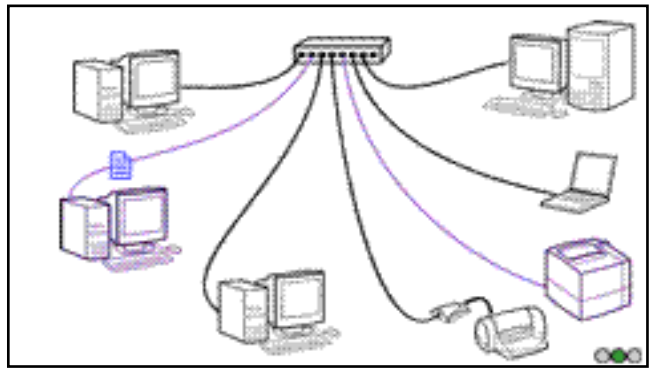


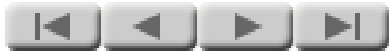
Peer-to-peer topology

There are two standard layouts for network printing using a print server. The first is the peer-to-peer topology, in which a computer sends print jobs directly to the printer.

In peer-to-peer printing, each computer manages the print jobs that it generates. It checks to see whether the printer is ready to accept the print job, and sends the job if the printer is free. If the printer is not free, the computer stores the job and keeps checking the printer until it is ready to accept the job. If several computers send jobs to a printer at the same time, printing for some of the computers may slow down as they spend time checking the printer and waiting for it to be available.

Peer-to-peer printing works well on networks with few users. It is appropriate for small and medium offices, as well as large offices that do not have heavy printing requirements.





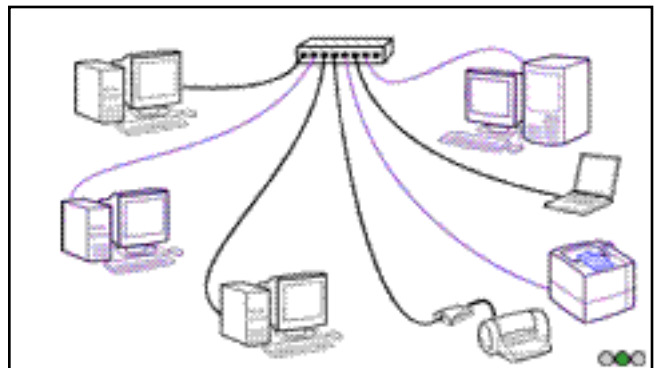
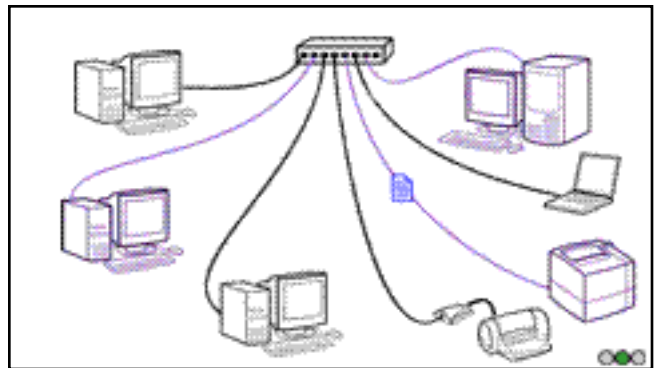
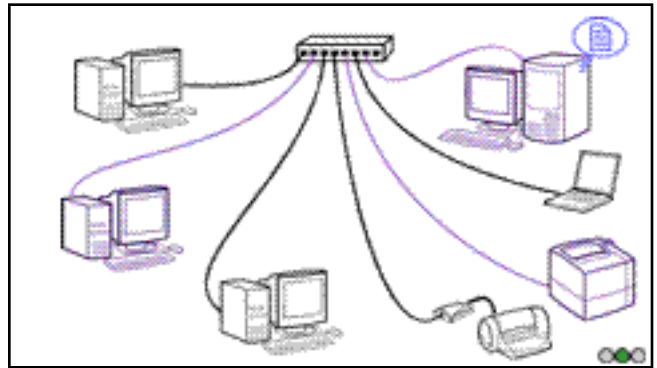
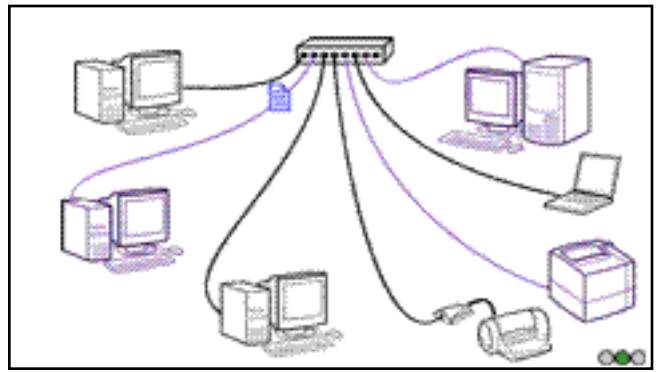
Client/server topology

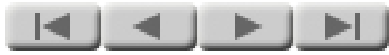
The second standard layout for network printing is the client/server topology. In this topology, a computer sends its print jobs to a network server, and the server sends the print jobs to the printer.

In client/server printing, the network server manages the print jobs from several computers (the clients). As soon as a client computer has sent a print job to the server, it is finished with that print job. The server keeps track of all print jobs from there on -- figuring out the print order for the various jobs that have been submitted to it, checking the printer's availability, and sending the next job to the printer when it is free.

Client/server printing works well on networks with heavy printing traffic. It is typically used in large offices that have extensive networking facilities.

Choosing a topology -- If you don't know whether to use a peer-to-peer or a client/server topology, you may want to start with peer-to-peer printing. It generally takes a substantial amount of printing traffic, or large print jobs, to slow down printing significantly. If your print jobs start to take noticeably longer to complete, you may want to try using multiple printers, dividing your network into subnetworks, or switching your office to client/server printing (in that order).



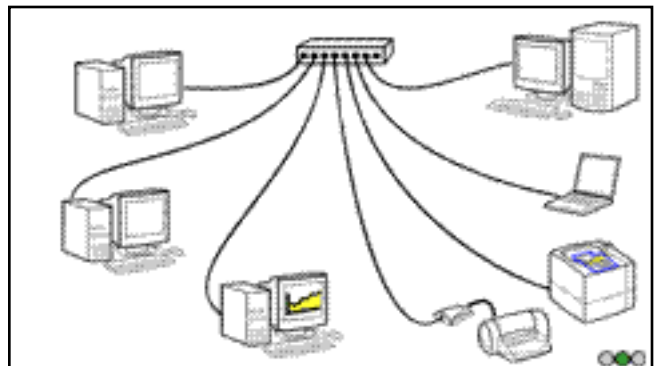
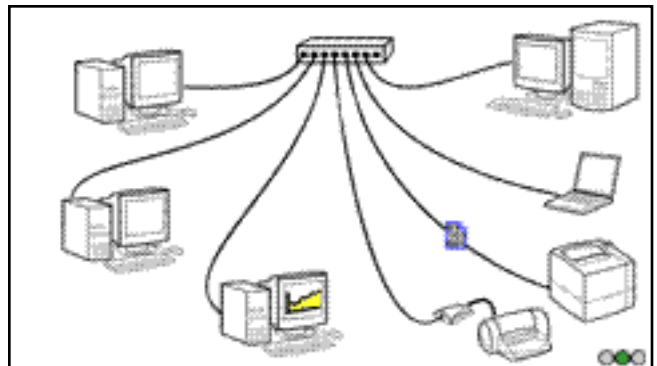
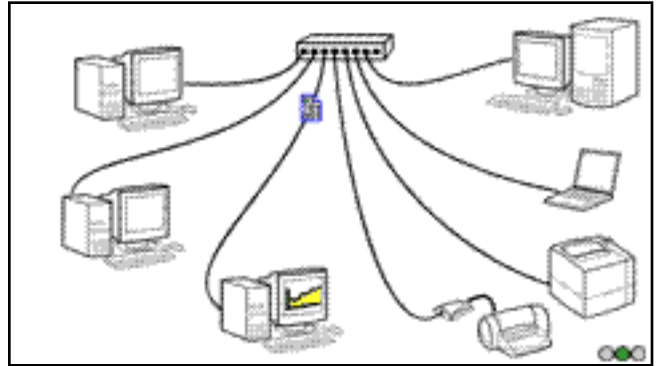
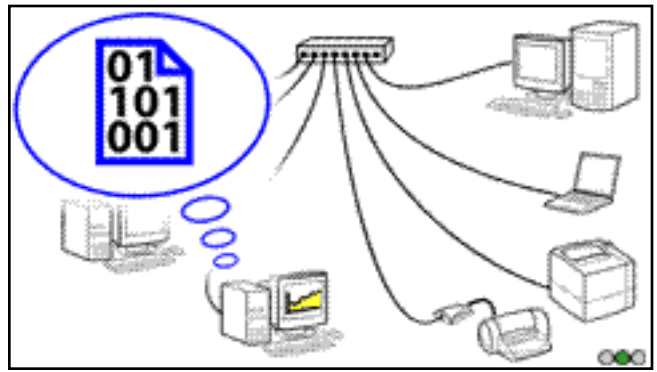


Printer drivers

The printer driver is the last major component to consider in network printing. This driver is system software that converts a document in your computer to a form that makes sense for the printer.

When you print from an application on your computer, it is the printer driver that converts the layout on your screen to the ones and zeros that the printer takes as input. When the printer receives this information, it converts the ones and zeros into a correctly printed page.

The installer program for network printing needs to have the printer driver to complete the installation. It usually turns out that the trickiest thing about the installation is knowing where to find the driver. You may be able to find the driver on the CD that came with your printer, on the Web, or on your operating system CD. If you previously had the same printer connected directly to your computer, the right driver may already be on your system. (We will provide more information on finding and using printer drivers in the next section, "Installing a Network Printer".)

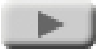




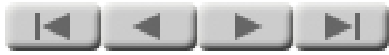
Section 3:

Installing a Network Printer

Click the button to continue.

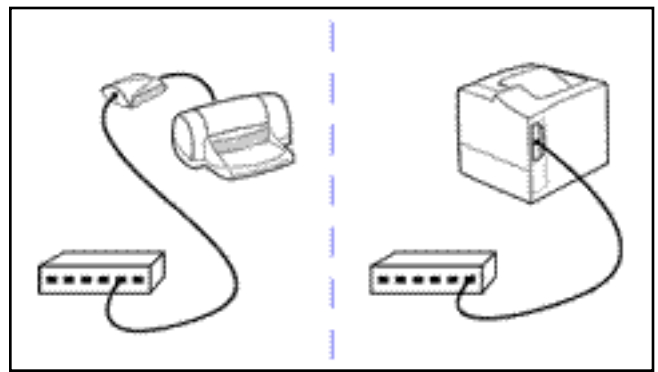


INSTALLING A NETWORK PRINTER



Setting up the hardware

The first stage of installing a network printer is setting up the hardware. There are two steps to this: setting up the printer hardware and connecting the print server.



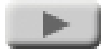
Set up the printer hardware -- Remove any shipping materials. Install the paper trays and ink or toner cartridges (as appropriate). Add paper. Plug in the power cord and switch on the power. Print a test page. Do not connect the printer to your computer. (For detailed instructions, check your printer manual or setup poster.)

Connect the print server -- There are a couple of different cases to consider:

- ***If you use an external print server:*** Switch off the printer's power. Connect the printer cable (USB or parallel, as appropriate) between the printer and the print server. Connect the network cable to the print server. Switch on the printer's power. Plug in the print server's power cord. Push the Test button on the print server to print a configuration page on the printer; this tests the connection between the print server and the printer. (For detailed instructions, check your print server manual or setup poster.)
- ***If you use an internal print server:*** Note that many printers come with the print server module already installed in the printer. If your print server module is not already installed: Unplug the printer's power cord. Plug the print server into its slot in the printer. Connect the network cable to the network connector on the print server. Plug in the printer's power cord. (For detailed instructions, check your print server manual or setup poster.)

Note: If your network wiring is hidden --
In many network installations, the network components (hubs, switches, &c) are stored in a wiring closet and the network wiring is hidden in the walls. The only sign of a network that you see in such an installation is a wall outlet that has one or two network connectors. In this case, make your network connection by connecting a network cable between the print server and the wall outlet. (If you have any questions about such an installation, check with your network administrator.)

Note that the illustration shows only the data connections (network cables and printer cable); we have omitted power cords from the illustration to keep the drawings simple.

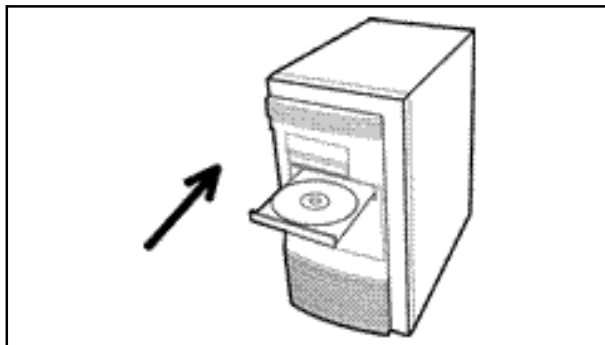


INSTALLING A NETWORK PRINTER



Running the installer

The next (and last) stage of installing a network printer is using the network printing software to install the printer on your computer.



- ***If you're setting up peer-to-peer printing***, you need to run the software and install the network printer on each computer that will print to the target printer.
- ***If you're setting up client/server printing***, you need to run the software and install the network printer on the network server and set it up for printer sharing. Then each client computer must install the printer driver and connect to the shared printer on the network server. An easy way to do this is to use the Microsoft Windows Point and Print function. (See your operating system documentation for details on Point and Print.)

The installer program performs several major functions:

- detects available printers on the network
- helps set up an address for the printer you choose
- installs the printer driver
- optionally sets up printer sharing (only available if running on a Windows NT/2000 network server)

Operation

Note: The next few paragraphs describe the operation of the installer software that resides *on the HP Jetdirect CD*. If you are using the network printer installer that resides *on the printer's CD*, the operation may be slightly different from what we describe here. In particular, some printer CDs do not offer you the option of "Autoconfigure network settings for me". In such a case, the installation will proceed as though you chose the "Let me configure my own network settings" option described below. (If you are trying to decide whether to use the Jetdirect CD or the printer CD, the discussion of [Which CD do I use?](#) may be helpful.)

To run the installer program, insert the CD into your computer's CD-ROM drive. On most systems the CD browser application will start automatically. If it doesn't start automatically on your system, double-click on SETUP.EXE in the root directory of the CD to start it. Once the browser has initialized, it will give you a choice of actions -- choose Install by clicking on the top button.

When the installer starts, it lets you choose how it operates:

- ***Auto-configure network settings for me.*** This is the easy option -- the installer automatically assigns network settings, such as IP addresses. This is probably the right option to choose, unless you are a network administrator and need to assign specific network settings.
- ***Let me configure my own network settings.*** This is the option for advanced users. It gives you control over the IP or NetWare parameters and other network settings that are assigned to the network printer. If you are a network administrator, this may be the right choice for you.

Once you have made this choice, the installer proceeds with its tasks, asking you for the information it needs at each point. If you chose "Auto-configure . . ." it will ask only a few questions; if you chose "Let me configure . . ." it will ask some detailed questions about the setup of network addressing.

Printer drivers

At some point late in the installation, the installer needs to have the printer driver to complete the installation. So at that point the installer may ask you where to find the driver. Knowing where to find the driver is usually the trickiest part of the installation.

Technically speaking, what you need is a driver that installs using a .INF information file (rather than installing by running a .EXE file) There are several alternatives for finding this driver and its .INF file:

- In many cases this is the same driver that is used for a direct (non-networked) printer connection, and you can probably find the driver on the CD that came with the printer. (In fact, some printers come with the network

installer program on the printer CD. If your printer is one of these, the simplest way to install your network printer is to run the installer from the printer CD instead of from the HP Jetdirect CD, since the installer knows where to find the driver on the printer CD. For a list of these printers, click on this button:



- If you want to make sure of having the latest driver for your printer, you can download it from the Web. If your printer is an HP printer and you are running the installer in the "Autoconfigure network settings for me" mode, you can select the option to download a driver automatically from the Internet. The installer will search the HP support site for a driver for your printer and, if it finds one, will automatically download it and install it for you. If you don't select the option to download a driver automatically from the Internet, you can download one manually before you run the installer. The HP support site at <http://www.hp.com/cposupport/software.html> has current drivers for most HP printers.
- You may be able to find the driver on your operating system disc. If the operating system is more recent than the printer, it probably includes a driver for that printer.
- If you previously had a direct connection from your computer to the same printer, or a network connection to another printer of the same model, the network printer installer may be able to use the driver that is already on your computer.

The installer software takes the driver location you specify, finds the driver, and installs it in your system.

Once the installer has finished, you are ready for network printing from your computer.

The End

When installing the network printing software, some users are unsure when the installation is complete. When the network printer is installed on your computer and you can print to it, the installation is complete.

Confusion sometimes arises in the situation when you

have two CDs -- a printer CD and the HP Jetdirect CD -- and you have just finished the installation from the printer CD. It is common to wonder whether you should run the installer on the Jetdirect CD as well. You don't need to. Once your network printer prints successfully, you're done with the installation on that computer. (Of course, if you are installing the network printer software for peer-to-peer printing from several computers, you will need to run the installer from each computer.)



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Printers that include the network installer

For newer HP LaserJet printers (January 2000 or later), including multifunction peripherals (MFPs) and All-in-One devices, you should use the CD supplied with the printer. This CD already includes network installation software. Following is a list of recent HP printers that integrate network installation software on their CD.

HP LaserJet printers and MFPs

- 1200, 1220 series or newer
- 2200 series or newer
- 3200 series or newer
- 4100 series or newer
- 8150 series or newer
- 9000 series of newer

HP Color LaserJet printers and MFPs

- 3150 series or newer
- 4500, 4550 series or newer
- 8550 series or newer

HP business inkjet printers

- 2200, 2250 series or newer
- 2600 series or newer

HP color inkjet printers

- cp 1160 series or newer
- cp 1700 series or newer

HP Designjet printers

- 500/800 series
- 5000 series or newer

HP Officejet printers and All-in-One peripherals

- OfficeJet G-Series
- OfficeJet K-Series

If your printer is not identified above, or you cannot locate your printer's CD, you should:

- First, locate your printer's driver. (The summary on the preceding page should help you.)
- Then, run the installer from the HP Jetdirect CD.

Note that if you use the HP Jetdirect CD for MFP or All-in-One devices, some features other than printing (such as scanning and faxing) may not be accessible. Use the printer CD to get all features.

Note: An HP Web Jetadmin CD-ROM may also be included with selected HP JetDirect products. HP Web Jetadmin is a feature-rich printer management tool. However, it is not required for network printer installation.

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End of Network Basics tutorial

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Tips on Getting Started

Background

Installing a network printer is quite straightforward:

- First, you set up your hardware. This involves setting up your printer, and then setting up a print server to connect the printer to your network.
- Then, you run the network printing software to install the printer on your computer.

If you have purchased your printer and print server separately, you probably have two sets of documentation and two installation CDs -- which do you use? The section below on [Which CD do I use?](#) should help you get started in the right place.

In addition, sometimes it's not immediately apparent where to find the printer driver that the installer needs. The section below on [Where do I find the printer driver?](#) provides some useful pointers.

Finally, the section below on [When do I stop?](#) answers questions about when the installation process is complete and whether, if you have two CDs, you need to use both of them.

If you would like a brief overview of what networks and network printing are about, along with some additional detail on the installation process, click here for [The Network Basics Tutorial](#).

Which CD do I use?

For newer HP LaserJet printers (January 2000 or later), including multifunction peripherals (MFPs) and All-in-One devices, you should use the CD supplied with the printer. This CD already includes network installation software.

Following is a list of recent HP printers that integrate network installation software on their CD.

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- 1200, 1220 series or newer
- 2200 series or newer
- 3200 series or newer
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- 8150 series or newer
- 9000 series or newer

HP Color LaserJet printers and MFPs

- 3150 series or newer
- 4500, 4550 series or newer
- 8550 series or newer

HP business inkjet printers

- 2200, 2250 series or newer
- 2600 series or newer

HP color inkjet printers

- cp 1160 series or newer
- cp 1700 series or newer

HP Designjet printers

- 500/800 series
- 5000 series or newer

HP Officejet printers and All-in-One peripherals

- OfficeJet G-Series
- OfficeJet K-Series

If you have one of the printers listed above, run the installer software on the printer CD to install your network printer. You will not need to run the installer on the HP Jetdirect CD.

If your printer is not identified above, or you cannot locate your printer CD, you should:

- First, locate your printer's driver. (The instructions in the next section should help you.)
- Then, run the installer from the HP Jetdirect CD.
- If the installer asks for the driver, specify the location you found in the first step.

Note that if you use the HP Jetdirect CD for MFP or All-in-One devices, some features other than printing (such as scanning and faxing) may not be accessible. Use the printer CD to get all features.

Note: An HP Web Jetadmin CD-ROM may also be included with selected HP Jetdirect products. HP Web Jetadmin is a feature-rich printer management tool. However, it is not required for network printer installation.

Where do I find the printer driver?

At some point late in the installation, the installer software needs to have the printer driver to complete the installation. So at that point the installer may ask you where to find the driver. Knowing where to find the driver is usually the most subtle part of the installation.

If you are running the installer from your printer CD, the installer generally knows right where to look for the driver -- on the CD. If you are running the installer from the Jetdirect CD, the installer will probably need you to tell it where the driver is. Here are a few places you can look:

- The best source of a driver for your printer is the Web, because that gives you the latest driver. (The drawback of getting your driver from the Web is that some drivers are quite large, and may take several minutes to download at modem speeds. We think it's worth spending the time.) The HP support site at <http://www.hp.com/cposupport/software.html> has current drivers for most HP printers.

If your printer is an HP printer and you are running the installer from the HP Jetdirect CD in the *Autoconfigure network settings for me* mode, you can select the option to download a driver automatically from the Internet. The installer will search the HP support site for a driver for your printer and, if it finds one, will automatically download it and install it for you. If you don't select the option to download a driver automatically from the Internet, you can download one manually before you run the installer.

- In many cases the driver is the same one that is used for a direct (non-networked) printer connection, and you can probably find the driver on the CD that came with the printer.

In technical terms, what you need is a driver that installs using a .INF information file (rather than installing by running a .EXE file). Make sure that your driver files include the .INF file. (If you can't find the printer's .INF file, you may have to download the driver from the Web.)

- You may be able to find the driver on your operating system disc. If the operating system is more recent than the printer, it probably includes a driver for that printer.
- If you previously had a direct connection from your computer to the same printer, or a network connection to another printer of the same model, the network printer installer may be able to use the driver that is already on your computer.

The installer software takes the driver location you specify, finds the driver, and installs it in your system.

When do I stop?

Essentially, you are finished with the installation process when you have a network printer installed on your computer and you can print to it. That's usually when the test page prints successfully.

If you have two CDs -- a printer CD and the HP Jetdirect CD -- and you have just run the installer from the printer CD, it's common to wonder whether you should be running the installer on the Jetdirect CD as well. ("After all, that second CD must be there for a reason. Maybe I should run that installer, too, just to be sure. . .") You don't need to do that. Once your network printer prints successfully, you're done. (We put the installer on the Jetdirect CD for situations where you can't find your printer CD, or where the printer CD's installer doesn't deal with network printers. If your printer CD does handle network printers, just run that installer and stop when it's done.)

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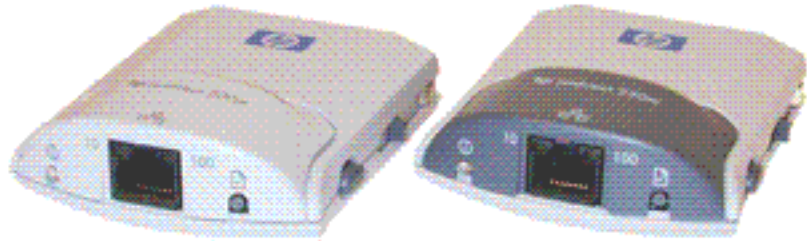
General information

on the HP Jetdirect 200m and 250m print servers



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General description

The HP Jetdirect 200m and 250m are LIO print server modules. That is, they plug into the LIO slots of certain HP printers and provide network connections for those printers. Formally speaking, they are:

J6039A **HP Jetdirect 200m print server/Internet connector**

J6042A **HP Jetdirect 250m print server/Internet connector**

Both print servers connect to Ethernet or Fast Ethernet networks using twisted-pair cabling.

The two print servers are similar in operation and performance. The 250m offers all the features of the 200m; in addition, it supports several additional network operating systems and has upgradable firmware.

Both print servers include an embedded Web server that allows remote management through a Web browser.

Compatibility

The 200m and 250m print servers are compatible with 10Base-T and 100Base-TX (Ethernet and Fast Ethernet) networks. They connect to the network via twisted-pair cabling, using an RJ-45 connector.

The 200m print server supports both peer-to-peer and client/server printer networking under TCP/IP; and supports peer-to-peer printer networking under IPX/SPX (direct mode), Apple EtherTalk, and lpd



200m, 250m

printing. Operating system support includes Windows (95, 98, 2000, ME, and NT 4.0) and MacOS (v 8.6 and later). See the section on [Specifications](#) for details of which operating systems support which protocols.

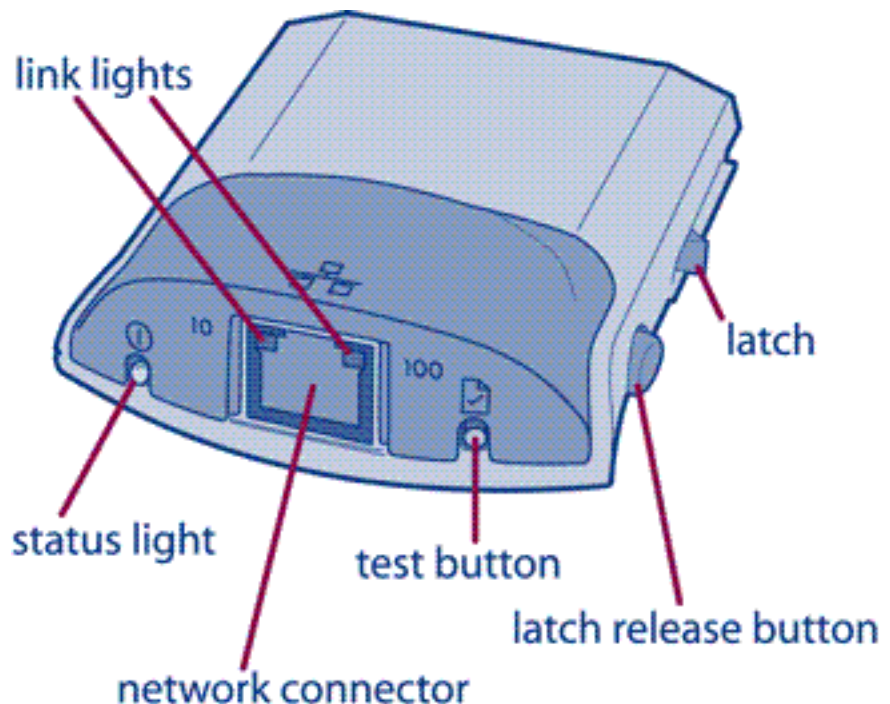
The 250m print server includes all the protocol support of the 200m, as well as client/server support for IPX/SPX under Novell NetWare and support of DLC/LLC, FTP and IPP printing. These protocols are, in various combinations, supported on these operating systems: Windows (95, 98, 2000, ME, and NT 4.0), MacOS, Novell NetWare, IBM OS/2 Warp, HP-UX, Solaris, SCO UNIX, IBM AIX, MPE-IX, and Artisoft LANtastic. See the section on [Specifications](#) for details of which operating systems support which protocols.

The embedded Web server, which allows you to monitor and manage the print server remotely, requires Microsoft Internet Explorer 4.0 or later, or Netscape Navigator 5.0 or later.

See the [Specifications](#) section for more details on the print servers.

Nomenclature

The main parts of the print server are shown in the illustration:



The print server module plugs into the LIO slot of the printer until the **latches** click into place for a secure connection. (To unplug the print

server, you press the **latch release buttons** and pull the print server out of the LIO slot.) The RJ-45 plug on the network cable plugs into the **network connector**. When the print server establishes a valid network connection, either the "10" or "100" **link light** comes on, to indicate a connection speed of 10 mbps or 100 mbps. The **status light** shows the health of the print server (see [Interpreting the lights](#)). You push the **test button** to print a configuration page on the attached printer (see [Interpreting the configuration page](#)).

Package contents

The HP Jetdirect 200m and 250 m products include:

- print server module
- HP Jetdirect CD (includes installation software, manuals, and troubleshooting)
- setup poster



Install

the HP Jetdirect 200m and 250m print servers

For quick installation, you can use the instructions on the setup poster that came with your print server. If that poster isn't available, [click here](#) to see the same instructions on your screen.

For more detailed instructions, follow the links in the paragraphs below.

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200m, 250m

There are two parts to installing the print server: hardware installation and software installation. We recommend strongly that you install the hardware first.

Installing the hardware

The basic steps in the hardware installation are:

1. Set up the printer.
2. Plug in the print server.
3. Plug in the network cable.

[Click here](#) for detailed hardware installation instructions.

Installing the software

Software installation for network printing includes:

- installing the printer driver on your computer
- establishing the print path between your computer and the network printer

The simplest way to install the software is to use the software CD that came with your printer. That CD contains all the software you need for a successful network printer installation, including the printer driver. [Click here](#) for instructions on using this software.

The software on the printer's CD handles installation for Windows and MacOS systems. Alternative software allows installation on other operating systems, as well as configuration and management of network

printing. The [Software Solutions matrix](#) summarizes the available software, and provides links to additional information. (The HP Install Network Printer Wizard, described in the solutions matrix, is the same software that comes on the printer's CD.)



Installing the hardware

for the HP Jetdirect 200m and 250m print servers

Hardware installation for the Jetdirect 200m or 250m print server is very straightforward:

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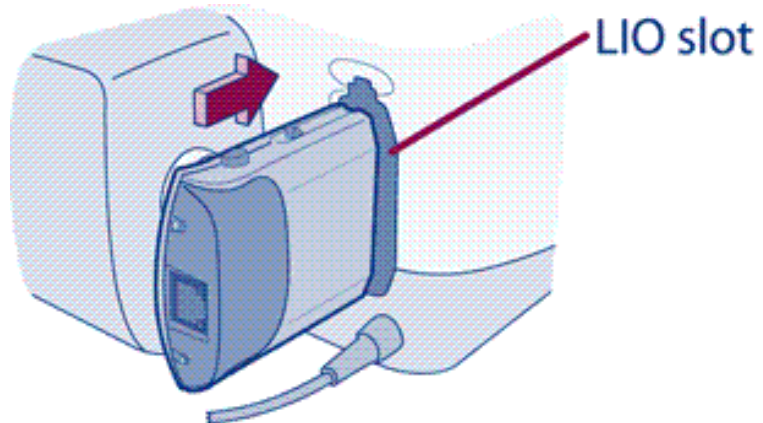
1. **Set up the printer hardware.** This step may vary among different printers, so check your printer documentation (setup poster or quick start guide) for details.

Do not connect the printer to your computer using a USB or parallel cable -- you will make your connection via the network in the next step.

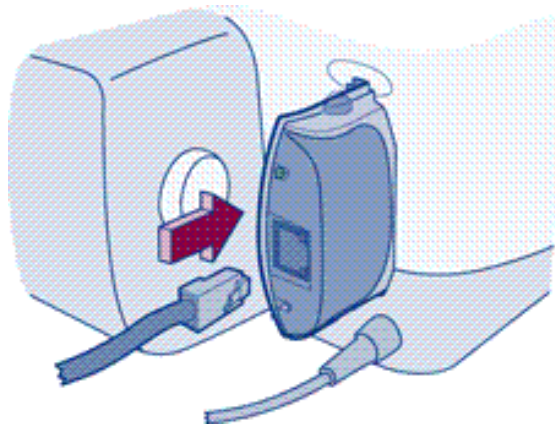
If you encounter your printer's software CD as you set up your printer, keep it handy for use in the software installation, below.

2. **Connect the print server,** as follows:

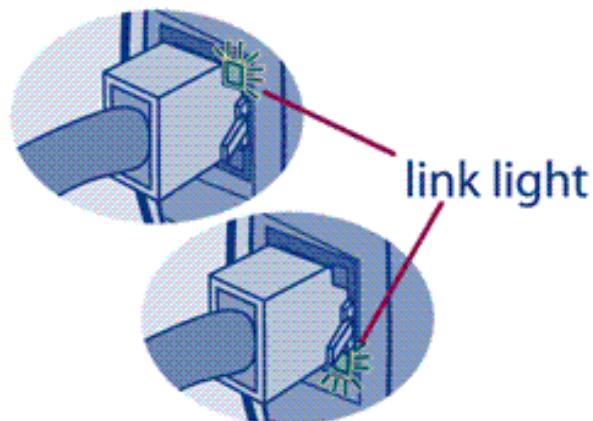
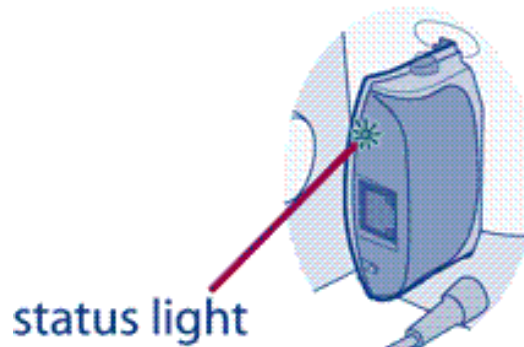
- **Switch on the printer's power.**
- **Plug in the print server.** Push it into the printer's LIO slot until it seats firmly and the latches click into place.



- **Plug in the network cable.** The print server works with either 10Base-T (Ethernet) or 100Base-TX (Fast Ethernet) network cabling, and connects via twisted-pair cabling with a standard (8-pin, RJ-45) connector. Plug one end of the cable into your network device (a hub, switch, or router — if your network cabling is hidden in the walls, your connection may be a wall outlet). Plug the other end into the print server.




- **Check the lights.** When you plug the print server into the printer, the status light should start blinking green as it executes the self-test. After the print server completes the self-test, the light should continue to blink green as long as the network cable is not plugged in. When you plug in the network cable, the status light should change to solid green to indicate a valid network connection. In addition, one of the two link lights (the "10" light or the "100" light) should come on solid green, to indicate the speed of the network connection (10 or 100 megabits per second).



If the status and link lights fail to exhibit this behavior (different color or different blink pattern), there is a problem. [Click here for the](#)

[troubleshooting procedure.](#)

- **Wait two minutes** for the print server to poll the network for available protocols and services.
- **Print a configuration page** by pushing the test button ( icon).



The printer should print a page that has information on the print server and the print server's network addresses and other parameters for the network protocols available on the network.



If the page does not print successfully, click here for the [troubleshooting procedure](#).

This completes the hardware installation.

Installing the software

for the HP Jetdirect 200m and 250m print servers



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200m, 250m

1. Choose the installation CD and run the installer.

Windows:

Use the CD that came with your printer (instead of the HP Jetdirect CD) if it is available. The printer's CD has all the software you need for a complete network installation.

Insert the printer's CD into your computer's CD drive. The CD should start automatically and offer you a choice of buttons — click on the **Install** button and follow the instructions on the screen. (If the CD does not start automatically, double-click on the SETUP program on the CD.) When the installer finishes and you can print to the network printer, you have completed the installation.

If the printer's CD is not available, insert the HP Jetdirect (print server) CD and run its installer. You will also need your printer's driver; if you don't have it, you can get it from the Web at <http://www.hp.com/cposupport/software.html>.

MacOS:

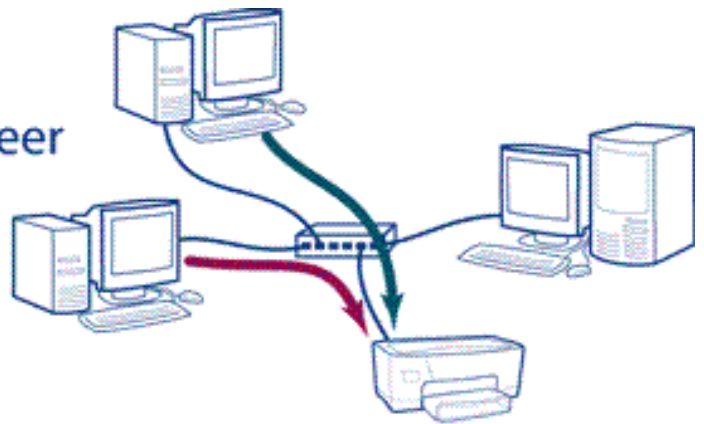
Install the printer driver from the CD that came with the printer. That driver provides connection to your network printer via the AppleTalk protocol. If the printer's CD is not available, you can get the driver from the Web at <http://www.hp.com/cposupport/software.html>.

If you need to print via the IP protocol, use the LaserJet utility on the HP Jetdirect (print server) CD.

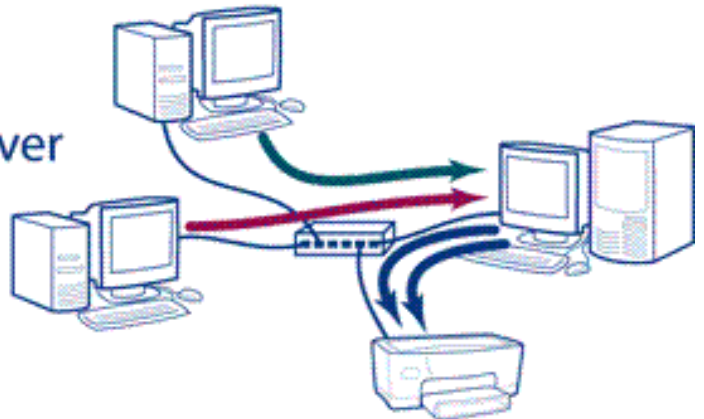
For general information on setting up network printing on Macintosh systems, [click here](#).

- 2. Set up other computers as needed.** In step 1, above, you installed the network printing software on a single computer. For a network with several computers that will use the same network printer, you will need to set up that printer on the remaining computers. The setup procedure you use depends on whether you are using peer-to-peer or client-server printing.

peer-to-peer



client/server



For peer-to-peer printing (where each computer prints directly to the network printer), run the installer (as in step 3) on each computer.

For client/server printing (where each computer sends print jobs through a network server computer), you need run the installer only on the server, and set up the server for printer sharing. Then each client computer must install the printer driver and connect to the shared printer on the network server. (An easy way to do this is to use the Microsoft Windows Point and Print function. See your operating system documentation for details on Point and Print.)

For basic information on [peer-to-peer and client/server printing](#), see the [Network Basics Tutorial](#) on the HP Jetdirect CD.

Connecting Your Macintosh to an HP Printer on an Ethernet Network

Topics:

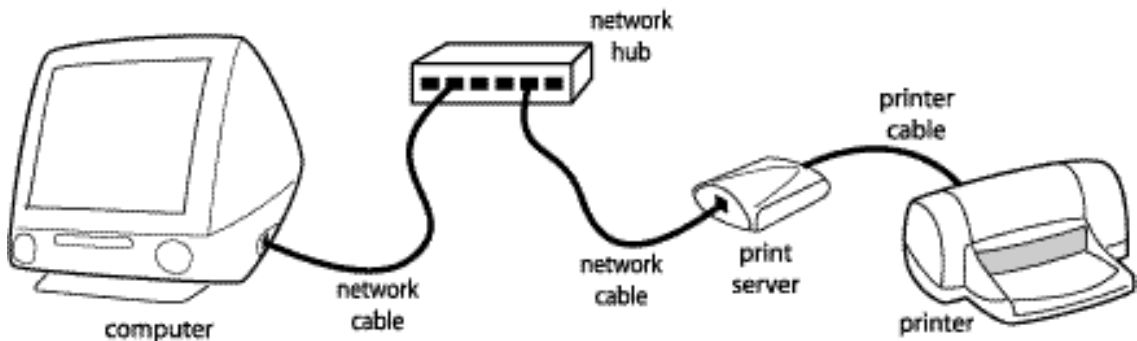
- If you simply want to print to a network printer, the easiest way is to use AppleTalk. The software you need is contained in your HP printer driver, and the setup is quite straightforward. Refer to: [The basics: setting up to print to a network printer](#).
- If you want to go beyond simple printing, you will need additional software. To manage your printer hardware -- tasks such as aligning the pens, setting the resolution, or printing test pages -- you will use either the HP DeskJet Utility (for non-PostScript printers) or the HP LaserJet Utility (for PostScript printers). The DeskJet Utility is available as part of the HP printer driver; the LaserJet Utility is available from this HP JetDirect CD-ROM (as well as other sources). For instructions, refer to: [Managing printer hardware](#). For tasks that involve the *network* aspects of your printer -- setting the printer name or printer zone, or setting up your printer for TCP/IP networking -- you will use the HP LaserJet Utility (regardless of which type of HP printer you have). Refer to: [Managing network printing](#) for instructions.
- If you don't need your printer to be on a network, but do want to connect directly to it, you can set up a direct printer connection using an Ethernet crossover cable and the network port on your system. This might be useful, for instance, if your printer's direct connect ports do not match the input/output ports on your Macintosh, as is the case with parallel printer ports. The section on [Setting up direct Ethernet printing](#) explains how to make the connection.

The basics: setting up to print to a network printer

If all you want to do is print to a network printer, the setup is pretty straightforward. The first two steps are usually taken care of by your network administrator. If you have a network administrator (and he/she is not you), you can probably skip to step 3.

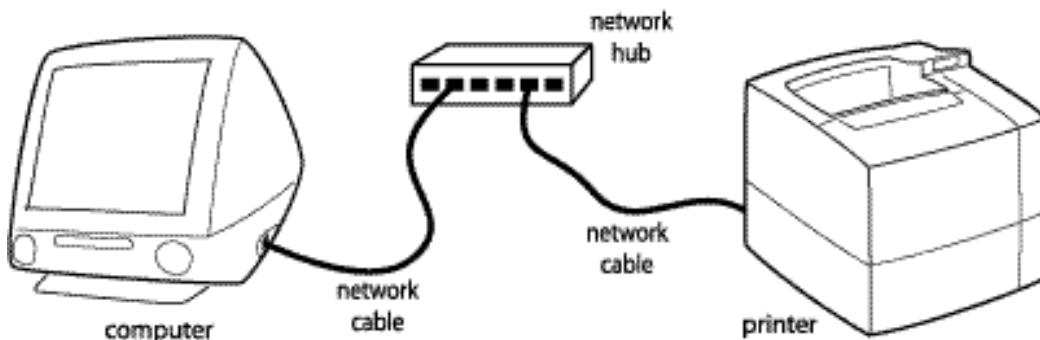
1. **Set up the printer hardware.** Remove any shipping materials; install the paper tray(s) and ink or toner cartridges (as appropriate); add paper; plug in the power cord; print a test page. Don't connect the printer to your computer. (For detailed instructions, check your printer manual or setup poster.)
2. **Connect the print server hardware.** There are a few different cases to consider:

If you use an external print server, the print server is an external device that connects via a printer cable to the printer. Connect the printer cable -- USB or parallel, as appropriate -- between the printer and print server; connect the network cable to the print server; plug in the power cord; and print a configuration page to test the print server connection. (For detailed instructions, check your print server manual or setup poster.) The connections should look generally like the following illustration.



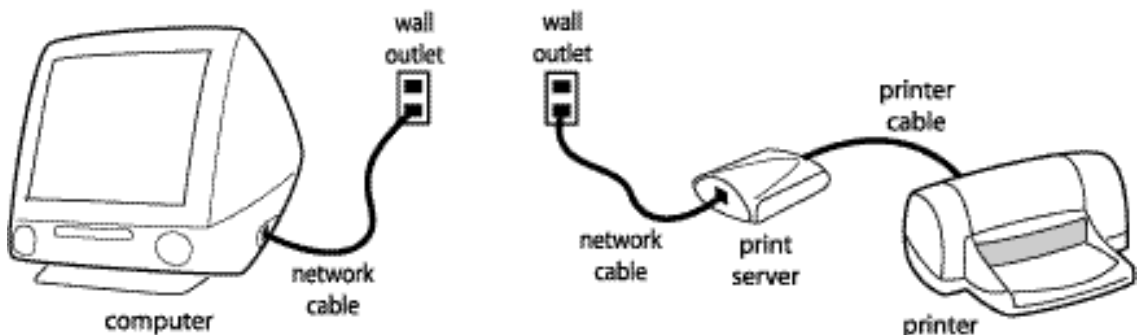
External print server setup

If you use an internal print server, the print server is a module that plugs into a slot in the printer. Many printers come with the print server module installed. If your printer server module is not already installed, plug it into its slot in the printer. Then connect the network cable directly to the print server. Finally, print a configuration page to test the print server connection. (For detailed instructions, check your print server manual or setup poster.) The connections should look like this:



Internal print server setup

If your network wiring is hidden -- In many network installations, the network components (hubs, switches, &c.) are stored in a wiring closet and the network wiring is hidden in the walls. The only sign of the network that you see in such an installation is a wall outlet that has one or two network connectors. In this case, just use network cables to plug the computer and the print server into the wall outlets. (If you have any questions about such an installation, check with your network administrator.) The connections will look generally like the following illustration.



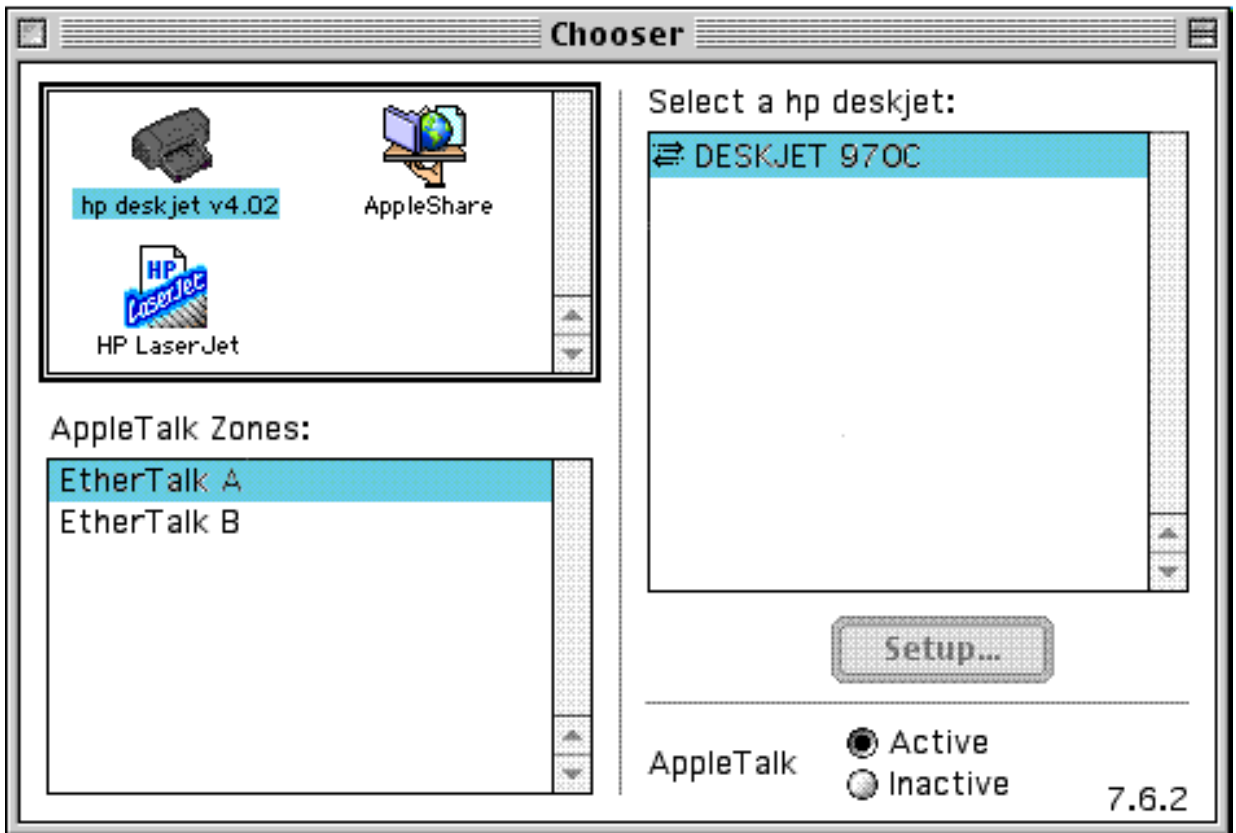
Connections to wall outlets

Note that in the drawings above we have omitted the power cords to keep things simple.

3. **Get the right printer driver.** You can get the driver from:
 - o the CD-ROM that came with the printer (this is quick, if you have the CD), or

- HP's support Web site, <http://www.hp.com/cposupport/software.html> (this gives you the latest software, though it may take some time to download)

4. **Install the driver.** Double-click on the driver installer icon and follow the instructions.
5. **Set up AppleTalk on Ethernet.** Open up the AppleTalk control panel (in Control Panels under the Apple menu) and select "Connect via: Ethernet". When you close the control panel, it will ask if you want to save the configuration; answer "Yes".
6. **Choose the printer in the chooser.** Highlight the driver type from the panel on the left; if your network has multiple zones, make sure that you have selected the correct zone; select the printer from the list in the panel on the right; make sure that AppleTalk is active.



Typical selection of network printer

That's it. You're set up to print across the network using AppleTalk. If printing is all you want to do, you're done. You don't need to use the software on the HP Jetdirect CD-ROM. (That software is for *managing* the printer, but isn't needed for installing the printer.)

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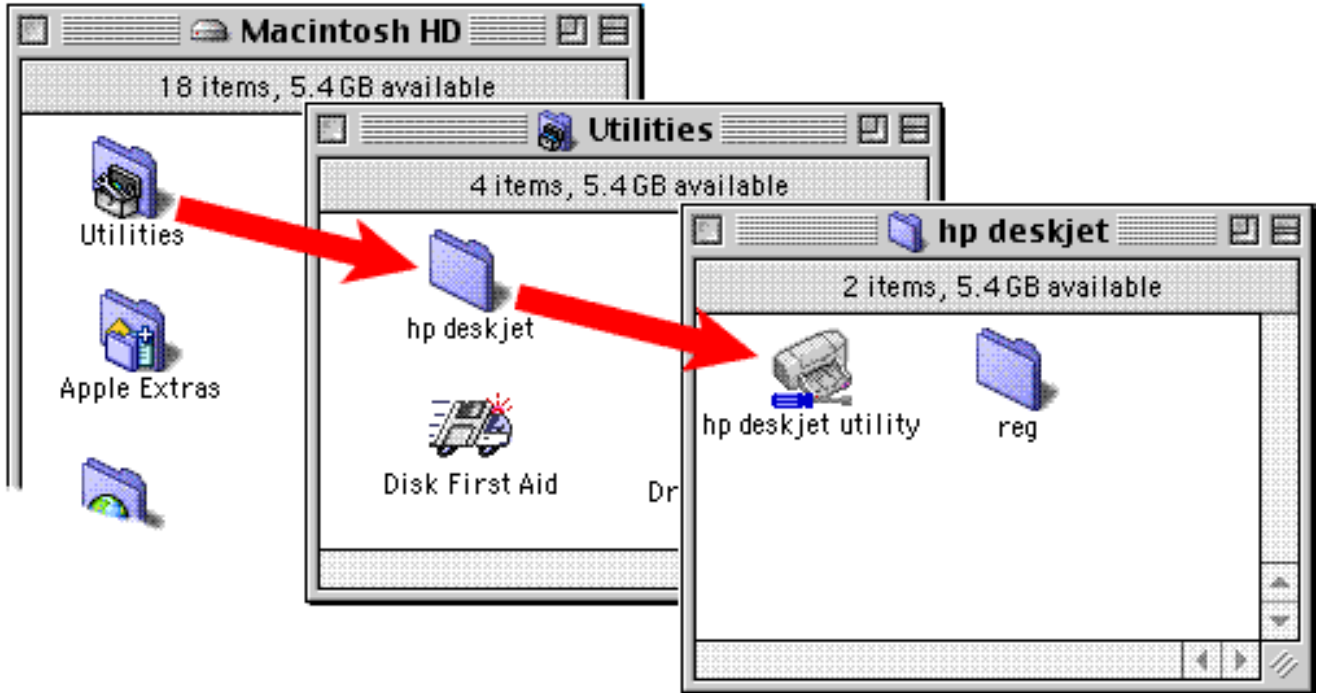
Managing printer hardware

The software for performing printer management tasks, such as aligning pens and setting printer

resolution, varies depending on whether your printer is a PostScript printer or a non-PostScript printer.

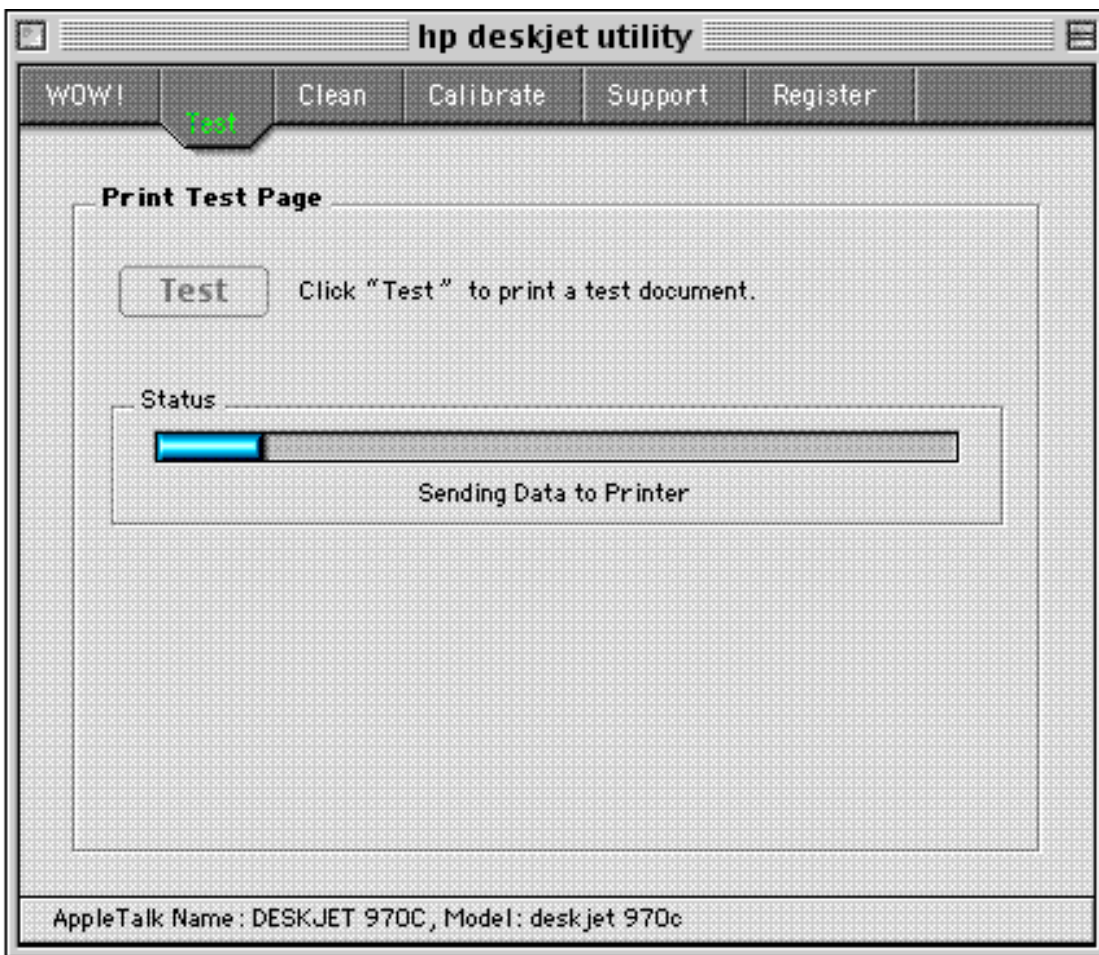
For non-PostScript printers (HP DeskJet, PhotoSmart, and OfficeJet):

Use the HP DeskJet Utility. This utility comes with the printer driver (from the CD or Web download)-- you probably installed the printer driver when you set up network printing (the first task covered by this document). To find the DeskJet utility, go to your system drive, open the Utilities folder, and then open the hp deskjet folder.



Location of the HP DeskJet Utility

Double-click on the HP DeskJet Utility to start it, and you will see this dialog box:



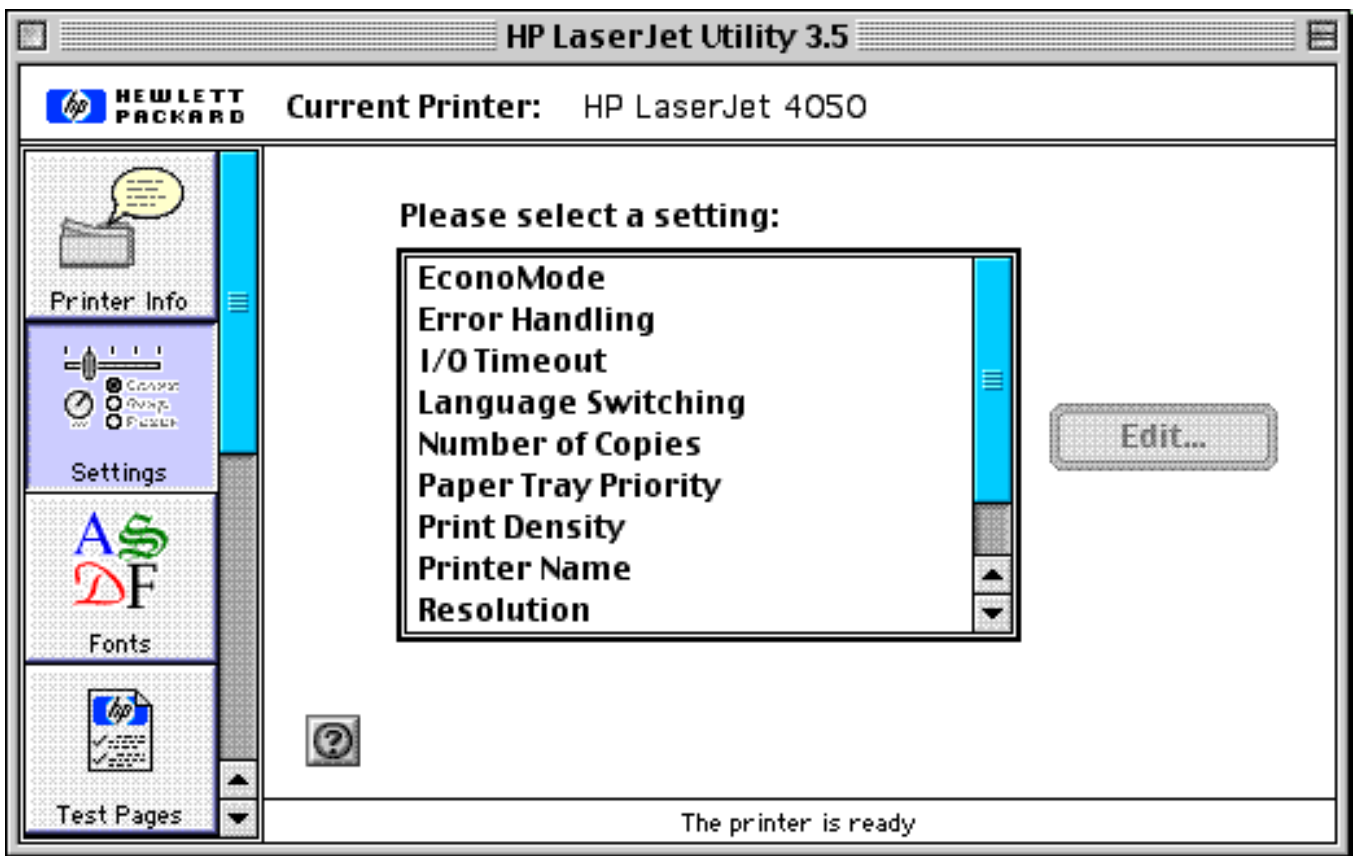
HP DeskJet Utility

Check the printer listed in the status bar at the bottom of the dialog box. If it's not the printer you want to manage, go to the File menu, click on Select Printer, and select the appropriate printer.

Once you have the correct printer, you can perform any of the functions listed on the tabs at the top. Just click on the tab and follow the instructions that appear in the dialog box.

For PostScript printers (HP LaserJet and DesignJet):

Use the HP LaserJet Utility. This utility comes on the HP JetDirect CD-ROM (this CD); it is also available on the printer driver CD and via Web download. To install the utility from the JetDirect CD-ROM, open up the CD in the Finder and double-click on the version of the LaserJet Installer in your language; this installs the LaserJet Utility on your desktop. Then double-click on the LaserJet Utility icon on your desktop, and you will see a dialog box like this (the items in the list may vary with the printer you have selected):



HP LaserJet Utility

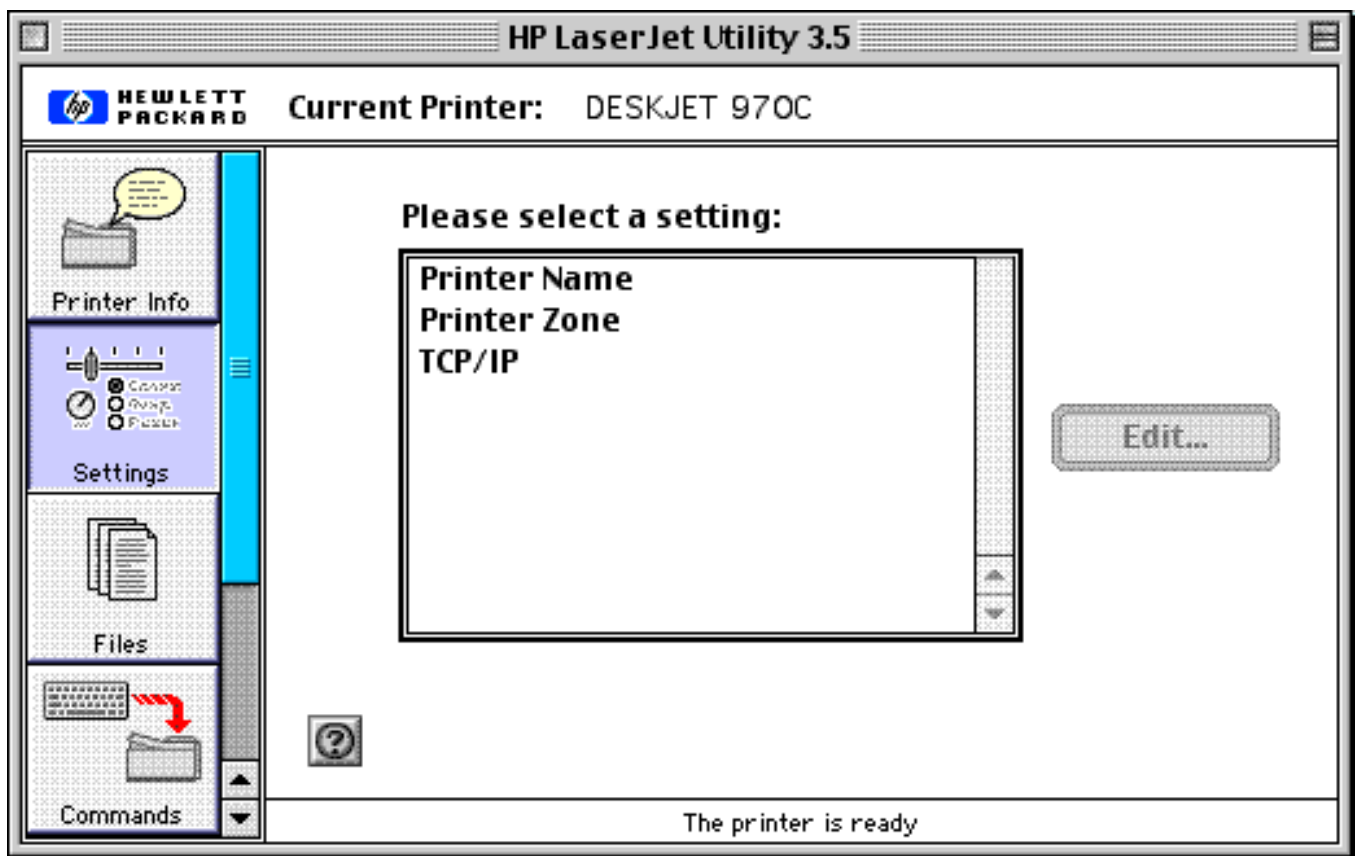
Check the current printer listed at the top of the dialog box. If it's not the printer you want to manage, click on the Printer Info button at the top of the left-hand column of buttons, click on the Select Printer button that appears in the main panel, and select the printer you want to manage. (You may need to change the printer type -- HP DeskWriter, PostScript Printer, &c. -- to see the printer you want.)

When you have selected the correct printer, click on the Settings button (second button in the left-hand column of buttons), choose the setting you want to change from the list in the main panel, click on the Edit button, and follow the instructions that appear.

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Managing network printing

To change the printer name, printer zone, or TCP/IP parameters, use the HP LaserJet Utility. (You can use this utility even if your printer is not an HP LaserJet printer -- it works for DeskJet, PhotoSmart, OfficeJet, and DesignJet printers, too.) The utility comes on the HP JetDirect CD-ROM (this CD); it is also available on the printer driver CD and via Web download. To install the utility from the JetDirect CD-ROM, open up the CD in the Finder and double-click on the version of the LaserJet Installer in your language; this installs the LaserJet Utility on your desktop. Then double-click on the LaserJet Utility icon on your desktop, and you will see a dialog box like this (the items in the list may vary with the printer you have selected):



HP LaserJet Utility

Check the current printer listed at the top of the dialog box. If it's not the printer you want to manage, click on the Printer Info button at the top of the left-hand column of buttons, click on the Select Printer button that appears in the main panel, and select the printer you want to manage. (You may need to change the printer type -- HP DeskWriter, PostScript Printer, &c. -- to see the printer you want.)

Once you have selected the correct printer, click on the Settings button (second button in the left-hand column of buttons), choose the setting you want to change from the list in the main panel, click on the Edit button, and follow the instructions that appear.

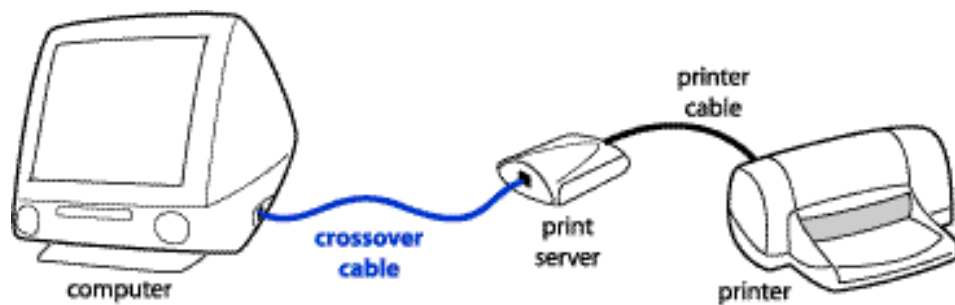
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Setting up direct Ethernet printing

If you want a direct connection to your printer but don't need to share the printer with other computers, you can use an Ethernet crossover cable to make a direct connection between the computer and the HP JetDirect print server that attaches to the printer. (Note that this is not a standard network connection, though experience has shown it to work well in many cases. For best results, we recommend that Ethernet connections be made through standard network components, such as hubs and switches.)

The Ethernet crossover cable is available from most computer stores and mail-order houses; it is also

available as HP part number C6080-60015. Connect it from the network connector on the Macintosh to the network connector on the print server, as shown in the illustration below. If your print server is an external model, connect a printer cable between the print server and the printer. The illustration shows a typical print server and printer; yours may look different, but the basic cabling scheme will be the same. Note that we have omitted power cords from this drawing to keep things simple.



Crossover connection for fast direct printing

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Configure and Manage

the HP Jetdirect 200m and 250m print servers

This section describes the tools you can use to configure and manage your print server, as well as the settings you can apply for various protocols. Use this page to link to topics of interest.

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[Default configuration](#) -- describes the print server's configuration as it comes from the factory, and tells how to reset it to that configuration.

[Software solutions matrix](#) -- describes a variety of software tools that you can use to install, configure, and manage a network printer. (These are the same tools described in the *Install* section.) These tools cover a variety of functions in a variety of operating environments. In general, they allow you to set parameters for the various protocols listed below.

[Embedded Web server](#) -- describes the Web server contained within the print server. The embedded Web server provides another way to configure and manage the print server.

Protocols -- provides information on configuring the various protocols supported by the HP Jetdirect 200m and 250m print servers.

- **[TCP/IP](#)** -- includes an overview of TCP/IP, as well as information on these methods of applying TCP/IP parameters to the print server:
 - BOOTP/TFTP
 - DHCP
 - RARP
 - arp and ping
 - Telnet
 - embedded Web server
- **[LPD](#)** (line printer daemon) printing
- **[FTP](#)** printing
- **DLC/LLC** -- can be enabled or disabled; otherwise there are no parameters to set on the Jetdirect module.
- **IPX/SPX** -- in most cases, parameters do not need to be set on the Jetdirect module.
- **AppleTalk** -- Printer Name and Printer Zone parameters can be set through the [HP LaserJet Utility for MacOS](#).

[Security features](#) -- describes the security offered by the various ways of configuring and managing the print server.

Default configuration



Fresh from the factory, before any configuration is changed by a user, the HP Jetdirect 200m and 250m print servers have a default configuration for TCP/IP and for IPX peer-to-peer printing (called IPX direct mode). When power is applied in this factory-default state:

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- **TCP/IP:** The print server sends out several BOOTP requests and one RARP request. If there is no reply, the print server sends out several DHCP requests. If there is no reply, then the print server uses the default IP address of 192.0.0.192 to appear on the network ready for manual configuration by a user (using the Install Network Printer wizard or any of the other configuration methods).
- **IPX:** The print server tries to determine and use the IPX network number. It is then ready for further configuration by a user (using the Install Network Printer wizard or any of the other configuration methods).

When power is cycled thereafter, the configuration remains as set previously.

- For IPX, the network number is reassigned automatically.
- For TCP/IP, one of the following applies:
 - If a BOOTP reply set the print server's IP configuration previously, BOOTP replies continue to be sent when power is cycled. If no reply is received, factory default sequence continues, as described above.
 - If a DHCP reply set the print server's IP configuration previously, DHCP requests continue to be sent indefinitely.
 - If any configuration changes were made manually by a user, then this manual configuration continues to be used.
 - If none of the above have been set, the factory default sequence is used, as described above.

Resetting the print server to factory defaults (cold reset)

The factory-default reset procedure is sometimes called a “cold reset” or a “cold boot”. When done, the print server responds exactly like it was fresh from the factory. To reset the print server configuration to factory

defaults, follow these steps:

1. Make sure that the printer's power is on.
2. Unplug the print server from the printer.
3. While holding down the **Test** button on the print server, plug the print server back into the printer; continue to hold down the Test button for about five seconds. Any user-configured settings will be erased.

HP Software Solutions Summary



Introduction

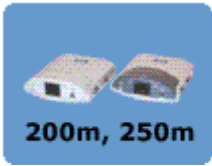
HP provides a variety of software solutions to set up or manage your HP Jetdirect-connected network devices. See [Software Solutions](#) to help you determine which software is best for you:

Note For more information on these and other solutions, visit HP Customer Care Online at: http://www.hp.com/support/net_printing

Table 2.1 Software Solutions

Operating Environment	Function	Remarks
<u>HP Install Network Printer Wizard (Windows)</u>		
Windows 95, 98, Me, NT 4.0, 2000 NetWare 3.x, 4.x, 5.x TCP/IP, IPX/SPX	Install a single network printer on a peer-to-peer or client-server network	<ul style="list-style-type: none"> Simple printer installation, typically integrated with printer system software Runs from CD-ROM Installable version that runs from your hard disk is available
<u>HP Jetdirect Printer Installer for UNIX</u>		
HP-UX 10.x-10.20, 11.x Solaris 2.5.x, 2.6, 7 (SPARCsystems only) TCP/IP	Fast and easy installation of HP Jetdirect-connected printers	
<u>HP Web JetAdmin</u>		
Windows NT 4.0, 2000 HP-UX Solaris Red Hat Linux, SuSE Linux NetWare* TCP/IP, IPX/SPX *Supports queue creation (NetWare), and peripheral management from HP Web JetAdmin hosted on Windows NT 4.0, 2000	<p>Remote installation, configuration, and management of HP Jetdirect-connected print servers, non-HP printers that support the standard MIBs, and printers with embedded web servers</p> <p>Alerts and consumables management</p> <p>Remote firmware upgrades for HP Jetdirect print servers</p> <p>Asset tracking and utilization analysis</p>	<ul style="list-style-type: none"> HP's preferred solution for ongoing management and installation of multiple printers anywhere on your intranet Browser-based management
<u>Internet Printer Connection Software</u>		

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<p>Windows NT 4.0, 2000 (Intel) TCP/IP only Note: Microsoft Internet Printing software is also integrated with Windows 2000.</p>	<p>Printing via the Internet to Internet Printing Protocol (IPP)-enabled HP Jetdirect-connected printers</p>	<ul style="list-style-type: none"> • Allows economical distribution of high-quality hardcopy documents over the Internet, replacing fax, mail, and overnight services • Requires HP Jetdirect print server (firmware version X.07.17 or greater)
<p><u>HP IP/IPX Printer Gateway for NDPS</u></p>		
<p>NetWare 4.11, 4.2, 5.x</p>	<p>Simplified installation, printing, and bidirectional management of HP Jetdirect-connected printers under Novell Distributed Print Services (NDPS) Allows automatic discovery and installation of HP Jetdirect-connected printers into NDPS</p>	<ul style="list-style-type: none"> • Frees up user licenses • Allows disabling of SAPs to reduce network traffic • Requires HP Jetdirect firmware version X.03.06 or greater
<p><u>HP LaserJet Utility for Mac OS</u></p>		
<p>Mac OS 7.5 or greater</p>	<p>Installation and management of HP Jetdirect-connected printers</p>	



HP Install Network Printer Wizard (Windows)

The HP Install Network Printer wizard is a software module for quick and easy printer installation on a Microsoft IP/IPX or Novell NetWare network. The wizard allows you to configure the printer with IP parameters on a TCP/IP network, or NDS/Bindery objects on a Novell NetWare network.

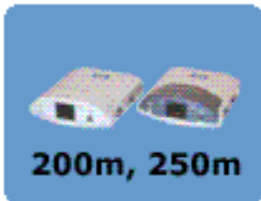
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This wizard is typically integrated with your printer system installation software and runs from your CD-ROM. A version that runs from your system disk is also available and can be downloaded from HP Customer Care Online at:

http://www.hp.com/support/net_printing

The HP Install Network Printer wizard is also included on the HP Jetdirect CD-ROM, provided with standalone HP Jetdirect products. The wizard is initiated when you select "Install Network Printer" from the CD-ROM interface.



Requirements

- Microsoft Windows 2000, Windows NT 4.0, Windows 95/98/Me
 - TCP/IP or IPX/SPX network protocol
- Novell NetWare 3.x, 4.x, and 5.x
 - Novell Client software for Microsoft Windows 95/98/Me/NT 4.0/2000, Windows NT 4.0, 95/98/Me
 - Queue Server Mode
 - IPX/SPX network protocol
- The correct printer driver
- Printer connection to the network through an HP Jetdirect print server

HP Jetdirect Printer Installer for UNIX



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The HP Jetdirect Printer Installer for UNIX contains support for HP-UX and Solaris systems. The software installs, configures and provides diagnostics capabilities for HP printers connected to TCP/IP networks using HP Jetdirect print servers.

The software is distributed through the following methods:

- On the HP Jetdirect CD-ROM, provided with standalone HP Jetdirect print servers
- Anonymous FTP site at <ftp.hp.com> (Directory: /pub/networking/software)
- HP Customer Care Online at:
http://www.hp.com/support/net_printing

For system requirements and installation information, see the documentation provided with the software.

HP Web JetAdmin



HP Web JetAdmin allows you to use a Web browser to install, view, manage, and diagnose devices connected to an HP Jetdirect print server. HP Web JetAdmin supports devices that contain Standard Printer MIB (Management Information Base) objects.

For information about a procedure or window in the HP Web JetAdmin software, see the online help.

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System Requirements

HP Web JetAdmin software runs on Microsoft Windows NT 4.0, Windows 2000, HP-UX, Solaris, Red Hat Linux, and SuSE Linux systems. For information on supported operating systems, supported Novell NetWare clients, and compatible browser versions, visit HP Customer Care Online at <http://www.hp.com/go/webjetadmin/>.

Note When installed on a supported host server, HP Web JetAdmin can be accessed from any client through a compatible web browser by browsing to the HP Web JetAdmin host. This allows printer installation and management on Novell NetWare, and other networks.

Installing HP Web JetAdmin

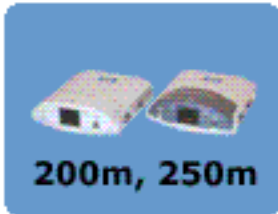
Before installing the HP Web JetAdmin software, you must have domain administrator or root privileges:

- 1 Download the installation files from HP Customer Care Online at <http://www.hp.com/go/webjetadmin/>.
- 2 Follow the instructions on the screen to install the HP Web JetAdmin software.

Note Installation instructions are also contained in the HP Web JetAdmin install file.

Verifying Installation and Providing Access

- Verify that the HP Web JetAdmin software is correctly installed by navigating to it with your browser as shown in the following example:



```
http://server.domain:port/
```

where `server.domain` is the host name of your web server and `port` is the port number assigned during installation.

- Provide users access to HP Web JetAdmin software by adding a link to your web server's home page that is addressed to HP Web JetAdmin's URL. For example:

```
http://server.domain:port/
```

Configuring and Modifying a Device

Using your browser, navigate to HP Web JetAdmin's URL. For example:

```
http://server.domain:port/
```

Follow the instructions on the appropriate home page to configure or modify your printer.

Note You can also substitute the `server.domain` with the TCP/IP address.

Removing HP Web JetAdmin Software

To remove HP Web JetAdmin software from your web server, use the uninstall program provided with the software package.



Internet Printer Connection Software

HP Jetdirect print servers (firmware version x.07.17 or greater) support the Internet Printing Protocol (IPP). Using the appropriate software on your system, you can create an IPP print path from your system to any HP Jetdirect-connected printer over the Internet.

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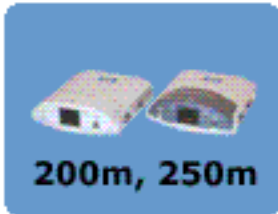
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Note For incoming print path requests, the network administrator must configure the firewall to accept incoming IPP requests. Security features available in the software are currently limited.

Features and benefits provided by Internet printing include:

- High-quality, time-sensitive documents.
- Full-color or black-and-white documents.
- A fraction of the cost of current methods (such as fax, mail, or overnight delivery services).
- Extends the traditional LAN printing model to that of an Internet Printing Model.
- IPP requests can be transmitted outbound through firewalls.



HP Supplied Software

HP Internet Printer Connection software allows you to set up Internet printing from Windows NT 4.0 and Windows 2000 clients.

1 To obtain the software:

Download the HP Internet Printer Connection software from HP Customer Care online at:

http://www.hp.com/go/print_connect

2 To install the software and set up the print path to the printer, follow the instructions provided with the software. Contact your network administrator to get the IP address or URL of the printer to complete the setup.

HP Software System Requirements

- Computer running Microsoft Windows NT 4.0 (Intel based) or Windows 2000

- IPP-enabled HP Jetdirect print server (firmware must be at revision x.07.17 or greater)

HP Software Supported Proxies

- Web proxy with support for HTTP v1.1 or greater (may not be needed if printing over an intranet)

Microsoft Supplied Software

Note Contact Microsoft for support of Windows IPP software.

Windows 2000 Integrated Software

On Windows 2000 systems, an alternative to using the HP supplied software is to use the IPP-client software integrated with Windows 2000. The IPP implementation on the HP Jetdirect print server is compatible with Windows 2000 IPP-client software.

To set up a print path to an HP Jetdirect-connected Internet printer using the Windows 2000 IPP-client software, proceed as follows:

- 1** Open the Printers folder (click **Start**, select **Settings**, and select **Printers**).
- 2** Run the Add Printer wizard (double-click **Add Printer**), then click **Next**.
- 3** Select **Network Printer** and click **Next**.
- 4** Select **Connect to a printer on the Internet** and enter the print server's URL:

`http://IP_address[/ipp/port#]`

where *IP_address* is the IP address configured on the HP Jetdirect print server. [/ipp/port#] identifies the port number on a multi-port HP Jetdirect external print server (port1, port2, or port3) that the printer is connected to (default is /ipp/port1).

Examples:

<p>http://192.160.45.40</p>	<p>An IPP connection to HP Jetdirect 610N internal print server with IP address 192.160.45.40. ("/ipp/port1" is assumed and not required.)</p>
<p>http://192.160.45.39/ipp/port2</p>	<p>An IPP connection to HP Jetdirect external print server with IP address 192.160.45.39 and the printer on port 2</p>

Then click **Next**.

- 5** You will be prompted for a printer driver (the HP Jetdirect print server does not contain printer drivers, so your system cannot automatically obtain the driver). Click **OK** to install the printer driver onto your system and follow the instructions on the screen. (You may need your printer CD-ROM to install the driver.)
- 6** To complete the print path setup, follow the instructions on the screen.

Windows Me IPP Client

The IPP implementation on the HP Jetdirect print server is compatible with Windows Me IPP-client software. The IPP client is installed from the Add-Ons folder on the Windows Me CD-ROM. For installation and setup of a Windows Me IPP client, see the instructions provided with the Windows Me CD-ROM.

Novell Supplied Software

The HP Jetdirect print server is compatible with IPP running on NetWare 5.1 with SP1 or later. For NetWare client support, refer to your NetWare technical documentation or contact Novell.



HP IP/IPX Printer Gateway for NDPS

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NDPS (Novell Distributed Print Services) is a printing architecture developed by Novell, in partnership with Hewlett-Packard. NDPS simplifies and streamlines the administration of network printing. It eliminates the need to set up and link print queues, printer objects, and print servers. Administrators can use NDPS to manage networked printers within the NetWare 4.11, NetWare 4.2, and NetWare 5.x environments.

The HP IP/IPX Printer Gateway is an NLM developed by HP to provide functionality and compatibility with Novell's NDPS. It seamlessly integrates HP Jetdirect-attached printers into the NDPS environment. Using the HP Gateway, an administrator can view statistics, configure gateway settings, and configure printing for HP Jetdirect-connected printers.

Features

Features and benefits provided by the HP Gateway and NDPS are:

- Smart detection of printers in the NetWare 4.11, 4.2, and NetWare 5.x environments
- Automatic installation of printers using IP/IPX
- Tight integration with Novell's NDS and NWAdmin
- Status updates from printers
- Simplified Automatic Driver Download
- Reduced SAP Traffic
- Reduces the number of required NetWare User Licenses
- Native TCP/IP printing with NetWare 5.x

System Requirements

For the most recent information on system requirements and supported clients, visit HP Customer Care Online at:

http://www.hp.com/go/ndps_gateway

The HP IP/IPX Printer Gateway is included with all current versions of NDPS/NEPS. Novell NetWare 5.x includes NDPS, while NEPS can be added to NetWare 4.11, 4.2.

Note For more information (including access to the most recent HP IP/IPX Printer Gateway software and the User Guide), access HP Customer Care Online

http://www.hp.com/support/net_printing.

HP LaserJet Utility for Mac OS



This section describes printer installation software for Mac OS-compatible computer systems. It also explains how to use the HP LaserJet Utility to configure HP printers connected to an AppleTalk network through an HP Jetdirect print server. This section also explains how to use the Chooser to select and set up a Mac OS computer to print to your HP printer.

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Installing the Printer Software

If the HP LaserJet Utility was included on your printer's CD-ROM, see your printer documentation for installation instructions, then skip to the next section to configure the printer.

If you are installing the HP LaserJet Utility from the *HP Jetdirect* CD-ROM, use the following installation instructions.

Note If you are installing the HP LaserJet Utility from a source other than the CD-ROM, see the README file that accompanies the software for installation instructions.

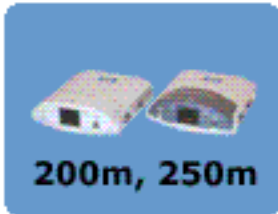
Note Automatic virus detection programs might interfere with the installation of this software. Turn off any such programs that are active on your Mac OS computer before proceeding with the installation process.

- 1 Insert the CD-ROM into the CD-ROM drive.
- 2 In the *HP Installer* window, double-click the installation icon for the software in the language you want.
- 3 Follow the instructions on the screen.

For more information about configuring your printer driver, see the online documentation provided on the CD-ROM that came with the printer.

Configuring the Printer

The HP LaserJet Utility allows printer settings such as printer name and preferred zone to be configured from your Mac OS system. Hewlett-Packard recommends that only network administrators use the printer configuration capabilities of this utility.



If this printer is to be serviced by a print spooler, set up the printer's name and zone before configuring the spooler to capture the printer.

Running the HP LaserJet Utility

- 1 With the printer turned on and online, and the print server connected to the printer and to the network, double-click the **HP LaserJet Utility** icon.
- 2 If the printer's name is not listed as the target printer, click **Select Printer**. The *Select a Target Printer* window appears.
 - Select the zone, if necessary, from the *AppleTalk Zones* list in which the printer resides. The zone the printer is in is shown on the configuration page. See the hardware installation guide for your print server or your printer's getting started guide for instructions on printing a configuration page.
 - Select the printer from the *Available Printers* list and click **OK**.

Verifying Network Configuration

To verify your current network configuration, print a Jetdirect configuration page. If you have not printed a configuration page from your printer, see the hardware installation guide for your print server or your printer's getting started guide for instructions (see [Interpreting the configuration page](#) for more information). If your printer has a control panel, make sure a READY message appears on the control panel for at least 1 minute, then print the page. The current configuration is listed under "AppleTalk" on the configuration page.

Note If you have multiple printers on your network, you need to print a configuration page to identify the printer's name and zone.

Renaming the Printer

The factory supplies a default name for your printer. **Hewlett-Packard highly recommends that you rename your printer to avoid having multiple printers with similar names on your network.** You can name your printer anything you like—for example, "Michael's LaserJet 4000." The HP LaserJet Utility has the ability to rename devices located in different zones, as well as the local zone (no zones need to be present in order to use the HP LaserJet Utility).

- 1 Select the **Settings** icon from the scrolling icon list. The *Please select a setting:* dialog appears.
- 2 Select **Printer Name** in the list.
- 3 Click **Edit**. The *Set Printer Name* dialog box appears.
- 4 Type the new name.

Note The name may be up to 32 characters in length. A warning beep indicates that an illegal character was typed.

- 5 Click **OK**.

Note If you try to name your printer the same name as another printer, an alert dialog box appears directing you to select another name. To select another name, repeat steps 4 and 5.

- 6 If your printer is on an EtherTalk network, continue with the next section, "[Selecting a Zone](#)."
- 7 To exit, select **Quit** from the *File* menu.

Notify everyone on your network of the new name for your printer so they can select the printer in the Chooser.

Selecting a Zone

The HP LaserJet Utility allows you to select a preferred zone for your printer on a Phase 2 EtherTalk network. Instead of your printer remaining on the default zone, which is set by the router, this utility lets you select the zone on which your printer appears. The zones on which your printer can reside are limited by your network configuration. **The HP LaserJet Utility only enables you to select a zone that is already configured for your network.**

Zones are groups of computers, printers, and other AppleTalk devices. They can be grouped by physical location (for example, Zone A may contain all the printers on the network in building A). They may also be grouped logically (for example, all printers used in the finance department).

- 1 Select the **Settings** icon from the scrolling icon list. The *Please Select a Setting:* dialog box appears.
- 2 Select **Printer Zone** in the list and click **Edit**. The *Select a Zone* dialog box appears.
- 3 Select your preferred network zone from the *Select a Zone:* list and click **Set Zone**.
- 4 To exit, select **Quit** from the *File* menu.

Notify everyone on your network of the new zone for your printer so they can select the printer in the Chooser.

Selecting Your Printer

- 1 Select the **Chooser** from the *Apple* menu.
- 2 Select the printer icon for use with your printer. If the appropriate printer icon does not appear in the Chooser, or you are not sure which icon to select for your printer, see "[Installing the Printer Software](#)" in this chapter.
- 3 If AppleTalk is not active, an alert dialog box appears on your screen. Select **OK**. The *Active* button turns on.

If your network is linked to other networks, the *AppleTalk Zones* list dialog box appears in the Chooser.
- 4 If applicable, select the zone in the *AppleTalk Zones* scrolling list where your printer is located.
- 5 Select the printer name you want to use from the list of printer names in the upper-right area of the Chooser. If the printer's name does not appear in the list, make sure the following tasks have been performed:
 - the printer is turned on and is online.
 - the print server is connected to the printer and to the network.
 - the printer cable connections are secure.

A **READY** message should appear if the printer has a control panel display. See the chapter on "[Troubleshooting during installation](#)" for more information.

- Note** If your printer is the only name listed in the dialog box, you must still select it. Your printer remains selected until you select a different printer with the Chooser.
- 6 Click **Setup** or **Create** in the Chooser; then, if prompted, select the appropriate PostScript Printer Description file (PPD) for the printer. For more information, see the online documentation (*HP LaserJet Printing Guide*).
 - 7 Set **Background Printing** to **ON** or **OFF**.

If background printing is turned **OFF** when you send a print job to the printer, status messages appear on your screen and you have to wait until the messages clear before continuing your work. If background printing is turned **ON**, the messages are redirected to the PrintMonitor and you can continue working while the printer is printing your job.

8 Exit the Chooser.

To display your user name on the network when you are printing documents, go into the Control Panel on your Mac OS computer, select **Sharing Setup**, then type your owner name.

Testing the Configuration

- 1** Select **Print Window** from the *File* menu, or if no window is open, select **Print Desktop**.

The *Print* dialog box appears.

- 2** Click **Print**.

If the printer prints the job, you have connected your printer to your network correctly. If your printer does not print, see the chapter on "[Troubleshooting during installation](#)."

Using the Embedded Web Server



This section covers the following topics:

- [Introduction](#)
- [Requirements](#)
- [Viewing the embedded Web server](#)
- [The Home tab](#)
- [The Networking tab](#)
- [Other links](#)

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Introduction

HP Jetdirect print servers contain an embedded web server that can be accessed from a compatible web browser over an intranet. The embedded web server provides access to configuration and management pages for the HP Jetdirect print server and the attached network device (such as a printer or multifunction, all-in-one device).

Because the network device may also contain an embedded web server, the Home page initially displayed by the browser will depend on the device:

- If the device contains a supportable embedded web server, the device's Home page will be displayed.
- If the device does not contain a supportable embedded web server, the Home page of the HP Jetdirect print server is displayed. A typical Home page displayed by the HP Jetdirect print server (firmware version x.21.01 or greater) is illustrated in [Typical HP Jetdirect Home Page](#). For more information on the HP Jetdirect Home page, see "[HP Jetdirect \[Home\] Tab](#)".



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HP Jetdirect [Home] Tab



Figure B.1 Typical HP Jetdirect Home Page

A Networking tab, (see [HP Jetdirect \[Networking\] Tab Pages](#)) provides access to network status and configuration pages on the HP Jetdirect print server.

HP Jetdirect [Networking] Tab

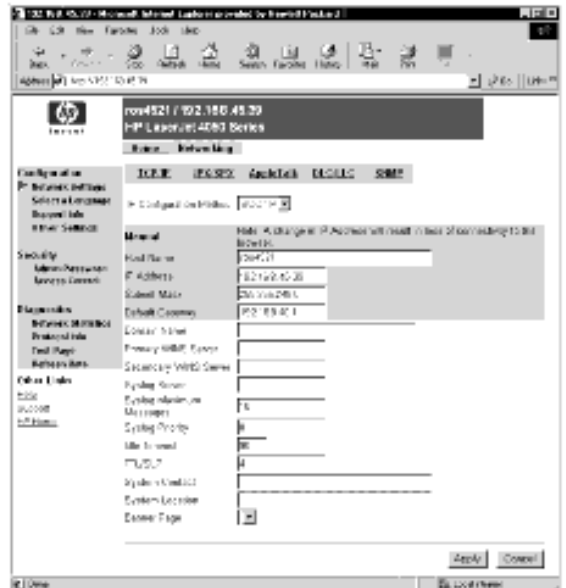


Figure B.2 HP Jetdirect [Networking] Tab Pages

For network parameter descriptions, see "[\[Networking\] Tab](#)".

Next topic: [Requirements](#)

Requirements



Compatible Web Browsers

The embedded web server has been tested with the following web browsers:

- Windows 95/98 and NT 4.0:
 - Netscape Navigator 4.6x, 4.7x, 6.0
 - Microsoft Internet Explorer 5.0, 5.01, 5.5
- Windows Me
 - Netscape Navigator 4.6x, 4.7x, 6.0
 - Microsoft Internet Explorer 5.0, 5.5
- Windows 2000:
 - Netscape Navigator 4.6x, 4.7x, 6.0
 - Microsoft Internet Explorer 5.0, 5.5
- Mac OS 8, 9
 - Netscape Navigator 4.6x, 4.7x, 6.0
- HP-UX 10.20 and Solaris 2.5x, 2.6, 7, 8
 - Netscape Navigator 4.7x, 6.0
- HP-UX 11.0
 - Netscape Navigator 4.72 - 4.75, 6.0
- Linux System
 - Netscape Navigator 4.6x, 4.7x, 6.0

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For the latest list of compatible web browsers, visit HP's Customer Care Online (<http://www.hp.com/go/support>).

Supported HP Web JetAdmin Version

HP Web JetAdmin is a printer installation and management application for intranets and is available from HP Customer Care Online (http://www.hp.com/support/net_printing).

HP Web JetAdmin version 6.1 or greater is recommended for operation with the HP Jetdirect embedded web server.

Next topic: [Viewing the embedded Web server](#)

Viewing the Embedded Web Server



Before you can use the embedded web server, the HP Jetdirect print server must be configured with an IP address. For a description of an IP address and an overview of TCP/IP networking, see [TCP/IP Overview](#).

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There are many ways to configure an IP address on the print server. For example, you can automatically configure IP parameters over the network using BOOTP (Bootstrap Protocol) or DHCP (Dynamic Host Configuration Protocol) each time the printer is turned on. Or, you can manually configure IP parameters using the printer's control panel (for selected printers), Telnet, the "arp" and "ping" commands, HP Web JetAdmin or other management software. For more information on TCP/IP configuration options, see [TCP/IP Configuration](#).

If the HP Jetdirect print server does not receive its IP configuration within two minutes, a default IP address is automatically assigned: 192.0.0.192. This address is not a valid IP address for your network but can be used to initially access the HP Jetdirect print server. However, to use the default IP address, you must temporarily set up your system with the same IP network number or establish a route to the print server.

After an IP address is established on the print server, perform the following steps:

- 1 Run a supported web browser.
- 2 Enter the IP address of the print server as the URL.



Figure B.3 Entering the IP Address

The embedded web server's Home page will be displayed.

Home, Device, and Networking Tabs

The embedded web server provides several tabs to access related features: {Home}, [Device], and [Networking]. Each tab provides menu item links (on the left side of the page) to additional web pages.

- [Home] tab: As previously described, the [Home] tab displays the home page of either the HP Jetdirect print server or the attached device, depending on the capabilities of the attached device. For more information, see [HP Jetdirect \[Home\] Tab](#).
- [Device] tab: The [Device] tab is available only if the attached device contains its own embedded web server that is supported and accessible by the HP Jetdirect print server. Device page features are device dependent (see the Device page help system or related documentation).
- [Networking] tab: The [Networking] tab provides access to network configuration parameters. See [\[Networking\] Tab](#) for a description of the available networking menu pages.

These pages may also provide additional links. For more information, see [Other Links](#).

Operating Notes

- If you enter or change a configuration parameter value, click Apply to enable your change, or click Cancel to erase your change.
- Changes to the IP address will close the connection to the embedded web server. To re-establish a connection, use the new IP address.

CAUTION Changes to the IP address on the HP Jetdirect print server will result in printing failures for clients that have been configured to print through this print server.

- Novell NetWare networks: The embedded web server supports configuration parameters for Queue Server Mode under NDS (Novell Directory Services) only. NetWare Bindery and RPrinter Mode configuration are not supported. To access NetWare configuration parameters, click the IPX/SPX button on the Networking page.

Note For a Novell NetWare network, you cannot create the NDS print server, printer, and queue objects using the embedded web server. To create these objects, use other available tools or utilities.

Next topic: [The Home tab](#)

HP Jetdirect [Home] Tab



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The [Home] tab will display the HP Jetdirect Home page if the attached device's embedded web server cannot be accessed. The HP Jetdirect Home page displays a generic printer graphic to represent the attached device. The HP Jetdirect print server's product model, firmware version, and network addresses are displayed along with any device information that can be retrieved. [HP Jetdirect Home Page Items](#) provides a summary of the items displayed on the HP Jetdirect Home page.

Table B.1 HP Jetdirect Home Page Items

Item	Description
Home tab	Displays either the HP Jetdirect home page, or the home page of the attached network device if it can be accessed.
Device tab	Appears only if the attached network device (such as the printer or multifunction all-in-one device) contains a supported embedded web server. It provides access to the device's web pages and features.
Networking tab	Provides access to network configuration, security, and diagnostic parameters. For more information, see [Networking] Tab .
Device Info	Identifies the device (such as the model name of the printer or multifunction all-in-one device) connected to the network via the HP Jetdirect print server. Other information that can be retrieved from the device are also displayed (such as Page Count, or Control Panel status).
Select Language	Appears if the HP Jetdirect web pages support multiple languages. Supported languages may also be selected through language preference settings in your browser (see your browser's Help).

Web Scan	Runs the Web Scan server on the HP Jetdirect print server if it supports the attached network device and is enabled. Web Scan allows you to perform a simple scan from the device using your web browser. A scan-to-email configuration option is provided.
Host Name	Specifies the IP host name assigned to the device and stored on the HP Jetdirect print server. See TCP/IP on the [Networking] Tab .
System Up Time	The length of time since either the HP Jetdirect print server or the network device was last power cycled.
System Contact	A text string (stored on the HP Jetdirect print server) for the name of a person to contact for this device. See TCP/IP on the [Networking] Tab .
System Location	A text string (stored on the HP Jetdirect print server) that identifies the physical location of this device. See the Networking TCP/IP configuration pages.
HP Jetdirect	The product number of the HP Jetdirect print server (for example HP J4169A).
Firmware Version	The version of the operating instructions installed on the HP Jetdirect print server.
IP Address	The Internet Protocol address configured on the HP Jetdirect print server. For general information on IP addresses, see TCP/IP Overview .
Hardware Address	The LAN hardware (or MAC, Media Access Control) address of the HP Jetdirect print server. This unique address is assigned by Hewlett-Packard.

Admin Password	<p>Specifies whether or not an administrative password has been set. This password may also be configured through a Telnet session with the HP Jetdirect print server.</p> <p>Use the "Admin Password" page to set or clear administrative passwords. If an administrative password has been set, you will be prompted for a User Name and Password to access network parameters. For more information, click Help, or see the Admin Password section in this guide.</p>
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Next topic: [The Networking tab](#)

[Networking] Tab



The Networking page provides access to HP Jetdirect network configuration parameters and status.

Network Settings

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The Network Settings pages allow you to set or change configuration parameters for TCP/IP, IPX/SPX, AppleTalk, DLC/LLC, and SNMP protocols. To assign a parameter setting, enter the desired value and click Apply.

TCP/IP

The TCP/IP page provides configuration parameters summarized in [TCP/IP Settings](#).



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Table B.2 TCP/IP Settings

Item	Description
IP Configuration Method	Selects the method that the HP Jetdirect print server will receive its IP configuration parameters: BOOTP (default), DHCP, or Manual. For BOOTP or DHCP, the IP parameters will be automatically configured by a BOOTP or DHCP server each time the print server is powered on. If you select "Manual", then basic IP parameters can be manually entered using this web page, or using other available tools (see TCP/IP Configuration .)
Host Name	Specifies a readable IP name (the SNMP SysName object) for the network device. The name must start with a letter and can end in a letter or number, up to 32 ASCII characters.

IP Address	<p>Use this field to manually assign the Internet Protocol address on the HP Jetdirect print server. The IP address is a four byte (32-bit) address in the form "n.n.n.n", where 'n' is a number from 0 to 255.</p> <p>An IP address uniquely identifies a node on a TCP/IP network.</p> <p>Duplicate IP addresses on a TCP/IP network are not allowed. For more information on IP addresses, see TCP/IP Overview.</p>
Subnet Mask	<p>If subnetting is used, use this field to manually assign a subnet mask. A subnet mask is a 32-bit number that, when applied to an IP address, determines which bits specify the network and subnet, and which bits uniquely specify the node.</p> <p>For more information on subnet masks, see TCP/IP Overview.</p>
Default Gateway	<p>Identifies the IP address of a router or computer that is used to connect to other networks or subnetworks.</p>
Domain Name	<p>Specifies the name of the Domain Name System (DNS) domain that the HP Jetdirect print server resides in (for example, support.hp.com). It does not include the host name--it is not the Fully Qualified Domain Name (such as printer1.support.hp.com).</p>
Primary WINS Server	<p>Specifies the IP address of the primary Windows Internet Naming Service (WINS) server. The WINS server provides IP address and name resolution services for network computers and devices.</p>
Secondary WINS Server	<p>Specifies the IP Address to be used for WINS if the primary WINS Server is unavailable.</p>
Syslog Server	<p>Specifies the IP address of a host computer that is configured to receive syslog messages from the HP Jetdirect print server. If a Syslog Server is not specified, syslog messages are disabled.</p> <p>For more information, see TCP/IP Overview.</p>

<p>Syslog Maximum Messages</p>	<p>Specifies the maximum number of syslog messages that can be sent by the HP Jetdirect print server on a per-minute basis. This setting allows administrators to control the log file size. The default is 10 per minute. If set to zero, no maximum number is defined.</p>
<p>Syslog Priority</p>	<p>Controls the filtering of syslog messages that are sent to the syslog server. The filter range is 0 to 8, with 0 being the most specific and 8 being the most general. Only messages that are lower than the filter level specified (that is, higher in priority) are reported. The default value is 8 which reports all syslog messages. A value of zero effectively disables syslog reporting.</p>
<p>Idle Timeout</p>	<p>Specifies the number of seconds that an idle connection is allowed to remain open. Up to 3600 seconds can be set. 270 is the default value. If set to 0, the timeout is disabled and TCP/IP connections will remain open until closed by the device at the other end of the network (for example, a workstation).</p>
<p>TTL/SLP</p>	<p>Specifies the IP multicast Time To Live (TTL) discovery setting for Service Location Protocol (SLP) packets. The default value is 4 hops (the number of routers from the local network). The range is 1-15. If set to -1, multicast capability is disabled.</p>
<p>System Contact</p>	<p>Identifies a person who is assigned to administer or service this device. This field may include a phone number or similar information. When configured, this parameter will be displayed on the HP Jetdirect Home page.</p>
<p>System Location</p>	<p>Specifies the physical location of the device or related information. Only printable ASCII characters are allowed, up to 64 characters. When configured, this parameter will be displayed on the HP Jetdirect Home page.</p>

Banner Page	Specifies whether to enable or disable printing of an LPD banner page for print jobs. For HP Jetdirect external print servers that provide multiple ports, you can configure each port. For internal print servers, only a single port is available (Port 1).
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IPX/SPX

The IPX/SPX tab allows you to configure IPX/SPX (Internet Packet Exchange/Sequenced Packet Exchange) parameters on the HP Jetdirect print server for operation on a Novell NetWare or IPX/SPX-compatible network (such as a Microsoft network). See [IPX/SPX Settings](#) for a description of items on this page.

CAUTION If you are using direct-mode printing over IPX/SPX on a Microsoft network, do not disable IPX/SPX.

Note For a Novell NetWare network:

- The embedded web server supports Queue Server Mode in a Novell Directory Services (NDS) environment only.
- You cannot create the NDS print server, printer, and queue objects using the embedded web server. To create these objects, use other available tools or utilities.

Table B.3 IPX/SPX Settings

Item	Description
IPX/SPX Enable	Enables or disables the IPX/SPX protocols on the HP Jetdirect print server. If the checkbox is empty, IPX/SPX is disabled.
IPX/SPX Frame Type	<p>Specify the Novell NetWare frame type to be used by the HP Jetdirect print server on your network. After a frame type has been configured, all others will be counted and discarded.</p> <ul style="list-style-type: none"> • AUTO (default) senses all frame types and configures the first one detected. • EN_8023 limits the frame type to IPX over IEEE 802.3 frames. • EN_II limits the frame type to IPX over Ethernet frames. • EN_8022 limits the frame type to IPX over IEEE 802.2 with IEEE 802.3 frames. • EN_SNAP limits the frame type to IPX over SNAP with IEEE 802.3 frames. • TR_8022 limits the frame type to IPX over IEEE 802.2 LLC with IEEE 802.5 frames. • TR_SNAP limits the frame type to IPX over SNAP with IEEE 802.5 frames.

SAP Interval	Specifies the time interval (in seconds) that the HP Jetdirect print server waits to send Service Advertising Protocol (SAP) messages, which are broadcast to advertise its service capabilities on a Novell NetWare network. To disable SAP messages, use the value "0".
Print Server Name	Specify a NetWare printer name for the HP Jetdirect print server (alphanumeric characters only). The default name is NPIxxxxxx, where xxxxxx are the last six digits of the HP Jetdirect print server's LAN hardware (MAC) address.
NDS Tree Name	Specify the name of the NDS tree for this device. The NDS (Novell Directory Services) tree name refers to the name of the organizational tree used by your network. To disable NDS support, leave this field blank.
NDS Context	To disable NDS support, leave this field blank. The print server's NDS context refers to the NDS container or organizational unit that contains the print server object. Print queue and device objects can be located anywhere within the NDS tree, but the HP Jetdirect print server must be configured with the fully-qualified print server object name. For example, if the print server object is found in the container "marketing.mytown.lj" and the print server object name is "lj_pserver", the fully qualified print server context name (CN) is: "CN=lj_pserver.OU=marketing.OU=mytown.O=lj" (where OU is an Organization Unit container and O is an Organization container within the NDS tree). Note: NDS objects cannot be created by the embedded web server.
Job Poll Interval	Specifies the time interval (seconds) that the HP Jetdirect print server will wait to check for print jobs in a print queue.
PJL Configuration	For Printer Job Language (PJL) parameters, enable (check) or disable (clear) the parameters provided: <ul style="list-style-type: none"> • Banner Pages (for printing separator pages between print jobs) • End-Of-Job Notification (if received from the printer, an end-of-job message will be forwarded to a client application) • Toner Low Notification (if received from the printer, the HP Jetdirect print server will forward a "toner low" message to a client application)

AppleTalk

Using the checkbox provided, you can enable (check) or disable (clear) the AppleTalk protocol on the HP Jetdirect print server. If AppleTalk is enabled, AppleTalk parameter settings stored on the print server are displayed.

Note The AppleTalk parameters displayed include the AppleTalk printer types that are advertised on the network.

The HP Jetdirect print server supports AppleTalkPhase 2 only.

DLC/LLC

Using the checkbox provided, you can enable (check) or disable (clear) the DLC/LLC (Data Link Control/Logical Link Control) protocols on the HP Jetdirect print server. If the checkbox is clear, DLC/LLC protocols are disabled.

SNMP

You can specify or change the SNMP (Simple Network Management Protocol) parameters provided. See [SNMP Settings](#).

Table B.4 SNMP Settings

Item	Description
Set Community Name	An SNMP Set Community Name is a password to be able to configure (or "write" to) SNMP control functions on the HP Jetdirect print server. An incoming SNMP SetRequest must contain a community name that matches the one stored on the print server before the print server will respond. The community name must be ASCII characters and can be up to 255 characters long. The default community name is 'public'.
Get Community Name	An SNMP Get Community Name is a password that allows "read" access to SNMP information on the HP Jetdirect print server. The community name must be ASCII characters and can be up to 255 characters long. The default community name is 'public'.

Select Language

This link appears if the HP Jetdirect web pages support multiple languages. Supported languages may also be selected through language preference settings in your browser (see your browser's Help).

Support Info

Use this page to configure links for Support assistance. You can designate a Support person and phone number of an administrator for this device, as well as URL addresses for web-based product and technical support.

USB Settings

If the HP Jetdirect print server provides a USB connection to the network device (such as a USB printer), a link to USB configuration parameters will be displayed.

Other Settings

Select "Other Settings" to enable or disable additional parameters for management and printing (see [TCP/IP Advanced Settings](#)).

Table B.5 TCP/IP Advanced Settings

Item	Description
SLP Config	Enable or disable SLP (Service Location Protocol), used by selected client application software to automatically discover and identify the HP Jetdirect print server.
Telnet Config	Enable or disable access to HP Jetdirect configuration parameters using Telnet. For more information, see TCP/IP Configuration .
9100 Config	Enable or disable port 9100 services. Port 9100 is an HP-proprietary raw TCP/IP port on the HP Jetdirect print server and is the default port for printing. It is accessed by HP software (for example, the HP Standard Port).
FTP Printing	Enable or disable File Transfer Protocol services available on the HP Jetdirect print server for printing. For more information, see FTP Printing .
LPD Printing	Enable or disable the Line Printer Daemon services on the HP Jetdirect print server. LPD on the HP Jetdirect print server provides line printer spooling services for TCP/IP systems. For more information, see Configuring for LPD Printing .

IPP Printing	Enable or disable the Internet Printing Protocol on the HP Jetdirect print server. If the printer is properly connected and accessible, IPP allows printing to this device over the Internet (or intranet). A properly configured IPP client system is also required (see HP Software Solutions Summary).
Email (SMTP) Server	Specify the IP address of the preferred outgoing e-mail Simple Mail Transport Protocol (SMTP) server, for use with supported Scan devices.

Admin Password

For controlled access to configuration and status information through the embedded web server and Telnet, use this page to set an Administrative password. If a password is set, you will be prompted for a user name and this password to access the HP Jetdirect web pages.

Access Control

This page allows you to create a host access list on the HP Jetdirect print server. A host access list specifies individual host systems, or networks of host systems, that will be allowed to access the print server and the attached network device. Up to 10 entries can be included on the host access list. If the list is empty (no hosts are listed), any supported system can access the print server.

CAUTION Use caution when using this feature. You may lose your ability to communicate with the HP Jetdirect print server if your system is improperly specified in the list.

For use of the host access list as a security feature, see Security Features.

Host systems are specified by their IP addresses or network number. If the network contains subnets, a "mask" may be used to identify whether the IP address designates an individual host system or a group of host systems.

Examples.

See the table of sample entries below:

IP Address	Mask	Description
192.0.0.0	255.0.0.0	Allow all hosts with network number 192.
192.1.0.0	255.1.0.0	Allow all hosts on network 192, subnet 1.
192.168.1.2		Allow the host with IP address 192.168.1.2. The Mask 255.255.255.255 is assumed and is not required.

To clear all entries in the host access list, enable the "Clear Allow Table" checkbox and click Apply.

To add an entry into the host access list, use the "IP address" and "Mask" fields to specify a host, then click Apply.

Network Statistics

This page is used to display counter values and other status information currently stored on the HP Jetdirect print server. This information is often useful to diagnose performance and operational problems associated with the network or network device.

Protocol Info

This page provides a list of various network configuration settings on the HP Jetdirect print server for each protocol. Use these lists to validate your desired settings.

Test Page

This page provides a view of the HP Jetdirect Configuration Page that contains a summary of HP Jetdirect status and configuration information. The contents of this page are described in [HP Jetdirect Configuration Page](#).

Refresh Rate

The refresh rate is the time period (in seconds) that the diagnostic pages will be automatically updated. The value '0' disables the refresh rate.

Next topic: [Other links](#)

Other Links



Support

The information displayed on the Support page depends on the values configured in the [Support Info](#) page. Support information may include the name and telephone number of a Support person, or web links to Product and Technical Support pages. The default web links include HP Customer Care Online and HP Product information web pages (Internet access is required).

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HP Web JetAdmin

HP Web JetAdmin is HP's premier network peripheral management software tool.

If the HP Jetdirect print server (and associated network device) has been discovered through HP Web JetAdmin, a link to HP Web JetAdmin will be provided. You can then use HP Web JetAdmin to provide enhanced management capabilities for this and other HP Jetdirect-connected devices on your network.



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HP Home

HP Home provides a link to Hewlett-Packard's home page on the HP web site (Internet access is required). This link may also be accessed by clicking on the HP logo.

Help

The HP Jetdirect Help page provides a quick summary of the HP Jetdirect embedded web server features.

Back to: start of [Embedded Web server](#)

TCP/IP Configuration



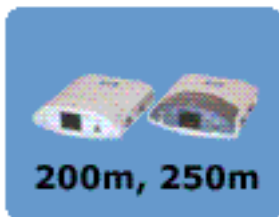
This section covers the following topics:

- [Introduction](#)
- [TCP/IP Overview](#)
- [Using BOOTP/TFTP](#)
- [Using DHCP](#)
- [Using RARP](#)
- [Using the arp and ping commands](#)
- [Using Telnet](#)
- [Using the embedded Web server](#)
- [Moving to another network](#)

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Introduction

To operate properly on a TCP/IP network, the HP Jetdirect print server must be configured with valid TCP/IP network configuration parameters, such as an IP address. Depending on your printer and system, this can be done in the following ways:

Note When shipped from the factory, the HP Jetdirect print server has no IP address. If the HP Jetdirect print server is not configured with a valid IP address within two minutes after power up, a factory default value of 192.0.0.192 will be automatically assigned. This address must be reconfigured with a valid address for use on your TCP/IP network. For more information on TCP/IP networks, see TCP/IP Overview.

- Using your printer installation software or the HP Jetdirect print server installation software on supported systems. For more information see "[HP Software Solutions Summary](#)".
- By downloading the data from a network-based server using BOOTP (Bootstrap Protocol) and TFTP (Trivial File Transfer Protocol) each time the printer is turned on. For more information, see "[Using BOOTP/TFTP](#)".

Note The BOOTP daemon, bootpd, must be running on a BOOTP server that is accessible by the printer.

- By using Dynamic Host Configuration Protocol (DHCP). This protocol is supported in HP-UX, Solaris, Red Hat Linux, SuSE Linux, Windows NT/2000, NetWare and Mac OS systems. (Refer to your network operating system manuals to verify that your operating system supports DHCP.) For more information, see "[Using DHCP](#)".

Note Linux and UNIX systems: For more information, see the bootpd man page.

On HP-UX systems, a sample DHCP configuration file (dhcptab) may be located in the /etc directory.

Since HP-UX presently does not provide Dynamic Domain Name Services (DDNS) for its DHCP implementations, HP recommends that you set all print server lease durations to infinite. This ensures that print server IP addresses remain static until such time as Dynamic Domain Name Services are provided.

- By a network-based server using RARP (Reverse Address Resolution Protocol) answering the print server's RARP request and supplying the print server with the IP address. The RARP method only allows you to configure the IP address. For more information, see "[Using RARP](#)".
- By using the `arp` and `ping` commands from your system. For more information, see "[Using the arp and ping Commands](#)".
- By setting configuration parameters using Telnet. In order to set configuration parameters, set up a Telnet connection from your system to the HP Jetdirect print server using the default IP address. The default IP address takes effect two minutes after the printer is turned on (if none of the other configuration methods have been used). (Older products may take longer for the IP address to take effect.) The default IP address is 192.0.0.192. If Telnet is used, the print server saves the configuration over power cycles. For more information, see "[Using Telnet](#)".
- By browsing to the embedded Web server on the HP Jetdirect print server and setting the configuration parameters. For more information, see "[Using the Embedded Web Server](#)".

Next topic: [TCP/IP overview](#)

TCP/IP Overview



This section covers the following topics:

- [Introduction](#)
- [IP address](#)
- [Configuring IP parameters](#)
- [Subnets](#)
- [Gateways](#)
- [Syslog server](#)

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Introduction

This appendix is intended to provide information to help you gain a basic understanding of TCP/IP.

Similar to a common language that people use to communicate with each other, TCP/IP (Transmission Control Protocol/Internet Protocol) is a suite of protocols designed to define the way computers and other devices communicate with each other over a network.

TCP/IP is rapidly becoming the most used set of protocols. The main reason this is happening is the fact that the internet is based on TCP/IP. If you have a network that you wish to connect to the internet, you must be using TCP/IP to communicate.

Internet Protocol (IP)

When information is sent across the network, the data is broken down into small packets. Each packet is sent independently of one another. Each packet is encoded with IP information, such as the IP address of the sender and receiver. IP packets can be routed over routers and gateways, devices that connect a network with other networks.

IP communications is connectionless. When IP packets are sent, there is no guarantee that they arrive at their destination in the proper sequence. That task can be performed by higher level protocols and applications thereby allowing IP communications to be efficient.



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Each node or device that will communicate directly onto the network requires an IP address, including HP Jetdirect-connected devices.

Transmission Control Protocol (TCP)

TCP handles breaking the data into packets and recombining the packets on the receiving end by providing a connection-oriented, reliable, and guaranteed delivery service to another node on the network. When data packets are received at their destination, TCP calculates a checksum for each packet to verify the data is not corrupt. If the data in the packet has been corrupted during transmission, TCP discards the packet and requests that the packet be resent.

User Datagram Protocol (UDP)

UDP provides similar services to TCP. However, UDP does not acknowledge data receipt and supports request/reply transactions with no added reliability or guarantee of delivery. UDP is used when acknowledgment and reliability are not required, such as during a "discovery broadcast."

Next topic: [IP address](#)

Back to: start of [TCP/IP configuration](#)

IP Address



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Every host (workstation or node) on an IP network requires a unique IP address for each network interface. This address is a software address that is used to identify both the network and specific hosts located on that network. Each IP address can be divided into two separate parts: the network portion and the host portion. It is possible for a host to query a server for a dynamic IP address each time the device boots-up (see the section "[Dynamic Host Configuration Protocol \(DHCP\)](#).")

Note When assigning IP addresses, always consult the IP address administrator. Setting the wrong address can disable other equipment operating on the network or interfere with communications.

IP Address: (Network Portion)



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Network addresses are managed by an organization in Norfolk, Virginia recognized as InterNIC. InterNIC has been contracted by the National Science Foundation to manage the Internet addresses and domains. Network addresses are distributed to organizations that are in turn responsible for making sure all attached devices or hosts on the network are properly numbered. For more information on the network portion of an IP address, see "[IP Address Structure and Class](#)" and "[Subnets](#)" later in this appendix.

IP Address: (Host Portion)

Host addresses numerically identify specific network interfaces on an IP network. Usually a host has only one network interface; thus, only one IP address. Because no two devices can share the same number at the same time, administrators typically maintain address tables to assure correct assignment of addresses in the host network.

IP Address Structure and Class

An IP address is comprised of 32 bits of information and divided into 4 sections containing 1 byte each section or 4 bytes total: xxx . xxx . xxx . xxx

For efficiency in routing, networks were broken down into three classes, so routing can begin simply by identifying the leading byte of information in the IP address. The three IP addresses that InterNIC assigns are class A, B, and C. The network class determines what each of the four IP address sections identify as shown in [Table A.1](#):

Table A.1 IP Address Class Format

Class	First Address Byte xxx.	Second Address Byte xxx.	Third Address Byte xxx.	Fourth Address Byte xxx
A	Network.	Host.	Host.	Host
B	Network.	Network.	Host.	Host
C	Network.	Network.	Network.	Host

Explained in more detail in the table "[Network Class Characteristics](#)," you will see how each network class differs further by the leading bit identifier, the address range, the number of each type available, and the maximum number of hosts each class allows.

Table A.2 Network Class Characteristics

Class	Leading Bit Identifier	Address Range	Maximum number of networks in the class	Maximum hosts in the network
A	0	0.0.0.0 to 127.255.255.255	126	Over 16 Million
B	10	128.0.0.0 to 191.255.255.255	16,382	65,534
C	110	192.0.0.0 to 223.255.255.255	Over 2 Million	254

Next topic: [Configuring IP parameters](#)

Configuring IP Parameters



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TCP/IP configuration parameters (such as IP address, subnet mask, default gateway) can be configured on the HP Jetdirect print server in a variety of ways. These values can be configured manually (for example, through Telnet, the embedded web server, the arp and ping commands, and HP management software), or they can be automatically downloaded using DHCP or BOOTP each time the print server is turned on. For configuration methods, see [TCP/IP Configuration](#).

Note If the HP Jetdirect print server is not configured with an IP address within two minutes after power on, a default value of 192.0.0.192 will be assigned. Because this address is not valid, it should be reassigned with a valid IP address.

Dynamic Host Configuration Protocol (DHCP)

DHCP allows a group of devices to use a set of IP addresses that are maintained by a DHCP server. The device or host sends a request to the server, and if an IP address is available, the server assigns it to that device.

BOOTP

BOOTP is a bootstrap protocol used to download configuration parameters and host information from a network server. BOOTP uses UDP for its transport. In order for devices to boot and load configuration information into RAM, they must communicate through the bootstrap protocol BOOTP as a client with their server.

To configure the device, the client broadcasts a boot request packet containing at least the hardware address of the device (HP Jetdirect print server hardware address). The server answers with a boot reply packet containing the information the device needs to configure.

Next topic: [Subnets](#)

Subnets



When an IP network address for a particular network class is assigned to an organization, no provision is made for more than one network being present at that location. Local network administrators use subnets to partition a network into several different subnetworks. Splitting a network into subnets can result in better performance and improved use of limited network address space.

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Subnet Mask

The subnet mask is a mechanism used to divide a single IP network into several different subnetworks. For a given network class, a portion of an IP address that would normally be used to identify a node is used, instead, to identify a subnetwork. A subnet mask is applied to each IP address to specify the portion used for subnetworks, and the portion used to identify the node. For example, see [Example: Subnet Mask 255.255.0.0 Applied to Class A Network](#).



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Table A.3 Example: Subnet Mask 255.255.0.0 Applied to Class A Network

Class A Network Address	15	xxx	xxx	xxx
Subnet Mask	255	255	0	0
IP Address fields with Subnet Mask applied	Network	Subnet	Host	Host
Example of a node's IP Address on Subnet 1	15	1	25	7
Example of a node's IP Address on Subnet 254	15	254	64	2

As illustrated in [Example: Subnet Mask 255.255.0.0 Applied to Class A Network](#), the Class A IP network address "15" has been assigned to company ABC. To allow additional networks at company ABC's site, the subnet mask of 255.255.0.0 is used. This subnet mask specifies that the second byte of the IP address will be used to identify up to 254 subnets. Using this designation, each device is uniquely identified on its own subnet, but company ABC can incorporate up to 254 subnetworks without violating their assigned address space.

Next topic: [Gateways](#)

Gateways



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Gateways (routers) are used to connect networks together. Gateways are devices that act as translators between systems that do not use the same communication protocols, data formatting, structures, languages, or architectures. Gateways repackage the data packets and change the syntax to match that of the destination system. When networks are divided into subnets, gateways are required to connect one subnet to another.

Default Gateway

The Default Gateway is the gateway or router that, if not specified, will be used to move packets between networks. It is specified by an IP address.

If multiple gateways or routers exist, then the default gateway is typically the address of the first, or nearest, gateway or router. If no gateways or routers exist, then the default gateway will typically assume the IP address of the network node (such as the workstation or HP Jetdirect print server).

Next topic: [Syslog server](#)

Syslog Server



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A syslog server is a system on the network (typically a UNIX system) that can receive and log syslog messages from other devices on the network. Syslog messages allow administrators to monitor status or troubleshoot network devices.

A syslog server requires software that provides syslog capabilities running on the server. UNIX systems provide a daemon, *syslogd*, that monitors User Datagram Protocol (UDP) port 514 for incoming messages. The messages are processed depending their priority and on how *syslogd* is set up to operate.

You can configure the HP Jetdirect print server with the syslog server's IP address. When a syslog server is configured, both the HP Jetdirect print server and attached device (such as a printer or mopier) can send syslog messages using UDP.

The syslog server may not receive all syslog events from the HP Jetdirect print server:

- UDP does not guarantee delivery of messages
- The HP Jetdirect print server attempts to eliminate duplicate messages (to minimize unnecessary network traffic)
- The volume of messages sent by the HP Jetdirect print server is configurable

Methods to configure HP Jetdirect syslog parameters include BOOTP, DHCP, Telnet, the embedded web server, and management software. For selected printers, an EIO menu accessed through the printer control panel provides limited syslog configuration. The syslog configuration command or parameter entries may vary depending on the method used. For more information, see the applicable sections in this guide.

Selected syslog parameters on the HP Jetdirect print server are listed in [HP Jetdirect Syslog Parameters](#).

Table A.4 HP Jetdirect Syslog Parameters

Item	Description
Syslog Server IP address	IP address of a syslog server to send syslog messages to. If zero (0.0.0.0) or not specified, syslog messages are disabled.
Syslog Maximum Messages	The number of syslog messages that can be sent by the HP Jetdirect print server on a per-minute basis, from 0 to 1000. This parameter helps to control the syslog file size. The default is 10 messages per minute. If 0, the number of syslog messages is not restricted.
Syslog Priority	A method for filtering syslog messages that are sent to the syslog server. The range is 0 through 8, with 0 the most specific and 8 the most general. Only messages that are lower than the specified filter level (or higher in priority) are reported. The default is 8, messages of all priorities are sent. If 0, all syslog messages are disabled.
Syslog Facility	A code used to identify the source facility of a message (for example, to identify the source of selected messages during troubleshooting). By default, the HP Jetdirect print server uses LPR as the source facility code, but local user values of local0 through local7 can be used to isolate individual or groups of print servers.

Typical logfile entries of syslog messages are illustrated below:

```
Oct 22 08:10:33 jd08 printer: error cleared
Oct 22 15:06:07 jd04 printer: powered up
Oct 22 15:07:56 jd04 printer: offline or intervention
needed
Oct 22 15:08:58 jd04 printer: error cleared
Oct 24 17:52:27 jd37 printer: powered up
Oct 24 18:28:13 jd37 printer: printer is disconnected
Oct 24 18:37:46 jd07 printer: error cleared
Oct 24 18:38:42 jd37 printer: powered up
Oct 25 07:50:16 jd04 printer: toner/ink low
```

Next major topic: [Using BOOTP/TFTP](#)

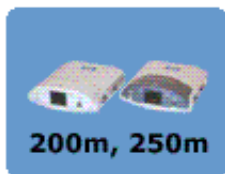
Back to: start of [TCP/IP overview](#)

Using BOOTP/TFTP



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BOOTP (Bootstrap Protocol) and TFTP (Trivial File Transfer Protocol) provide a convenient way to automatically configure the HP Jetdirect print server for TCP/IP network operation. When powered on, the Jetdirect print server sends a BOOTP request message onto the network. A properly configured BOOTP server on the network will respond with a message that contains basic network configuration data for the Jetdirect print server. The BOOTP server's response may also identify a file that contains extended configuration data for the print server. The Jetdirect print server downloads this file using TFTP. This TFTP configuration file may be located on the BOOTP server, or a separate TFTP server.

BOOTP/TFTP servers are typically UNIX or Linux systems. Windows NT/2000 and NetWare servers can respond to BOOTP requests. Windows NT/2000 servers are configured through Microsoft DHCP services (see [Using DHCP](#)).

However, Windows NT/2000 systems may require third-party software for TFTP support. For setup of NetWare BOOTP servers, refer to your NetWare documentation.

Note If the Jetdirect print server and BOOTP/DHCP server are located on different subnets, IP configuration may fail unless the routing device supports "BOOTP Relay" (allows the transfer of BOOTP requests between subnets).

Why Use BOOTP/TFTP?

Using BOOTP/TFTP to download configuration data has the following benefits:

- Enhanced configuration control of the HP Jetdirect print server. Configuration by other methods, such as a printer control panel, are limited to select parameters.
- Ease of configuration management. Network configuration parameters for the entire network can be in one location.
- Ease of HP Jetdirect print server configuration. Complete network configuration can be automatically downloaded each time the print server is powered on.

Note BOOTP operation is similar to DHCP, but the resulting IP parameters will be the same over power cycles. In DHCP, IP configuration parameters are leased and may change over time.

When in its factory-default state and powered on, the HP Jetdirect print server will attempt to automatically configure itself using several dynamic methods, one of which is BOOTP.

BOOTP/TFTP on UNIX

This section describes how to configure the print server using BOOTP (Bootstrap Protocol) and TFTP (Trivial File Transfer Protocol) services on UNIX servers. BOOTP and TFTP are used to download network configuration data from a server to the HP Jetdirect print server over the network.

Systems That Use Network Information Service (NIS)

If your system uses NIS, you may need to rebuild the NIS map with the BOOTP service before performing the BOOTP configuration steps. Refer to your system documentation.

Configuring the BOOTP Server

For the HP Jetdirect print server to obtain its configuration data over the network, the BOOTP/TFTP servers must be set up with the appropriate configuration files. BOOTP is used by the print server to obtain entries in the `/etc/bootptab` file on a BOOTP server, while TFTP is used to obtain additional configuration information from a configuration file on a TFTP server.

When the HP Jetdirect print server is powered on, it broadcasts a BOOTP request that contains its MAC (hardware) address. A BOOTP server daemon searches the `/etc/bootptab` file for a matching MAC address, and if successful, sends the corresponding configuration data to the Jetdirect print server as a BOOTP reply. The configuration data in the `/etc/bootptab` file must be properly entered. For a description of entries, see "[Bootptab File Entries](#)".

The BOOTP reply may contain the name of a configuration file containing enhanced configuration parameters. If the HP Jetdirect print server finds such a file, it will use TFTP to download the file and configure itself with these parameters. For a description of entries, see "[TFTP Configuration File Entries](#)". Configuration parameters retrieved via TFTP are optional.

Note HP recommends that the BOOTP server be located on the same subnet as the printers it serves. BOOTP broadcast packets may not be forwarded by routers unless the routers are properly configured.

CAUTION Community names (passwords) for your printer are not secure. If you specify a community name for your printer, select a name that is different from passwords used for other systems on your network.

Bootptab File Entries

An example of a `/etc/bootptab` file entry for an HP Jetdirect print server is provided below:

picasso:\
:hn:\
:ht=ether:\
:vm=rfc1048:\
:ha=0001E6123456:\
:ip=192.168.40.39:\
:sm=255.255.255.0:\
:gw=192.168.40.1:\
:lg=192.168.40.3:\
:T144="hpn/picasso.cfg":

Note that the configuration data contains "tags" to identify the various HP Jetdirect parameters and their settings. Entries and tags supported by the HP Jetdirect print server (firmware version x.21.01 or greater) are listed in [Tags Supported in a BOOTP/DHCP Boot file](#).

Table 3.1 Tags Supported in a BOOTP/DHCP Boot file

Item	RFC 2132 Option	Description
nodename	--	The name of the peripheral. This name identifies an entry point to a list of parameters for a specific peripheral. <i>nodename</i> must be the first field in an entry. (In the example above, <i>nodename</i> is "picasso".)
ht	--	The hardware type tag. For the HP Jetdirect print server, set this to ether (for Ethernet) or token (for Token Ring). This tag must precede the ha tag.
vm	--	The BOOTP report format tag (required). Set this parameter to rfc1048 .
ha	--	The hardware address tag. The hardware (MAC) address is the link-level, or station address of the HP Jetdirect print server. It can be found on the HP Jetdirect configuration page as the HARDWARE ADDRESS . On HP Jetdirect external print servers, it is printed on a label attached to the print server.
ip	--	The IP address tag (required). This address will be the HP Jetdirect print server's IP address.

sm	1	The subnet mask tag. The subnet mask will be used by the HP Jetdirect print server to identify the portions of an IP address that specify the network/subnetwork number and the host address.
gw	3	The gateway IP address tag. This address identifies the IP address of the default gateway (router) that the HP Jetdirect print server will use for communications with other subnets.
ds	6	DNS (Domain Name System) server's IP address tag. Only a single name server can be specified.
lg	7	The syslog server's IP address tag. It specifies the server that the HP Jetdirect print server sends syslog messages to. For more information, see Appendix A .
hn	12	The host name tag. This tag does not take a value but causes the BOOTP daemon to download the host name to the HP Jetdirect print server. The host name will be printed on the Jetdirect configuration page, or returned on an SNMP sysName request by a network application.
dn	15	Domain name tag. Specifies the domain name for the HP Jetdirect print server (for example, support.hp.com). It does not include the host name-- it is not the Fully Qualified Domain Name (such as printer1.support.hp.com).
ef	18	Extensions file tag that specifies the relative path name of the TFTP configuration file. Note: This tag is similar to the vendor-specific tag T144, described below.
na	44	Tag for IP addresses of the NetBIOS-over-TCP/IP Name Server (NBNS). A primary and secondary server may be specified in order of preference.
lease-time	51	DHCP IP address lease duration time (seconds).

tr	58	DHCP T1 timeout, specifying the DHCP lease renewal time (seconds).
tv	59	DHCP T2 timeout, specifying the DHCP lease rebind time (seconds).
T69	69	The IP address (in hexadecimal) of the preferred outgoing e-mail SMTP (Simple Mail Transport Protocol) server, for use with supported Scan devices.
T144	--	An HP-proprietary tag that specifies the relative path name of the TFTP configuration file. Long path names may be truncated. The path name must be in double quotes (for example, " <i>pathname</i> "). For file format information, refer to " TFTP Configuration File Entries ". Note: Standard BOOTP option 18 (extensions file path) also allows a standard tag (ef) to specify the relative path name of the TFTP configuration file.
T145	--	Idle Timeout option. An HP-proprietary tag to set the idle timeout (seconds), which is the amount of time that a print data connection may remain idle before being closed. The range is 1 - 3600 seconds.
T146	--	Buffer Packing option. An HP-proprietary tag to set buffer packing for TCP/IP packets. 0 (default): Normal, data buffers are packed before sending to the printer. 1: Disable buffer packing. Data is sent to the printer when received.
T147	--	Write Mode option. An HP-proprietary tag that controls the TCP PSH flag setting for device-to-client data transfers. 0 (default): disables this option, flag not set. 1: all-push option. The push bit is set in all data packets. 2: eoi-push option. The push bit is set only for data packets that have an End-of-Information flag set.

T148	--	IP Gateway Disable option. An HP-proprietary tag to prevent configuration of a gateway IP address. 0 (default) allows an IP address. 1 prevents a Gateway IP address to be configured.
T149	--	Interlock Mode option. An HP-proprietary tag that specifies whether an acknowledgement (ACK) on all TCP packets is required before the printer is allowed to close a Port 9100 print connection. To accommodate multiport print servers, a Port Number and Option value are specified. Port Numbers can be 1 (default), 2, or 3. Option value 0 (default) disables interlock, 1 enables. Example: 2 1 specifies Port 2, interlock enabled
T150	--	TFTP server's IP address option. An HP-proprietary tag to specify the TFTP server's IP address where the TFTP configuration file is located.
T151	--	Network Configuration option. An HP-proprietary tag to specify either "BOOTP-ONLY" or "DHCP-ONLY" requests be sent.

A colon (:) indicates the end of a field, and a backslash (\) indicates that the entry is continued on the next line. Spaces are not allowed between the characters on a line. Names, such as host names, must begin with a letter and can contain only letters, numbers, periods (for domain names only), or hyphens. The underline character (_) is not allowed. Refer to your system documentation or online help for more information.

TFTP Configuration File Entries

To provide additional configuration parameters for your HP Jetdirect print server, such as SNMP (Simple Network Management Protocol) or non-default settings, an additional configuration file can be downloaded using TFTP. This TFTP configuration file's relative path name is specified in the BOOTP reply using the `/etc/bootptab` file's T144 vendor-specific tag (or the "ef" standard BOOTP tag) entry. An example of a TFTP configuration file is provided below (the symbol '#' denotes a remark and is not included in the file).

```

#
# Example of an HP Jetdirect TFTP
Configuration File
#
# Allow only Subnet 192.168.10 access to
peripheral.
# Up to 10 'allow' entries can be written
via TFTP.
# Up to 10 'allow' entries can be written
via Telnet
# or embedded web server.
# 'allow' may include single IP addresses.
#
allow: 192.168.10.0 255.255.255.0
#
#
# Disable Telnet
#
telnet: 0
#
# Enable the embedded web server
#
ews-config: 1
#
# Detect SNMP unauthorized usage
#
authentication-trap: on
#
# Send Traps to 192.168.10.1
#
trap-dest: 192.168.10.1
#
# Specify the Set Community Name
#
set-community-name: lhomer2
#
# End of file

```

[List of Supported TFTP Parameters](#) lists the supported TFTP parameters (HP Jetdirect firmware version x.21.01 or greater).

[TFTP Configuration File Parameters](#) describes the TFTP parameters.

Table 3.2 List of Supported TFTP Parameters

General	
<ul style="list-style-type: none"> • passwd: • sys-location: • sys-contact: 	
TCP/IP Main	
<ul style="list-style-type: none"> • host-name: • domain-name: • dns-svr: 	<ul style="list-style-type: none"> • pri-wins-svr: • sec-wins-svr: • smtp-svr:

TCP/IP Print Options

- | | |
|--|---|
| <ul style="list-style-type: none">• 9100-printing:• ftp-printing:• ipp-printing:• lpd-printing:• banner: | <ul style="list-style-type: none">• interlock:• buffer-packing:• write-mode:• mult-tcp-conn: |
|--|---|

TCP/IP Raw Print Ports

- [raw-port:](#)

TCP/IP Access Control

- [allow: netnum \[mask\]](#)

TCP/IP Other Settings

- | | |
|---|--|
| <ul style="list-style-type: none">• syslog-config:• syslog-svr:• syslog-max:• syslog-priority:• syslog-facility:• slp-config:• ttl-slp: | <ul style="list-style-type: none">• idle-timeout:• telnet-timeout:• ews-config:• tcp-mss:• tcp-msl:• telnet-config: |
|---|--|

SNMP

- | | |
|--|--|
| <ul style="list-style-type: none">• snmp-config:• get-community-name:• set-community-name: | <ul style="list-style-type: none">• auth-trap:• trap-dest:• trap-community-name: |
|--|--|

IPX/SPX

- | | |
|--|--|
| <ul style="list-style-type: none">• ipx-config:• ipx-unit-name:• ipx-framesize:• ipx-sapinterval:• ipx-nds-tree: | <ul style="list-style-type: none">• ipx-nds-context:• ipx-job-poll:• ipx-banner:• ipx-eoj:• ipx-toner-low: |
|--|--|

AppleTalk

- [appletalk:](#)

DLC/LLC

- [dlc/llc:](#)

Other Settings

<ul style="list-style-type: none"> • scan-config: • scan-idle-timeout: • scan-email-config: 	<ul style="list-style-type: none"> • MFP-config: • usb-mode: • usb-statpg-lang:
Support	
<ul style="list-style-type: none"> • support-name: • support-number: 	<ul style="list-style-type: none"> • support-url: • tech-support-url:

Table 3.3 TFTP Configuration File Parameters

General	
passwd:	
	A password (up to 16 alphanumeric characters) that allows administrators to control changes of HP Jetdirect print server configuration parameters through Telnet or embedded web server.
sys-location:	
	Identifies the physical location of the printer (SNMP sysLocation object). Only printable ASCII characters are allowed. The maximum length is 64 characters. The default location is undefined. (Example: 1st floor, south wall)
sys-contact:	
	ASCII character string (up to 64 characters) that identifies the person who administers or services the printer (SNMP sysContact object). This may include how to contact this person. The default contact is undefined.
TCP/IP Main	
host-name:	
	Specifies the node name that will appear on the Jetdirect configuration page. Default is NPIxxxxxx, where xxxxxx is the last six digits of the LAN hardware address.
domain-name:	
	The domain name for the device (for example, support.hp.com). It does not include the host name--it is not the Fully Qualified Domain Name (such as printer1.support.hp.com).
dns-svr:	
	IP address of the DNS (Domain Name System) server.
pri-wins-svr:	
	The IP address of the primary Windows Internet Name Service (WINS) server.
sec-wins-svr:	
	The IP address of the secondary Windows Internet Name Service (WINS) server.

smtp-svr:	The IP address of the outgoing e-mail Simple Mail Transport Protocol (SMTP) server, for use with supported Scan devices.
TCP/IP Print Options	
9100-printing:	Enables or disables printing to TCP port 9100 on the print server. 0 disables, 1 (default) enables.
ftp-printing:	Enables or disables the ability to print via FTP: 0 disables, 1 (default) enables.
ipp-printing:	Enables or disables the ability to print via IPP: 0 disables, 1 (default) enables.
lpd-printing:	Enables or disables LPD (Line Printer Daemon) printing services on the Jetdirect print server. 0 disables, 1 (default) enables.
banner:	A port-specific parameter that specifies printing an LPD banner page. 0 disables banner pages. 1 (default) enables banner pages.
interlock:	Specifies whether an acknowledgement (ACK) on all TCP packets is required before the printer is allowed to close a Port 9100 print connection. To accommodate multiport print servers, a Port Number and Option value are specified. Port Numbers can be 1 (default), 2, or 3. Option value 0 (default) disables interlock, 1 enables. For example, "interlock 2 1" specifies Port 2, interlock enabled
buffer-packing:	Enables or disables buffer packing for TCP/IP packets. 0 (default) is normal, the data buffer is packed before sending to the printer. 1 disables buffer packing, data is sent to the printer as it is received.
write-mode:	Controls the setting of the TCP PSH flag for device-to-client data transfers. 0 (default): disables this option, flag is not set. 1: all-push option. The push bit is set in all data packets. 2: eoi-push option. The push bit is set only for data packets that have an End-of-Information flag set.
mult-tcp-conn:	Enables or disables multiple TCP connections. 0 (default) allows multiple connections. 1 disables multiple connections.
TCP/IP Raw Print Ports	

raw-port:	Specifies additional ports for printing to TCP port 9100. Valid ports are 3000 to 9000, which are application dependent.
TCP/IP Access Control	
allow: netnum [mask]	Makes an entry into the host access list stored on the HP Jetdirect print server. Each entry specifies a host or network of hosts that are allowed to connect to the printer. The format is "allow: netnum [mask]" where netnum is a network number or host IP address, and mask is an address mask of bits applied to the network number and host address to verify access. Up to 10 access list entries are allowed. If there are no entries, all hosts are permitted access. For example, allow: 192.0.0.0 255.0.0.0 allows hosts on network 192. allow: 192.168.1.2 allows a single host. In this case, the default mask 255.255.255.255 is assumed and is not required. allow: 0 This entry clears the host access list. For additional information, see Security Features .
TCP/IP Other Settings	
syslog-config:	Enables or disables syslog server operation on the print server: 0 disables, 1 (default) enables.
syslog-svr:	The syslog server's IP address. It specifies the server that the HP Jetdirect print server sends syslog messages to. For more information, see TCP/IP Overview .
syslog-max:	Specifies the maximum number of syslog messages that can be sent by the HP Jetdirect print server on a per-minute basis. This setting allows administrators to control the log file size. The default is 10 per minute. If it's set to zero, the number of syslog messages is not restricted.
syslog-priority:	Controls the filtering of syslog messages sent to the syslog server. The filter range is 0 to 8, with 0 being the most specific and 8 the most general. Only messages that are lower than the filter level specified (or higher in priority) are reported. The default is 8, messages of all priorities are sent. If 0, all syslog messages are disabled.
syslog-facility:	A code used to identify the source facility of a message (for example, to identify the source of selected messages during troubleshooting). By default, the HP Jetdirect print server uses LPR as the source facility code, but local user values of local0 through local7 can be used to isolate individual or groups of print servers.
slp-config:	Enables or disables the Service Location Protocol (SLP) operation on the print server: 0 disables, 1 (default) enables.

ttl-slp:

Specifies the IP multicast "Time To Live" (TTL) setting for Service Location Protocol (SLP) packets. The default value is 4 hops (the number of routers from the local network). The range is 1-15. When set to a -1, multicast capability is disabled.

idle-timeout:

The number of seconds that an idle print data connection is allowed to remain open. Since the card supports only a single TCP connection, the idle timeout balances the opportunity of a host to recover or complete a print job against the ability of other hosts to access the printer. The acceptable values range from 0 to 3600 (1 hour). If "0" is typed, the timeout mechanism is disabled. The default is 270 seconds.

telnet-timeout:

An integer (1..3600) that specifies the number of seconds that your Telnet or FTP session can be idle before it will be automatically disconnected. The default is 900 seconds. 0 disables the timeout. CAUTION: Small values, such as 1-5, may effectively disable the use of Telnet. A Telnet session may terminate before any changes can be made.

ews-config:

Enables or disables the print server's embedded web server to change configuration values: 0 disables, 1 (default) enables.

tcp-mss:

Specifies the maximum segment size (MSS) that the HP Jetdirect print server will advertise for use when communicating with local subnets (Ethernet MSS=1460 bytes or more) or remote subnets (MSS=536 bytes):
0 (default) All networks are assumed to be local (Ethernet MSS=1460 bytes or more).
1 Use MSS=1460 bytes (or more) for subnets, and MSS=536 bytes for remote networks.
2 All networks are assumed to be remote (MSS=536 bytes), except the local subnet.
MSS affects performance by helping to prevent IP Fragmentation that may result in data retransmission.

tcp-msl:

Specifies the maximum segment life (MSL) in seconds. The range is 5 - 120 seconds. The default is 15 seconds.

telnet-config:

If set to 0, this parameter instructs the print server not to allow incoming Telnet connections. To regain access, change the setting in the TFTP configuration file and power cycle the print server, or cold reset the print server to factory default values. If this parameter is set to 1, incoming Telnet connections are allowed.

SNMP

snmp-config:

Enables or disables SNMP operation on the print server. 0 disables, 1 (default) enables SNMP.

get-community-name:

Specifies a password that determines which SNMP GetRequests the HP Jetdirect print server will respond to. This is optional. Specifies a password for SNMP GetRequests sent to the HP Jetdirect print server. This password is optional. If a user-specified get community name is set, the print server will respond to either a user-specified community name or the factory-default. The community name must be ASCII characters. The maximum length is 255 characters.

set-community-name:

Specifies a password that determines which SNMP SetRequests (control functions) the HP Jetdirect print server will respond to. The community name of an incoming SNMP SetRequest must match the print server's "set community name" for the print server to respond. SetRequests must come from hosts that are configured in the print server's host access list. Community names must be ASCII characters. The maximum length is 255 characters.

auth-trap:

Configures the print server to send (on) or not send (off) SNMP authentication traps. Authentication traps indicate that an SNMP request was received, but the community name check failed. The default is "on."

trap-dest:

Enters a host's IP address into the HP Jetdirect print server's SNMP trap destination list. The command format is:

trap-dest: *ip-address* [community name] [port number]

The default community name is 'public'; the default SNMP port number is '162'. The port number cannot be specified without a community name, otherwise the port number will become the community name.

If a 'trap-community-name' command is followed by 'trap-dest' commands, the trap community name will be assigned to those entries unless a different community name is specified in each 'trap-dest' command.

To delete the table, use 'trap-dest: 0'.

If the list is empty, the print server does not send SNMP traps. The list may contain up to five entries. The default SNMP Trap Destination List is empty. To receive SNMP traps, the systems listed on the SNMP trap destination list must have a trap daemon to listen to those traps.

trap-community-name:

Community name (password) included with SNMP traps that are sent by the HP Jetdirect print server to a host computer. The default community name is `public`. Community names must be ASCII characters. The maximum length is 255 characters.

IPX/SPX

ipx-config:

Enables or disables IPX/SPX protocol operation on the print server: 0 disables, 1 (default) enables.

ipx-unit-name:

	A user-assigned alphanumeric name assigned to the print server (31 characters maximum). By default, the name will be NPIxxxxxx, where xxxxxx are the last six digits of the LAN hardware address.
ipx-frametype:	
	Specify the IPX frame type setting: AUTO (default), EN_SNAP, EN_8022, EN_8023, EN_II, TR_8022, TR_SNAP.
ipx-sapinterval:	
	Specifies the time interval (1 to 3600 seconds) that the HP Jetdirect print server waits between Service Advertising Protocol (SAP) broadcasts on the network. The default is 60 seconds. 0 disables SAP broadcasts.
ipx-nds-tree:	
	Identifies the name of the Novell Directory Services (NDS) tree for this printer.
ipx-nds-context:	
	An alphanumeric string, up to 256 characters, that specifies the NDS context for the HP Jetdirect print server.
ipx-job-poll:	
	Specifies the time interval (seconds) that the HP Jetdirect print server will wait to check for print jobs in a print queue.
ipx-banner:	
	Enables or disables printing an IPX banner page. 0 disables banner pages. 1 (default) enables banner pages.
ipx-eoj:	
	Enables or disables IPX end-of-job notification. 0 disables, 1 (default) enables.
ipx-toner-low:	
	Enables or disables IPX toner-low notification. 0 disables, 1 (default) enables.
AppleTalk	
appletalk:	
	Enables or disables AppleTalk (EtherTalk) protocol operation on the print server: 0 disables, 1 (default) enables.
DLC/LLC	
dlc/lc:	
	Enables or disables DLC/LLC protocol operation on the print server: 0 disables, 1 (default) enables.
Other Settings	
scan-config:	
	Enables or disables the Web Scan feature on the print server when connected to a supported device. 0 disables, 1 (default) enables.

scan-idle-timeout:	
	Specifies the number of seconds (1 - 3600) that an idle scan connection is allowed to remain open. 0 disables the timeout. The default is 300 seconds.
scan-email-config:	
	Enable or disable the scan-to-email feature in the Web Scan server. 0 disables, 1 (default) enables.
MFP-config:	
	Enable or disable print server support of the client software provided with your multifunction or all-in-one peripheral. 0 (default) disables client software support (allows printing only). 1 enables client software support (allows printing and scanning).
usb-mode:	
	Specifies the communication mode over the USB port on the HP Jetdirect print server. <ul style="list-style-type: none"> • Auto (default): Automatically negotiates and sets the the highest communication mode possible for the attached printer or device. • MLC: (Multiple Logical Channels) An HP-proprietary communication mode that allows multiple channels of simultaneous print, scan and status communications. • BIDIR: A standard connection that supports bi-directional communications between the printer and print server. The print server sends print data and receives status from the printer. • UNIDIR: A standard connection in which data is transferred in one direction only (to the printer).
usb-statpg-lang:	
	Specifies the page description language (PDL) that the print server will use to send the Jetdirect configuration/status page to the printer. <ul style="list-style-type: none"> • Auto (default): The PDL is auto-detected when the print server is powered on or after a cold-reset to factory defaults. • PCL: Hewlett-Packard Printer Control Language • ASCII: Standard ascii characters • HPGL2: Hewlett-Packard Graphics Language (v2) • PS: Postscript language
Support	
support-name:	
	Typically used to identify the name of a person to contact for support of this device.
support-number:	
	Typically used to specify a phone or extension number to call for support of this device.
support-url:	

	A web URL address for product information on this device over the Internet or an intranet.
tech-support-url:	
	A web URL address for technical support over the Internet or an intranet.

Next topic: [Using DHCP](#)

Using DHCP



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Dynamic Host Configuration Protocol (DHCP, RFC 2131/2132) is one of several auto configuration mechanisms that the HP Jetdirect print server uses. If you have a DHCP server on your network, the HP Jetdirect print server automatically obtains its IP address from that server and registers its name with any RFC 1001 and 1002-compliant dynamic name services as long as a WINS (Windows Internet Naming Service) server IP address has been specified.

A TFTP (Trivial File Transfer Protocol) configuration file may also be used with DHCP to configure extended parameters. For more information on TFTP parameters, see "[Using BOOTP/TFTP](#)".

Note DHCP services must be available on the server. Refer to your system documentation or online help to install or enable DHCP services.

Note If the Jetdirect print server and BOOTP/DHCP server are located on different subnets, IP configuration may fail unless the routing device allows the transfer of DHCP requests between subnets.

UNIX Systems

For more information on setting up DHCP on UNIX systems, see the `bootpd` man page.

On HP-UX systems, a sample DHCP configuration file (`dhcptab`) may be located in the `/etc` directory.

Since HP-UX presently does not provide Dynamic Domain Name Services (DDNS) for its DHCP implementations, HP recommends that you set all print server lease durations to *infinite*. This ensures that print server IP addresses remain static until dynamic domain name services are provided.

Windows Systems

HP Jetdirect print servers support IP configuration from a Windows NT or 2000 DHCP server. This section describes how to set up a pool, or "scope," of IP addresses that the Windows server can assign or lease to any requester. When configured for BOOTP or DHCP operation and powered on, the HP Jetdirect print server automatically sends a BOOTP or DHCP request for its IP configuration. If properly set up, a Windows DHCP server will respond with the print server's IP configuration data.

Note This information is provided as an overview. For specific information or for additional support, see the information supplied with your DHCP server software.

Note To avoid problems resulting from IP addresses that change, HP recommends that all printers be assigned IP addresses with infinite leases or reserved IP addresses.

Windows NT 4.0 Server

To set up a DHCP scope on a Windows NT 4.0 server, perform the following steps:

- 1** At the Windows NT server, open the *Program Manager* window and double-click the *Network Administrator* icon.
- 2** Double-click the **DHCP Manager** icon to open this window.
- 3** Select **Server** and select **Server Add**.
- 4** Type the server IP address, then click **OK** to return to the *DHCP Manager* window.
- 5** In the list of DHCP servers, click on the server you have just added, then select **Scope** and select **Create**.
- 6** Select **Set up the IP Address Pool**. In the *IP Address Pool* section, set up the IP address range by typing the beginning IP address in the *Start Address* box and the ending IP address in the *End Address* box. Also type the subnet mask for the subnet to which the IP address pool applies.

The starting and ending IP addresses define the end points of the address pool assigned to this scope.

Note If desired, you can exclude ranges of IP addresses within a "scope."

- 7** In the *Lease Duration* section, select **Unlimited**, then select **OK**.

HP recommends that all printers be assigned infinite leases to avoid problems resulting from IP addresses that change. Be aware, however, that selecting an unlimited lease duration for the scope causes all clients in that scope to have infinite leases.

If you want clients on your network to have finite leases, you can set the duration to a finite time, but you should configure all printers as reserved clients for the scope.

- 8** Skip this step if you have assigned unlimited leases in the previous step. Otherwise, select **Scope** and select **Add Reservations** to set up your printers as reserved clients. For each printer, perform the following steps in the *Add Reserved Clients* window to set up a reservation for that printer:
 - a.** Type the selected IP address.
 - b.** Obtain the MAC address or hardware address from the configuration page, and type this address in the *Unique Identifier* box.
 - c.** Type the client name (any name is acceptable).
 - d.** Select **Add** to add the reserved client. To delete a reservation, in the *DHCP Manager* window, select **Scope** and select **Active Leases**. In the *Active Leases* window, click on the reservation you want to delete and select **Delete**.
- 9** Select **Close** to return to the *DHCP Manager* window.
- 10** Skip this step if you are not planning to use WINS (Windows Internet Naming Service). Otherwise perform the following steps when configuring your DHCP server:
 - a.** From the *DHCP Manager* window, select **DHCP Options** and select one of the following:
 - Scope** - if you want Name Services only for the selected scope.
 - Global** - if you want Name Services for all scopes.
 - b.** Add the server to the *Active Options* list. From the *DHCP Options* window, select **WINS/NBNS Servers (044)** from the *Unused Options* list. Select **Add**, then select **OK**.

A warning may appear requesting that you set the node type. You do this in step 10d.
 - c.** You must now provide the IP address of the WINS server by doing the following:
 - d.** Select **Value**, then **Edit Array**.

- e. From the *IP Address Array Editor*, select **Remove** to delete any undesired addresses previously set. Then type in the IP address of the WINS server and select **Add**.
- f. Once the address appears in the list of IP addresses, select **OK**. This returns you to the *DHCP Options* window. If the address you have just added appears in the list of IP addresses (near the bottom of the window) return to step 10d. Otherwise, repeat step 10c.
- g. In the *DHCP Options* window, select **WINS/NBT Node Type (046)** from the *Unused Options* list. Select **Add** to add the node type to the Active Options list. In the *Byte* box, type 0x4 to indicate a mixed node, and select **OK**.

11 Click **Close** to exit to **Program Manager**.

Windows 2000 Server

To set up a DHCP scope on a Windows 2000 server, perform the following steps:

- 1** Run the Windows 2000 DHCP manager utility. Click **Start**, select **Settings** and **Control Panel**. Open the **Administrative Tools** folder and run the **DHCP** utility.
- 2** In the DHCP window, locate and select your Windows 2000 server in the DHCP tree.

If your server is not listed in the tree, select **DHCP** and click the **Action** menu to add the server.
- 3** After selecting your server in the DHCP tree, click the **Action** menu and select **New Scope**. This runs the **Add New Scope** Wizard.
- 4** In the **Add New Scope** Wizard, click **Next**.
- 5** Enter a Name and Description for this scope, then click **Next**.
- 6** Enter the range of IP addresses for this scope (beginning IP address and ending IP address). Also, enter the subnet mask. then click **Next**.

Note If subnetting is used, the subnet mask defines which portion of an IP address specifies the subnet and which portion specifies the client device. For more information, see TCP/IP Overview.

- 7** If applicable, enter the range of IP addresses within the scope to be excluded by the server. Then click **Next**.

- 8** Set the IP address lease duration for your DHCP clients. Then click **Next**.

HP recommends that all printers be assigned reserved IP addresses. This can be accomplished after you set up the scope (see step [11](#)).

- 9** Select **No** to configure DHCP options for this scope later. Then click **Next**.

To configure DHCP options now, select **Yes** and click **Next**.

- a.** If desired, specify the IP address of the router (or default gateway) to be used by clients. Then click **Next**.
 - b.** If desired, specify the Domain Name and DNS (Domain Name System) servers for clients. Click **Next**.
 - c.** If desired, specify WINS server names and IP addresses. Click **Next**.
 - d.** Select **Yes** to activate the DHCP options now, and click **Next**.
- 10** You have successfully set up the DHCP scope on this server. Click **Finish** to close the wizard.
- 11** Configure your printer with a reserved IP address within the DHCP scope:
 - a.** In the DHCP tree, open the folder for your scope and select **Reservations**.
 - b.** Click the **Action** menu and select **New Reservation**.
 - c.** Enter the appropriate information in each field, including the reserved IP address for your printer. (Note: the MAC address for your HP Jetdirect-connected printer is available on the HP Jetdirect configuration page.)
 - d.** Under "Supported types", select **DHCP only**, then click **Add**. (Note: Selecting **Both** or **BOOTP only** will result in a configuration via BOOTP due to the sequence in which HP Jetdirect print servers initiate configuration protocol requests.)
 - e.** Specify another reserved client, or click **Close**. The reserved clients added will be displayed in the Reservations folder for this scope.

- 12** Close the DHCP manager utility.

NetWare 5.x servers provide DHCP configuration services for network clients, including the HP Jetdirect print server. To set up DHCP services on a NetWare server, refer to Novell documentation and support.

To Discontinue DHCP Configuration

CAUTION Changes to an IP address on your HP Jetdirect print server may require updates to printer or system printing configurations for clients or servers.

If you do not want your HP Jetdirect print server configured via DHCP, you must choose a different configuration method.

- 1** (For EIO internal print servers) If you use the printer control panel to set Manual or BOOTP configuration, then DHCP will not be used.
- 2** You can use Telnet to set Manual (status indicates "User Specified") or BOOTP configuration, then DHCP will not be used.
- 3** You can manually modify the TCP/IP parameters via a supported web browser using the Jetdirect embedded web server or HP Web JetAdmin.

If you change to BOOTP configuration, the DHCP-configured parameters are released and the TCP/IP protocol is initialized.

If you change to Manual configuration, the DHCP-configured IP address is released and the user-specified IP parameters are used. **Therefore, if you manually provide the IP address, you should also manually set all of the configuration parameters, such as subnet mask, default gateway, and idle timeout.**

Note If you choose to return to a DHCP configuration, the print server assumes it should acquire its configuration information from a DHCP server. This means that when you choose DHCP and complete your configuration session (using Telnet, for example), the TCP/IP protocol for the print server is re-initialized and all current configuration information is deleted. The print server then attempts to acquire new configuration information by sending DHCP requests on the network to a DHCP server.

For DHCP configuration via Telnet, refer to "[Using Telnet](#)" in this chapter.

Next topic: [Using RARP](#)

Using RARP



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This subsection describes how to configure the print server using the Reverse Address Resolution Protocol (RARP) on UNIX and Linux systems.

This setup procedure enables the RARP daemon running on your system to respond to a RARP request from the HP Jetdirect print server and to supply the IP address to the print server.

- 1 Turn the printer off.
- 2 Log onto your UNIX or Linux system as a superuser.
- 3 Make sure the RARP daemon is running on your system by typing the following command at the system prompt:

```
ps -ef | grep rarpd (Unix)
```

```
ps ax | grep rarpd (BSD or Linux)
```

- 4 The system response should be similar to the following:

```
861 0.00.2 24 72 5 14:03 0:00 rarpd -a
```

```
860 0.00.5 36 140 5 14:03 0:00 rarpd -a
```

- 5 If the system does not display a process number for the RARP daemon, see the *rarpd* man page for instructions on starting the RARP daemon.
- 6 Edit the `/etc/hosts` file to add your designated IP address and node name for the HP Jetdirect print server. For example:

```
192.168.45.39 laserjet1
```

- 7 Edit the `/etc/ethers` file (`/etc/rarpd.conf` file in HP-UX 10.20) to add the LAN hardware address/station address (from the configuration page) and the node name for the HP Jetdirect print server. For example:

```
00:01:E6:a8:b0:00 laserjet1
```

Note If your system uses Network Information Service (NIS), you need to incorporate changes to the NIS host and ethers databases.

- 8 Turn the printer on.
- 9 To verify that the card is configured with the correct IP address, use the ping utility. At the prompt, type:

```
ping <IP address>
```

where <IP address> is the assigned address from RARP. The default IP address is 192.0.0.192.

10 If ping does not respond, see the [Troubleshooting](#) section.

Next topic: [Using the arp and ping commands](#)

Using the arp and ping Commands



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You can configure an HP Jetdirect print server with an IP address using an ARP (Address Resolution Protocol) command from a supported system. The protocol is not routable, that is, the workstation from which the configuration is made must be located on the same network segment as the HP Jetdirect print server.

Using the arp and ping commands with HP Jetdirect print servers requires the following:

- Windows NT/2000 or UNIX system configured for TCP/IP operation
- HP Jetdirect firmware version x.08.03 or later
- The LAN hardware (MAC) address of the HP Jetdirect print server (specified on an HP Jetdirect configuration page, or on a label attached to HP Jetdirect external print servers)

Note On some systems, superuser rights may be required for the arp command.

After an IP address is assigned via `arp` and `ping` commands, use other tools (such as Telnet, embedded web server, or HP Web JetAdmin software) to configure other IP parameters.

To configure a Jetdirect print server, use the following commands:

```
arp -s <IP address> <LAN hardware address>
```

```
ping <IP address>
```

where `<IP address>` is the desired IP address to be assigned to the print server. The `arp` command writes the entries to the arp cache on the workstation, and the `ping` command configures the IP address on the print server.

Depending on the system, the LAN hardware address may require a specific format.

For example:

- In Windows NT 4.0 or Windows 2000

```
arp -s 192.168.45.39 00-01-E6-a2-31-98
```

```
ping 192.168.45.39
```

- **In UNIX**

```
arp-s 192.168.45.39 00:01:E6:a2:31:98
```

```
ping 192.168.45.39
```

Note Once the IP address has been set on the print server, additional arp and ping commands will be ignored. Once the IP address is configured, arp and ping cannot be used unless the print server is reset to factory values (see Troubleshooting the HP Jetdirect Print Server).

On UNIX systems, the arp -s command may vary between different systems.

Some BSD-based systems expect the IP address (or host name) in reverse order. Other systems may require additional parameters. See your system documentation for specific command formats.

Next topic: [Telnet](#)

Using Telnet



This section describes how to configure the print server (firmware version x.21.01 or greater) using Telnet.

Note To use Telnet commands with the HP Jetdirect print server, a route must be available from your workstation to the print server. This means that there must be a match between the network identification of your system to that of the HP Jetdirect print server. (For example, if the print server is configured with its default IP address, a route may not exist.)

On Windows 95/98 and NT/2000 systems, you can use the following route command at a DOS prompt to add a route to the print server:

```
route add <Jetdirect IP Address> <system IP Address>
```

where <Jetdirect IP address> is the IP address configured on the HP Jetdirect print server, and <system IP address> is the IP address of the workstation's network card that is attached to the same physical LAN as the print server.

Example: `route add 192.168.45.39 192.170.1.2`

Using Telnet to manually set an IP address will override dynamic IP configuration (such as BOOTP, DHCP, or RARP), resulting in a static configuration. In a static configuration, the IP values are fixed and the operation of BOOTP, DHCP, RARP and other dynamic configuration methods may no longer function.

Whenever you are manually changing an IP address, you should also reconfigure the subnet mask and default gateway at the same time.

Initiating a typical Telnet session is illustrated below

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```
Microsoft(R) Windows NT(TM)
(C) Copyright 1985-1996 Microsoft Corp.

C:\>Telnet 192.168.40.133

C:\> Telnet - 192.168.40.133
Connect Edit Terminal Help
HP JetDirect
Password is not set

Please type "?" for help, or "/" for current settings.
>

Telnet - 192.168.40.133
Connect Edit Terminal Help
Please type "?" for help, or "/" for current settings.
> ?
Help Menu
Type one "Command" followed by one of its valid "Values".

Command:          Values:
-----          -
TCP/IP
ip-config          MANUAL, BOOTP-ONLY, DHCP-ONLY
ip                 IP address in dotted notation, 0.0.0.0 to dis
subnet-mask       IP address in dotted notation, 0.0.0.0 to dis
default-gw        IP address in dotted notation, 0.0.0.0 to dis
idle-timeout      integer (1..3600) seconds, 0 to disable
syslog-svr        IP address in dotted notation, 0.0.0.0 to dis
tftp-server       IP address in dotted notation, 0.0.0.0 to dis
```

To set configuration parameters, you must set up a Telnet connection from your system to the HP Jetdirect print server.

1 Type the following at the system prompt:

```
telnet <IP address>
```

where <IP address> may be the assigned address from BOOTP, RARP, DHCP, the printer control panel, or the default IP address. The default IP address is 192.0.0.192. The <IP address> is listed on the Jetdirect configuration page (see [HP Jetdirect Configuration Page](#)).

2 A connection to the HP Jetdirect print server will be displayed. If the server responds with "connected to IP address", press [Enter] twice to make sure that the Telnet connection is initialized.

3 If prompted for a user name and password, enter the correct values.

By default, the Telnet interface does not require a user name or password. If an administrative password has been set, you will be prompted for a user name and this password before you can enter and save Telnet commands.

- 4 By default, a Command Line interface is provided. To configure parameters using a Menu interface, enter **Menu**. For more information, see "[User Interface Options](#)".

For a list of supported commands and parameters, see "[Telnet Commands and Parameters](#)".

User Interface Options

The HP Jetdirect print server provides two interface options to enter Telnet commands: a [Command Line Interface \(Default\)](#) and a [Menu Interface](#).

Command Line Interface (Default)

Using the Telnet command line interface, you can set configuration parameters using the following procedures:

Note Any time during the Telnet session you can type:?
then press [Enter] to view available configuration parameters, the correct command format, and a list of commands.

To list additional (or advanced) commands, enter the "advanced" command before entering "?".

To display current configuration information, type / then press [Enter].

- 1 At the Telnet prompt ">" type:

```
<parameter>: <value>
```

then press [Enter], where <parameter> refers to the configuration parameter you are defining, and <value> refers to the definitions you are assigning to that parameter. Each parameter entry is followed by a carriage return.

See [Telnet Commands and Parameters](#) for configuration parameters.

- 2 Repeat the previous step to set any additional configuration parameters.
- 3 When you have finished typing the configuration parameters, type "save", "exit", or "quit" (depending on your system).

When prompted whether to save settings that you have changed, enter "Y" (default) for Yes, or "N" for No.

Telnet Commands and Parameters

[Telnet Commands and Parameters](#) lists the available Telnet commands and parameters.

Note If a parameter is supplied dynamically (for example, from a BOOTP or DHCP server), its value cannot be changed using Telnet without first setting Manual configuration (see the "ip-config" command).

Whenever you are manually changing an IP address, you should also reconfigure the subnet mask and default gateway at the same time.

Table 3.4 Telnet Commands and Parameters

User Control Commands	
?	Displays the Help and Telnet commands.
/	Displays current values.
menu	Displays the Menu Interface for access to configuration parameters.
advanced	Enables the Advanced commands. Help (?) will include the Advanced commands in the list.
general	Disables the Advanced commands. Help (?) will not include Advanced commands (default).
export	Export the settings to a file for editing, and importing via Telnet or TFTP (this command is only supported by systems, such as UNIX, that support input/output redirection).
save	Save the configuration values and exit the session.
exit	Exit the session.
General Settings	
passwd	Set the administrative password (shared with the embedded web server). For example, "passwd jd1234 jd1234" sets the password to jd1234. (entered twice for confirmation). Up to 16 alphanumeric characters may be used. When initiating the next Telnet session, you will be prompted for a user name and this password. To clear the password, enter the command without password and confirmation entries.
sys-location	Alpha-numeric string (up to 255 characters), typically used to identify a location.
sys-contact	Alpha-numeric string (up to 255 characters), typically used to identify the name of a network or device administrator.
TCP/IP Main Settings	

host-name	Alpha-numeric string (up to 32 characters), to assign or change the name of the network device. For example, "host-name printer1" assigns the name "printer1" to the device.
ip-config	Specify the configuration method: manual: The print server will wait for IP parameters using manual tools (such as Telnet, embedded web server, control panel, installation/management software). Status will be "User Specified". bootp: The print server will send BOOTP requests on the network for dynamic IP configuration. dhcp: The print server will send DHCP requests on the network for dynamic IP configuration.
ip	IP address for the print server, in dotted notation. For example: "ip-config manual" "ip 192.168.45.39" where "ip-config" specifies manual configuration and "ip" manually sets the IP address 192.168.45.39 on the print server. Specifying 0.0.0.0 clears the IP address. If you exit and save a new IP address, it must be specified on the next Telnet connection.
subnet-mask	A value (in dotted notation) that identifies the network and host portions of an IP address in received messages. For example, "subnet-mask 255.255.255.0" stores the subnet mask value 255.255.255.0 on the print server. The value 0.0.0.0 disables the subnet mask. For more information see TCP/IP Overview .
default-gw	The IP address of a default gateway, in dotted notation. For example, "default-gw 192.168.40.1" assigns 192.168.40.1 as the IP address of the default gateway for the print server. Note: If the HP Jetdirect print server is configured by DHCP and you manually change the subnet mask or the default gateway address, you should manually change the print server's IP address. This will release the DHCP-assigned address back to the DHCP IP address pool.
Config Server	(Read-only parameter) The IP address of the server (such as a BOOTP or DHCP server) that last configured the IP address on the HP Jetdirect print server.
TFTP Server	(Read-only parameter) The IP address of the TFTP server that provided TFTP parameters to the HP Jetdirect print server.
TFTP Filename	(Read-only parameter) The path and TFTP filename on the TFTP server. For example, hpnp/printer1.cfg
domain-name	The domain name for the device. For example, "domain-name support.hp.com" assigns "support.hp.com" as the domain name. The domain name does not include the host name--it is not the Fully Qualified Domain Name (such as printer1.support.hp.com).
dns-svr	IP address of the DNS (Domain Name System) server.

pri-wins-svr	The IP address of the primary Windows Internet Name Service (WINS) server, in dotted notation.
sec-wins-svr	The IP address of the secondary Windows Internet Name Service (WINS) server, in dotted notation.
smtp-svr	(SMTP Mail Server) The IP address of the outgoing e-mail Simple Mail Transport Protocol (SMTP) server, for use with supported Scan devices.
TCP/IP Print Options	
9100-printing	Enables or disables printing to TCP port 9100 on the print server. 0 disables, 1 (default) enables.
ftp-printing	Enables or disables the ability to print via FTP. 0 disables, 1 (default) enables. (TCP ports 20, 21)
ipp-printing	Enables or disables the ability to print using IPP. 0 disables, 1 (default) enables. (TCP port 631)
lpd-printing	Enables or disables the ability to print using LPD. 0 disables, 1 (default) enables. (TCP port 515)
banner	Enables or disables printing an LPD banner page. 0 disables banner pages. 1 (default) enables banner pages.
interlock	Specifies whether an acknowledgement (ACK) on all TCP packets is required before the printer is allowed to close a Port 9100 print connection. To accommodate multiport print servers, a Port Number and Option value are specified. Port Numbers can be 1 (default), 2, or 3. Option value 0 (default) disables interlock, 1 enables. For example, "interlock 2 1" specifies Port 2, interlock enabled.
buffer-packing	Enables or disables buffer packing for TCP/IP packets. 0 (default) is normal, the data buffer is packed before sending to the printer. 1 disables buffer packing, data is sent to the printer as it is received.
write-mode	Controls the setting of the TCP PSH flag for device-to-client data transfers. 0 (default): disables this option, flag is not set. 1: all-push option. The push bit is set in all data packets. 2: eoi-push option. The push bit is set only for data packets that have an End-of-Information flag set.
mult-tcp-conn	(Restrict Mult Prt) Enables or disables multiple TCP connections. 0 (default): allows multiple connections. 1: disables multiple connections.
TCP/IP Raw Print Ports	
raw-port	Specifies additional ports for printing to TCP port 9100. Valid ports are 3000 to 9000, which are application dependent.
TCP/IP Access Control	

	allow	<p>Makes an entry into the host access list stored on the HP Jetdirect print server. Each entry specifies a host or network of hosts that are allowed to connect to the printer. The format is "allow netnum [mask]" where netnum is a network number or host IP address, and mask is an address mask of bits applied to the network number and host address to verify access. Up to 10 access list entries are allowed. If there are no entries, all hosts are permitted access. For example, "allow 192.0.0.0 255.0.0.0" allows hosts on network 192. "allow 192.168.1.2" allows a single host. In this case, the default mask 255.255.255.255 is assumed and is not required. "allow 0" clears the host access list. For additional information, see Security Features.</p>
TCP/IP Other Settings		
	syslog-config	Enables or disables syslog server operation on the print server: 0 disables, 1 (default) enables. (UDP port 514)
	syslog-svr	<p>The syslog server's IP address in dotted notation. It specifies the server that the HP Jetdirect print server sends syslog messages to. For example, "syslog-svr: 192.168.40.1" assigns 192.168.40.1 as the IP address of that server. For more information, see TCP/IP Overview.</p>
	syslog-max	Specifies the maximum number of syslog messages that can be sent by the HP Jetdirect print server on a per-minute basis. This setting allows administrators to control the log file size. The default is 10 per minute. If it's set to zero, the number of syslog messages is not restricted.
	syslog-priority	Controls the filtering of syslog messages sent to the syslog server. The filter range is 0 to 8, with 0 being the most specific and 8 the most general. Only messages that are lower than the filter level specified (or higher in priority) are reported. The default is 8, messages of all priorities are sent. If 0, all syslog messages are disabled.
	syslog-facility	A code used to identify the source facility of a message (for example, to identify the source of selected messages during troubleshooting). By default, the HP Jetdirect print server uses LPR as the source facility code, but local user values of local0 through local7 can be used to isolate individual or groups of print servers.
	slp-config	Enables or disables the Service Location Protocol (SLP) operation on the print server: 0 disables, 1 (default) enables. SLP is used by selected HP software applications to automate device discovery.
	ttl-slp	Specifies the IP multicast "Time To Live" (TTL) setting for Service Location Protocol (SLP) packets. The default value is 4 hops (the number of routers from the local network). The range is 1-15. When set to a -1, multicast capability is disabled.

idle-timeout	An integer (1..3600) that specifies the number of seconds an idle print data connection is allowed to remain open. For example, "idle-timeout 120" assigns 120 seconds as the desired idle timeout value. The default is 270 seconds. If set to 0, the connection will not terminate and other hosts will not be able to make a connection.
telnet-timeout	An integer (1..3600) that specifies the number of seconds that your Telnet or FTP session can be idle before it will be automatically disconnected. The default is 900 seconds. 0 disables the timeout. CAUTION: Small values, such as 1-5, may effectively disable the use of Telnet. A Telnet session may terminate before any changes can be made.
cold-reset	Sets TCP/IP factory default settings. After a cold reset, power cycle the print server. Parameters for other subsystems, such as IPX/SPX or AppleTalk, are not affected.
ews-config	Enables or disables the print server's embedded web server. 0 disables, 1 (default) enables. For more information, see Using the Embedded Web Server .
tcp-mss	Specifies the maximum segment size (MSS) that the HP Jetdirect print server will advertise for use when communicating with local subnets (Ethernet MSS=1460 bytes or more) or remote subnets (MSS=536 bytes): 0: (default) All networks are assumed to be local (Ethernet MSS=1460 bytes or more). 1: Use MSS=1460 bytes (or more) for subnets, and MSS=536 bytes for remote networks. 2: All networks are assumed to be remote (MSS=536 bytes), except the local subnet. MSS affects performance by helping to prevent IP Fragmentation that may result in data retransmission.
tcp-msl	Specifies the maximum segment life (MSL) in seconds. The range is 5 - 120 seconds. The default is 15 seconds.

TCP/IP Diagnostics

Last Config IP	(Read-only parameter) The IP address of the system from which the HP Jetdirect print server's IP address was configured.
TCP Conns Refused	(Read-only parameter) The number of client TCP connections that are refused by the print server.
TCP Access Denied	(Read-only parameter) The number of times that client systems were denied access to the print server because there was no allowable entry in the print server's host access list.
DHCP Lease Time	(Read-only parameter) DHCP IP address lease duration time (seconds).
DHCP Renew Time	(Read-only parameter) DHCP T1 timeout, specifying the DHCP lease renewal time (seconds).

DHCP Rebind Time	(Read-only parameter) DHCP T2 timeout, specifying the DHCP lease rebind time (seconds).
SNMP Main Settings	
snmp-config	Enables or disables SNMP operation on the print server. 0 disables, 1 (default) enables SNMP.
get-community-name	Specifies a password that determines which SNMP GetRequests the HP Jetdirect print server will respond to. This is optional. Specifies a password for SNMP GetRequests sent to the HP Jetdirect print server. This password is optional. If a user-specified get community name is set, the print server will respond to either a user-specified community name or the factory-default. The community name must be ASCII characters. The maximum length is 255 characters.
set-community-name	Specifies a password that determines which SNMP SetRequests (control functions) the HP Jetdirect print server will respond to. The community name of an incoming SNMP SetRequest must match the print server's "set community name" for the print server to respond. SetRequests must come from hosts that are configured in the print server's host access list. Community names must be ASCII characters. The maximum length is 255 characters.
SNMP Traps	
auth-trap	Configures the print server to send (on) or not send (off) SNMP authentication traps. Authentication traps indicate that an SNMP request was received, but the community name check failed. 0 is off, 1 (default) is on.
trap-dest	<p>Enters a host IP address into the HP Jetdirect print server's SNMP trap destination list. The command format is:</p> <p style="text-align: center;">trap-dest: <i>ip-address</i> [community name] [port number]</p> <p>The default community name is 'public'; the default SNMP port number is '162'. The port number cannot be specified without a community name, otherwise the port number will become the community name.</p> <p>To delete the table, use 'trap-dest: 0'.</p> <p>If the list is empty, the print server does not send SNMP traps. The list may contain up to five entries. The default SNMP Trap Destination List is empty. To receive SNMP traps, the systems listed on the SNMP trap destination list must have a trap daemon to listen to those traps.</p>
IPX/SPX Settings	
ipx-config	Enables or disables IPX/SPX protocol operation on the print server. 0 disables, 1 (default) enables. For example, "ipx-config 0" will disable IPX/SPX operation.
ipx-unitname	A user-assigned alphanumeric name assigned to the print server (31 characters maximum). By default, the name will be NPIxxxxxx, where xxxxxx are the last six digits of the LAN hardware address.

Address	(Read-only parameter) Identifies the IPX network and node numbers detected on the network, in the form NNNNNNN:hhhhhhh (hexadecimal), where NNNNNNN is the network number and hhhhhhh is the LAN hardware address of the print server.
ipx-frametype	Specifies the IPX frame type setting: AUTO (default), EN_SNAP, EN_8022, EN_8023, EN_II, TR_8022, TR_SNAP. For more information, see HP Jetdirect Configuration Page .
ipx-sapinterval	Specifies the time interval (1 to 3600 seconds) that the HP Jetdirect print server waits between Service Advertising Protocol (SAP) broadcasts on the network. The default is 60 seconds. 0 disables SAP broadcasts.
ipx-nds-tree	An alphanumeric string, up to 31 characters, that specifies the NDS tree name for the print server.
ipx-nds-context	An alphanumeric string, up to 256 characters, that specifies the NDS context for the HP Jetdirect print server.
ipx-job-poll	Specifies the time interval (1 to 255 seconds) that the HP Jetdirect print server will wait to check for print jobs in a print queue. The default is 2 seconds.
ipx-banner	Enables or disables printing an IPX banner page via Printer Job Language (PJM). 0 disables banner pages. 1 (default) enables banner pages.
ipx-eoj	Enables or disables IPX end-of-job notification via PJL. 0 disables, 1 (default) enables.
ipx-toner-low	Enables or disables IPX toner-low notification via PJL. 0 disables, 1 (default) enables.
source-route	(Token Ring only) Configures the HP Jetdirect print server with the IPX/SPX source routing used on the network. auto (default): Source routing is automatically sensed from the network. off: Packets are transmitted without source routing. The print server will only respond to stations on the same ring. single r: All packets are sent with source routing. The Single Route method is used for broadcasts and when the route is unknown. all rt: All packets are sent with source routing. The All Routes method is used for broadcasts and when the route is unknown.
AppleTalk Settings	
at-config	Enables or disables AppleTalk (EtherTalk) protocol operation on the print server. 0 disables, 1 (default) enables. For example, "at-config 0" will disable AppleTalk operation
Device Name	(Read-only parameter) The name of the printer on the AppleTalk network. A number after the name indicates that there are multiple devices with this name, and this is the Nth instance of the name.
Print Type	(Read-only parameter) Specifies the AppleTalk network printer type reported by the Jetdirect print server.

Zone	(Read-only parameter) The name of the AppleTalk network zone on which the printer is located.
Phase	(Read-only parameter) AppleTalk phase 2 (P2) is preconfigured on the HP Jetdirect print server.
Status	(Read-only parameter) Indicates the current AppleTalk configuration status. READY: Indicates the HP Jetdirect print server is awaiting data. DISABLED: Indicates that AppleTalk was manually disabled. INITIALIZING: Indicates that the print server is registering the node address or name. An additional status message may also be displayed.
DLC/LLC Settings	
dlc/llc-config	Enables or disables DLC/LLC protocol operation on the print server. 0 disables, 1 (default) enables. For example, "dlc/llc-config 0" will disable DLC/LLC operation.
Other Settings	
scan-config	(Web Scan Config) Enables or disables the Web Scan feature on the print server when connected to a supported device. 0 disables, 1 (default) enables.
scan-idle-timeout	Specifies the number of seconds (1 - 3600) that an idle scan connection is allowed to remain open. 0 disables the timeout. The default is 300 seconds.
scan-email-config	(Email Scan Config) Enable or disable the scan-to-email feature in the Web Scan server. 0 disables, 1 (default) enables.
MFP-config	(MFP config) Enable or disable print server support of the client software provided with your multifunction or all-in-one peripheral. 0 (default) disables client software support (allows printing only). 1 enables client software support (allows printing and scanning).
usb-mode	Specifies the communication mode over the USB port on the HP Jetdirect print server. <ul style="list-style-type: none"> • Auto (default): Automatically negotiates and sets the the highest communication mode possible for the attached printer or device. • MLC: (Multiple Logical Channels) An HP-proprietary communication mode that allows multiple channels of simultaneous print, scan and status communications. • BIDIR: A standard connection that supports bi-directional communications between the printer and print server. The print server sends print data and receives status from the printer. • UNIDIR: A standard connection in which data is transferred in one direction only (to the printer).

usb-statpg-lang	<p>Specifies the printer job language (PJL) that the print server will use to send the Jetdirect configuration/status page to the printer.</p> <ul style="list-style-type: none"> • Auto (default): The PDL is auto-detected when the print server is powered on or after a cold-reset to factory defaults. • PCL: Hewlett-Packard Printer Control Language • ASCII: Standard ascii characters • HPGL2: Hewlett-Packard Graphics Language (v2) • PS: Postscript language
tr-iaa	<p>Token Ring Locally Administered Address (LAA). Allows you to reassign the node address on a Token Ring print server. The default address is the print server's fixed LAN hardware address.</p>
Support Settings	
Web JetAdmin URL	<p>(Read-only parameter) If HP Web JetAdmin discovers this device, the URL to access HP Web JetAdmin will be specified.</p>
Web JetAdmin Name	<p>(Read-only parameter) If HP Web JetAdmin discovers this device, the name of the HP Web JetAdmin host will be specified (if known).</p>
support-name	<p>Typically used to identify the name of a person to contact for support of this device.</p>
support-number	<p>Typically used to specify a phone or extension number to call for support of this device.</p>
support-url	<p>A web URL address for product information on this device over the Internet or an intranet.</p>
tech-support-url	<p>A web URL address for technical support over the Internet or an intranet.</p>

Menu Interface

An optional Menu interface is displayed when you type "menu" at the Telnet command prompt. The Menu interface eliminates the need to memorize commands, and provides structured menu lists for easy access to configuration parameters.

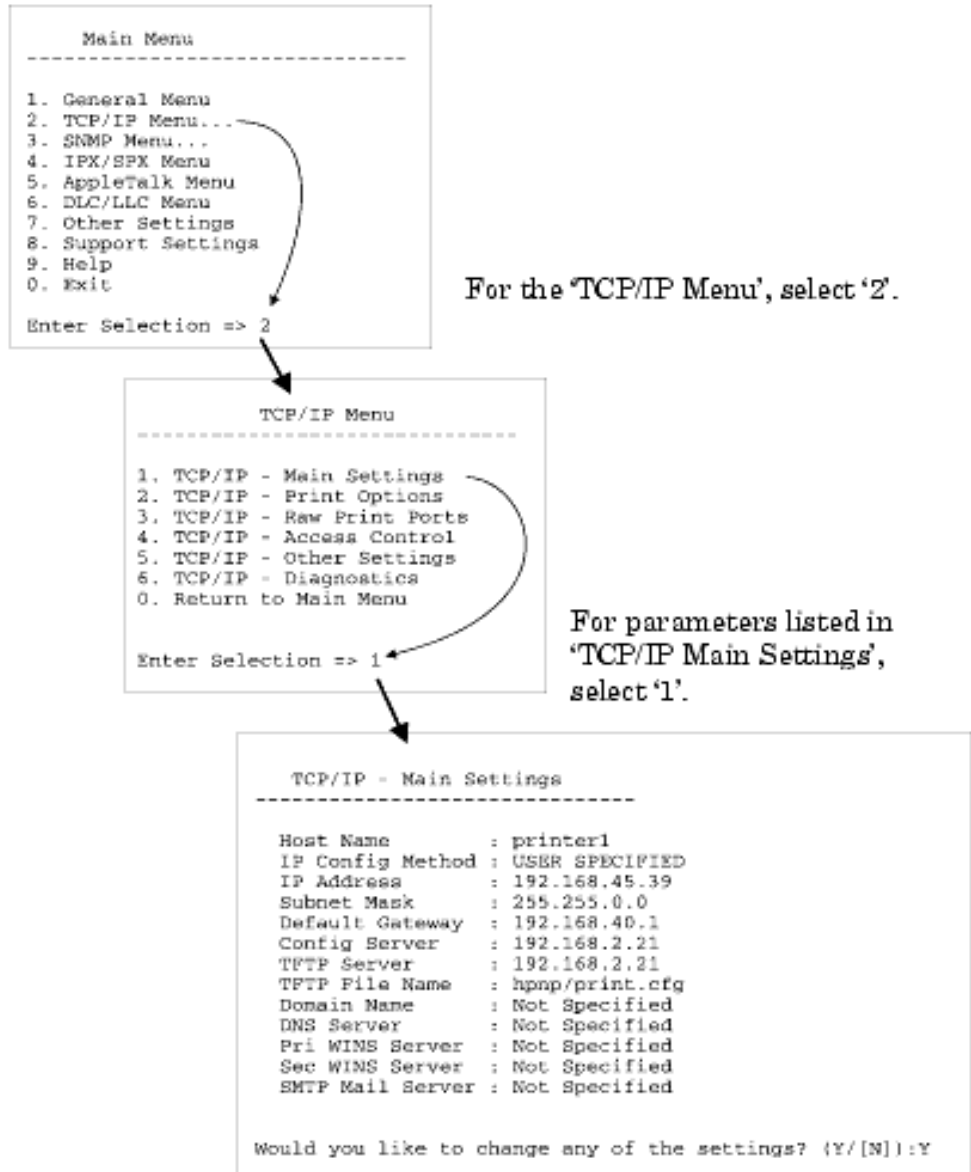
[Example: Using the Menu Interface](#) illustrates the Menu interface, using the TCP/IP menus as an example.

- From the Main Menu, select and enter a menu number. If there are submenus, select and enter a submenu number.
- If you want to change a parameter setting, enter "Y" (for "Yes") when prompted.

Changes to parameters are made by editing the setting through the use of the [Backspace] key. If an unrecognized value is entered, the correct entry options will be displayed.

Note Changes are not saved on the Jetdirect print server until you exit a menu and, when prompted, choose to save your changes.

Figure 3.1 Example: Using the Menu Interface



To edit these parameters, enter 'Y'. Use the Backspace key to edit the parameters.

Changes are not saved until you save them when you exit the session.

Using Telnet to Erase the Existing IP Address

To erase the IP address during a Telnet session, use the following command line entries:

- 1 Type `cold-reset`, then press [Enter].
- 2 Type `quit`, then press [Enter] to exit Telnet.

Note This procedure resets all TCP/IP parameters, but only affects the TCP/IP subsystem. After this has been done the print server should be power cycled. Parameters for other subsystems such as IPX/SPX (Novell NetWare) or AppleTalk are not affected.

To reset all parameters to factory default values, refer to Troubleshooting the HP Jetdirect Print Server.

Next topic: [Embedded Web server](#)

Using the Embedded Web Server



You can set IP parameters on HP Jetdirect print servers that support the embedded web server. For more information, refer to [Using the Embedded Web Server](#).

Next topic: [Moving to another network](#)

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When moving an HP Jetdirect print server that is configured with an IP address to a new network, make sure that the IP address does not conflict with addresses on the new network. You may change the IP address of the print server to one that can be used on the new network, or erase the current IP address and configure another address after you are installed on the new network. See the section on the [default configuration](#) for instructions to reset the print server to factory default settings.

If the current BOOTP server is not reachable, you may need to locate a different BOOTP server and configure the printer to this server.

If the print server was configured using BOOTP, DHCP or RARP, edit the appropriate system files with updated settings. If the IP address was manually set (for example, from the printer control panel or Telnet), reconfigure IP parameters as described in this chapter.

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Configuring for LPD Printing

This section covers the following topics:

- [Introduction](#)
- [Setup overview](#)
- [LPD on UNIX systems](#)
- [LPD on Windows NT/2000 systems](#)
- [LPD on MacOS systems](#)

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Introduction

The HP Jetdirect print server contains an LPD (Line Printer Daemon) Server module to support LPD printing. This chapter describes how to configure the HP Jetdirect print server for use with various systems that support LPD printing. These instructions include:

- [LPD on UNIX Systems](#)
 - Configuring BSD-based UNIX systems using LPD
 - Configuring print queues using the SAM utility (HP-UX systems)
- [LPD on Windows NT/2000 Systems](#)
- [LPD on Mac OS Systems](#)

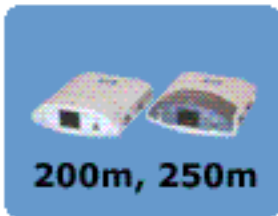
Note Recent versions of Novell NetWare (NetWare 5.x with NDPS 2.1 or greater) support LPD printing. For setup instructions and support, refer to the documentation supplied with NetWare. Also, refer to the Technical Information Documentation (TID) on Novell's support website.

About LPD

Line Printer Daemon (LPD) refers to the protocol and programs associated with line-printer spooling services that may be installed on various TCP/IP systems.

Some of the widely used systems in which the HP Jetdirect print server functionality supports LPD include:

- Berkeley-based (BSD) UNIX systems



- HP-UX
- Solaris
- IBM AIX
- Linux
- Windows NT/2000
- Mac OS

The UNIX configuration examples in this section show the syntax for BSD-based UNIX systems. The syntax for your system may vary. See your system documentation for the correct syntax.

Note The LPD functionality can be used with any host implementation of LPD that complies with the RFC 1179 document. The process for configuring printer spoolers, however, may differ. See your system documentation for information on configuring these systems.

The LPD programs and protocol include the following:

Table 4.1 LPD Programs and Protocols

Program Name	Purpose of Program
lpr	Queues jobs for printing
lpq	Displays print queues
lprm	Removes jobs from print queues
lpc	Controls print queues
lpd	Scans and prints the files if the specified printer is connected to the system. If the specified printer is connected to another system, this process forwards the files to an lpd process on the remote system where the files are to be printed.

Requirements for Configuring LPD

Before you can use LPD printing, your printer must be properly connected to the network through the HP Jetdirect print server, and you must have print server status information. This information is listed on the HP Jetdirect printer configuration page. If you have not printed a configuration page from your printer, see the hardware installation guide for your print server or your printer's getting started guide for instructions. You must also have the following:

- An operating system that supports LPD printing.
- Superuser (root) or Administrator access to your system.
- The LAN hardware address (or station address) of the print server. This address is printed with print server status information on the HP Jetdirect configuration page and is of the form:

HARDWARE ADDRESS: xxxxxxxxxxxxx

where x is a hexadecimal digit (for example, 0001E6123ABC).

- An IP address configured on the HP Jetdirect print server.

Next topic: [Setup overview](#)

LPD Setup Overview



The following steps are necessary to configure the HP Jetdirect print server for LPD printing:

- 1 Setting up IP parameters.
- 2 Setting up print queues.
- 3 Printing a test file.

The following sections provide detailed descriptions for each step.

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Step 1. Setting Up IP Parameters

To set up IP parameters on the HP Jetdirect print server, refer to [TCP/IP Configuration](#). For more information on TCP/IP networks, refer to [TCP/IP Overview](#).

Step 2. Setting Up Print Queues

You must set up a print queue for each printer or printer personality (PCL or PostScript) you use on your system. Also, different queues are required for formatted and unformatted files. The queue names `text` and `raw` in the following examples (see `rp` tag) have special meanings.

Table 4.2 Supported Queue Names

<code>raw, raw1, raw2, raw3</code>	no processing
<code>text, text1, text2, text3</code>	carriage return added
<code>auto, auto1, auto2, auto3</code>	automatic

The line printer daemon on the HP Jetdirect print server treats data in the `text` queue as unformatted text or ASCII, and adds a carriage return to each line before sending it to the printer. (Note that the actual observed behavior is that a PCL line termination command (value of 2) is issued at the beginning of the job.) The line printer daemon treats data in the `raw` queue as formatted files in PCL, PostScript, or HP-GL/2 languages and sends the data without change to the printer. Data in the `auto` queue will be automatically processed as `text` or `raw`, as appropriate. If the queue name is not one of the above, the HP Jetdirect print server assumes it to be `raw1`.



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Step 3. Printing a Test File

Print a test file using the LPD commands. For instructions, see the information provided for your system.

Next topic: [LPD on UNIX systems](#)



LPD on UNIX Systems

Configuring Print Queues for BSD-based Systems

Edit the `/etc/printcap` file to include the following entries:

```
printer_name|short_printer_name:\
:lp=:\
:rm=node_name:\
:rp=remote_printer_name_argument:\ (this
should be text, raw, or auto)
:lf=/usr/spool/lpd/error_log_filename:\
:sd=/usr/spool/lpd/printer_name:
```

where `printer_name` identifies the printer to the user, `node_name` identifies the printer on the network, and `remote_printer_name_argument` is the print queue designation.

For more information on `printcap` see the **printcap** man page.

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Example 1

(suggested name for an ASCII or text printer):

```
ljl_text|text1:\
:lp=:\
:rm=laserjet1:\
:rp=text:\
:lf=/usr/spool/lpd/ljl_text.log:\
:sd=/usr/spool/lpd/ljl_text:
```

Example 2

(suggested name for PostScript, PCL, or HP-GL/2 printers):

```
ljl_raw|raw1:\
:lp=:\
:rm=laserjet1:\
:rp=raw:\
:lf=/usr/spool/lpd/ljl_raw.log:\
:sd=/usr/spool/lpd/ljl_raw:
```

If your printer does not support automatic switching between PostScript, PCL, and HP-GL/2 languages, use the printer's control panel (if the printer has one) to select the printer language or rely on the application to select the printer language via commands embedded in the print data.

Make sure your users know the printer names for the printers, since they must type those names on the command line for printing.

Create the spooling directory by making the following entries. At the root directory, type:

```
mkdir /usr/spool/lpd
cd /usr/spool/lpd
mkdir printer_name_1 printer_name_2
chown daemon printer_name_1 printer_name_2
chgrp daemon printer_name_1 printer_name_2
chmod g+w printer_name_1 printer_name_2
```

where `printer_name_1` and `printer_name_2` refer to the printers to be spooled. You may spool several printers. The following example shows the command to create the spooling directories for printers used for text (or ASCII) printing and for PCL or PostScript printing.

Example:

```
mkdir /usr/spool/lpd
cd /usr/spool/lpd
mkdir ljl_text ljl_raw
chown daemon ljl_text ljl_raw
chgrp daemon ljl_text ljl_raw
chmod g+w ljl_text ljl_raw
```

Configuring Print Queues Using SAM (HP-UX systems)

On HP-UX systems you can use the SAM utility to configure remote print queues for printing "text" (ASCII) files or "raw" (PCL, PostScript, or other printer language) files.

Before you execute the SAM program, select an IP address for the HP Jetdirect print server and set up an entry for it in the `/etc/hosts` file on your system running HP-UX.

- 1** Start the SAM utility as a superuser.
- 2** Select **Peripheral Devices** from the *Main* menu.

3 Select **Printers/Plotters** from the *Peripheral Devices* menu.

4 Select **Printers/Plotters** from the *Printers/Plotters* menu.

5 Select **Add a Remote Printer** from the *Actions* list, then select a printer name.

Examples: `my_printer` or `printer1`

6 Select a remote system name.

Example: `jetdirect1` (node name of the HP Jetdirect print server)

7 Select a remote printer name.

Type `text` for ASCII or `raw` for PostScript, PCL, or HP-GL/2.

8 Check for a remote printer on a BSD system. You must type `Y`.

9 Click **OK** at the bottom of the menu. If the configuration is successful, the program prints the message:

The printer has been added and is ready to accept print requests.

10 Click **OK** and select **Exit** from the *List* menu.

11 Select **Exit Sam**.

Note By default, the `lpsched` is not running. Make sure you turn the scheduler on when you set up your print queues.

Printing a Test File

To verify that the printer and print server connections are correct, print a test file.

1 At the UNIX system prompt type:

```
lpr -Pprinter_name file_name
```

where `printer_name` is the designated printer and `file_name` refers to the file to be printed.

Examples (for BSD-based systems):

Text File: `lpr -Ptext1 textfile`
PCL File: `lpr -Praw1 pclfile.pcl`
PostScript File: `lpr -Praw1 psfile.ps`
HP-GL/2 File: `lpr -Praw1 hpglfile.hpg`

For HP-UX systems, substitute `lp -d` for `lpr -P`.

- 2** To get print status, type the following at the UNIX prompt:

```
lpq -Pprinter_name
```

where `printer_name` is the designated printer.

Examples (for BSD-based systems):

```
lpq -Ptext1  
lpq -Praw1
```

For HP-UX systems, substitute `lpstat` for `lpq -P` to get print status.

This completes the process for configuring the HP Jetdirect print server to use LPD.

Next topic: [LPD on Windows NT/2000 systems](#)



LPD on Windows NT/2000 Systems

This section describes how to configure Windows NT/2000 networks to use the HP Jetdirect LPD (Line Printer Daemon) services.

The process consists of two parts:

- Installing TCP/IP software (if not already installed).
- Configuring a network LPD printer.

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Installing TCP/IP Software

This procedure lets you check whether you have TCP/IP installed on your Windows NT system, and to install the software if necessary.

Note You may need your Windows System distribution files or CD-ROMs to install TCP/IP components.

1 To check whether you have Microsoft TCP/IP Printing protocol and TCP/IP printing support:

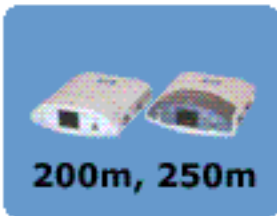
- Windows 2000-Click **Start, Settings, Control Panel**. Then double-click the **Network and Dial-up Connections** folder. Select the **Local Area Connection** for your network, then click the **File** menu and select **Properties**.

If Internet Protocol (TCP/IP) is listed and enabled in the list of components used by this connection, the necessary software is already installed. (Proceed to "[Configuring a Network Printer for Windows 2000 Systems](#)"). if not, go to step 2.

- NT 4.0-Click **Start, Settings, Control Panel**. Then double-click the **Network** option to display the *Network* dialog box.

If TCP/IP Protocol is listed in the Protocols tab, and Microsoft TCP/IP Printing is listed in the Services tab, you have already installed the necessary software. (Proceed to "[Configuring a Network Printer for Windows NT 4.0 Systems](#).") If not, go to step 2.

2 If you have not previously installed the software:



- Windows 2000-In the *Local Area Connection Properties* window, click **Install**. In the *Select Network Component Type* window, select **Protocol** and click **Add** to add the **Internet Protocol (TCP/IP)**.

Follow the instructions on the screen.

- NT 4.0-Click the **Add** button for each tab and install the **TCP/IP Protocol** and the **Microsoft TCP/IP Printing** service.

Follow the instructions on the screen.

When prompted, type the full path to the Windows NT distribution files (you may need your Windows NT workstation or server CD-ROM).

3 Enter TCP/IP configuration values for the computer:

- Windows 2000-On the General tab in the *Local Area Connection Properties* window, select Internet Protocol (TCP/IP) and click Properties.
- NT 4.0-You may be automatically prompted for TCP/IP configuration values. If not, select the Protocols tab in the *Networks* window and select TCP/IP Protocol. Then click Properties.

If you are configuring a Windows server, type the IP address, default gateway address, and subnet mask in the appropriate spaces.

If you are configuring a client, check with your Network Administrator to learn whether you should enable automatic TCP/IP configuration or whether you should type a static IP address, default gateway address, and subnet mask in the appropriate spaces.

4 Click **OK** to exit

- ### **5** If prompted, exit Windows and restart your computer for the changes to take effect.

Configuring a Network Printer for Windows 2000 Systems

Set up the default printer by performing the following steps.

- ### **1** Verify that the Print Services for Unix is installed (required for LPR port availability):

- a. Click **Start, Setup, and Control Panel**. Double-click the **Network and Dial-up Connections** folder.
 - b. Click the **Advanced** menu and select **Optional Networking Components**.
 - c. Select and enable **Other Network File and Print Services**.
 - d. Click **Details**, and verify that **Print Services for Unix** is enabled. If not, enable it.
 - e. Click **Okay**, and then **Next**.
- 2 Open the Printers folder (from the Desktop, click **Start, Settings, and Printers**).
 - 3 Double-click **Add Printer**. From the Add Printer Wizard welcome screen, click **Next**.
 - 4 Select **Local printer**, and disable automatic detection for Plug and Play printer installation. Click **Next**.
 - 5 Choose **Create a new port**, and select **LPR Port**. Click **Next**.
 - 6 In the *Add LPR compatible printer* window:
 - Enter the DNS name or IP address of the HP Jetdirect print server.
 - Enter (in lower case) **raw, text, or auto** for the name of the printer or print queue on the HP Jetdirect print server.

Then click **OK**.

Note The HP Jetdirect print server treats text files as unformatted text or ASCII files. Files that are raw are formatted files in PCL, PostScript, or HP-GL/2 printer languages.

For HP Jetdirect external print servers with three ports, use raw1, raw2, raw3, text1, text2, text3 or auto1, auto2, auto3 to specify the port.

- 7 Select the Manufacturer and Printer model. (If necessary, click **Have Disk** and follow the instructions to install the printer driver.) Click **Next**.
- 8 Choose to keep the existing driver, if prompted. Click **Next**.
- 9 Enter a printer name, and choose whether this printer will be the default printer. Click **Next**.
- 10 Choose whether this printer will be available to other computers. If shared, enter a share name that identifies the printer to other users. Click **Next**.

- 11 If desired, enter a location and other information for this printer. Click **Next**.
- 12 Choose whether to print a test page, and click **Next**.
- 13 Click **Finish** to close the wizard.

Configuring a Network Printer for Windows NT 4.0 Systems

At the Windows NT 4.0 system, set up the default printer by performing the following steps.

- 1 Click **Start**, select **Settings**, and click **Printers**. The *Printers* window opens.
- 2 Double-click **Add Printer**.
- 3 Select **My Computer**, then click **Next**.
- 4 Click **Add Port**.
- 5 Select **LPR Port**, and click **New Port**.
- 6 In the *Name or address of server providing lpd* box, type the IP address or name of the HP Jetdirect print server.

Note NT clients can enter the IP address or name of the NT server that is configured for LPD printing.

- 7 In the *Name of printer or print queue on that server* box, type (in lower case) *raw*, *text*, or *auto*. Then click **OK**.

The HP Jetdirect print server treats "text" files as unformatted text or ASCII files. Files that are "raw" are formatted files in PCL, PostScript, or HP-GL/2 printer languages.

Note For HP Jetdirect external print servers with three ports, use *raw1*, *raw2*, *raw3*, *text1*, *text2*, *text3* or *auto1*, *auto2*, *auto3* to specify the port.

- 8 Ensure that the port is selected in the *Add Printer* list of the available ports, then click **Next**.
- 9 Follow the remaining instructions on the screen to complete the configuration.

Verifying the Configuration

From within Windows NT, print a file from any application. If the file prints correctly, the configuration was successful.

If the print job is not successful, try printing directly from DOS using the following syntax:

```
lpr -S<ipaddress> -P<queuename> filename
```

where `ipaddress` is the IP address of the print server, `queuename` is the name "raw" or "text" and `filename` is the file you wish to print. If the file prints correctly, the configuration was successful. If the file does not print, or prints incorrectly, see the section on [troubleshooting](#) the print server."

Printing from Windows Clients

If the LPD printer on the NT/2000 server is shared, Windows clients can connect to the printer on the NT/2000 server using the Windows Add Printer utility in the Printers folder.

Next topic: [LPD on MacOS systems](#)

LPD on Mac OS Systems



LaserWriter 8 version 8.5.1 or higher is required in order to support IP printing on computers running any of the following:

- Mac OS 8.1 or higher
- Mac OS 7.5 through Mac OS 7.6.1
- Desktop Printer Utility 1.0 or later

Note IP printing in LaserWriter 8 is not available on Mac OS 8.0.

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Assigning an IP Address

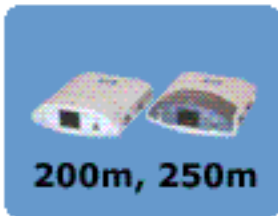
Before you can set up a printer for LPR printing, assign an IP address to the printer or print server. Use the HP LaserJet Utility to configure the printer IP address as follows:

- 1 Double-click **HP LaserJet Utility** in the HP LaserJet folder.
- 2 Click the **Settings** button.
- 3 Select **TCP/IP** from the scrolling list and then click **Edit**.
- 4 Select the desired option. You can automatically obtain the TCP/IP configuration from either the DHCP server or the BOOTP server, or you can manually specify the TCP/IP configuration.

Setting Up Mac OS

To configure a computer for LPR printing, do the following:

- 1 Launch the *Desktop Printer Utility*.
- 2 Select **Printer (LPR)** and click **OK**.
- 3 In the *PostScript Printer Description (PPD) File* section, click **Change...** and select the PPD for your printer.
- 4 In the *Internet Printer* or the *LPR Printer* section, depending on your version of the Desktop Printer Utility, click **Change....**
- 5 Enter the printer's IP address or domain name for *Printer Address*.
- 6 Enter the queue name, if used. Otherwise, leave it blank.



Note The queue name is typically raw. For a three-port HP Jetdirect external print server, the name should be raw1, raw2, or raw3 depending on the port to which the printer is attached.

- 7** Click **Verify** to verify that the printer was found.
- 8** Click **OK** or **Create**, depending on your version of the Desktop Printer Utility.
- 9** Go to the **File** menu and select **Save** or use the resulting save dialog, depending on your version of the Desktop Printer Utility.
- 10** Enter a name and location for the desktop printer icon and click **OK**. The default name is the printer's IP address, and the default location is on the desktop.
- 11** Exit the program.

For the latest information on using the HP Jetdirect LPD services from Mac OS systems, search for "LPR printing" at Apple Computer's Tech Info Library web site at <http://til.info.apple.com>.

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FTP Printing

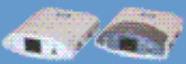
Introduction

FTP (File Transfer Protocol) is a basic TCP/IP connectivity utility to transfer data between systems. FTP printing is a way to use FTP to send print files from a client system to an HP Jetdirect-connected printer. In an FTP printing session, the client connects and sends a print file to the HP Jetdirect FTP server which in turn passes the print file to the printer.

The HP Jetdirect FTP server can be enabled or disabled through a configuration tool, such as Telnet (see [TCP/IP Configuration](#)) or the embedded web server (see [Using the Embedded Web Server](#)).

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Requirements

FTP printing described here requires the following:

- HP Jetdirect print servers with firmware version x.20.01 or later.
- TCP/IP client systems with FTP that complies with RFC 959.

Note For the most recent list of tested systems, visit the HP Customer Care Online at

http://www.hp.com/support/net_printing

Print Files

The HP Jetdirect FTP server transfers print files to the printer but does not interpret them. For proper printing, print files must be in a language recognized by the printer (such as PostScript, PCL, or unformatted text). For formatted print jobs, you must first print to a file from your application using the driver for the selected printer, then transfer the print file to the printer through an FTP session. For formatted print files, use binary (image) type transfers.

Using FTP Printing

FTP Connections

Similar to standard FTP file transfers, FTP printing uses two TCP connections: a control connection and a data connection.

Once an FTP session is opened, it remains active until either the client closes the connection or the data and control connections are idle for a time that exceeds the idle timeout period (default is 270 seconds). The idle timeout can be set through various TCP/IP configuration tools, such as BOOTP/TFTP, Telnet, printer's control panel (see [TCP/IP Configuration](#)), the embedded web server (see [Using the Embedded Web Server](#)), or management software.

Control Connection

Using standard FTP, a control connection is opened by the client to the FTP server on the HP Jetdirect print server. FTP control connections are used to exchange commands between the client and the FTP server. The HP Jetdirect print server supports up to four control connections (or FTP sessions) simultaneously. If the number of allowed connections is exceeded, a message indicating that service is not available will be displayed.

FTP control connections use TCP port 21.

Data Connection

A second connection, a data connection, is created each time a file is transferred between the client and the FTP server. The client controls the creation of a data connection by issuing the commands that require a data connection (such as FTP `ls`, `dir` or `put` commands).

Although the `ls` and `dir` commands are always accepted, the HP Jetdirect FTP server supports a single data connection for printing at a time.

The transmission mode for an FTP data connection with the HP Jetdirect print server is always in stream mode, which marks the end-of-file by closing the data connection.

Once a data connection is established, the file transfer type (ASCII or binary) can be specified. Clients may attempt to autonegotiate a transfer type, and the default transfer type depends on the client system (for example, Windows NT may default to ASCII, while UNIX may default to binary). To specify the transfer type, enter the `bin` or `ascii` command at the FTP prompt.

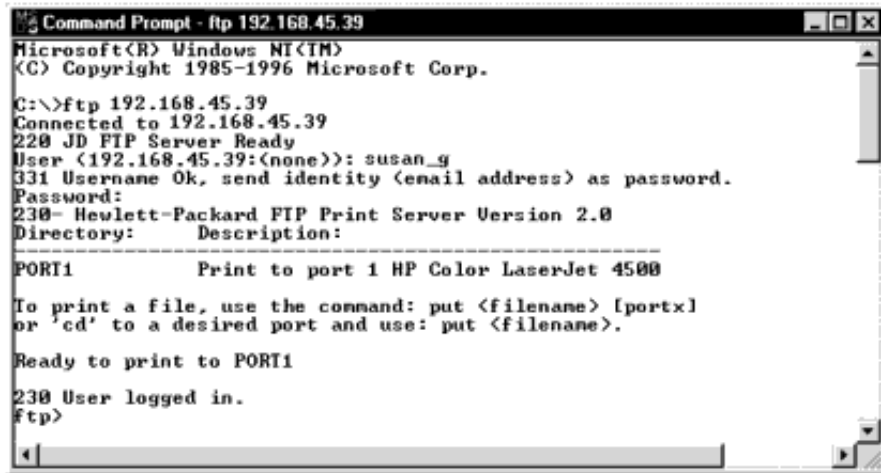
FTP Login

To start an FTP session, enter the following command from a MS-DOS or UNIX command prompt:

```
ftp <IP address>
```

where `<IP address>` is the valid IP address or node name configured for the HP Jetdirect print server. See [FTP Login Example](#)

Figure 5.1



```
Microsoft(R) Windows NT(TM)
(C) Copyright 1985-1996 Microsoft Corp.

C:\>ftp 192.168.45.39
Connected to 192.168.45.39
220 JD FTP Server Ready
User (192.168.45.39:(none)): susan_g
331 Username Ok, send identity (email address) as password.
Password:
230- Hewlett-Packard FTP Print Server Version 2.0
Directory:      Description:
-----
PORT1          Print to port 1 HP Color LaserJet 4500

To print a file, use the command: put <filename> [portx]
or 'cd' to a desired port and use: put <filename>.

Ready to print to PORT1

230 User logged in.
Ftp>
```

FTP Login Example

If the connection is successful, a Ready message will be displayed.

After a successful connection, the user is prompted for a login name and password. The default is the client's login name. The Jetdirect FTP server will allow any user name. Passwords are ignored.

If login is successful, a message "230" will be displayed on the client system. In addition, the available HP Jetdirect ports for printing will be displayed. HP Jetdirect internal print server cards provide a single port (Port 1). HP Jetdirect external print servers with multiple ports will display all available ports, with Port1 the default port. To change ports, use the FTP `cd` (change directory) command. For a typical FTP printing session, see "[Example of an FTP Session.](#)"

Ending the FTP Session

To end an FTP session, type `quit` or `bye`.

Note Prior to ending an FTP session, a [Ctrl-C] command is recommended to ensure the data connection is closed.

Commands

[User Commands for HP Jetdirect FTP Server](#) summarizes commands available to the user during an FTP printing session.

Table 5.1 User Commands for HP Jetdirect FTP Server

Command	Description
user <username>	<username> specifies a user. Any user will be accepted and can print to the selected port.
cd <port#>	<port#> selects a port number for printing. For HP Jetdirect single-port print servers, only port1 is available. For multiport print servers, specify port1 (default), port2, or port3.
cd /	/ specifies the root directory of the HP Jetdirect FTP server.
quit	quit or bye terminates the FTP session with the HP Jetdirect print server.
bye	
dir	dir or ls displays the contents of the current directory. If this command is typed in the root directory, a list of available ports for printing is displayed. For multiport print servers, the available ports for printing are PORT1 (default), PORT2, and PORT3.
ls	
pwd	Displays the current directory or the current Jetdirect printing port.
put <filename>	<filename> specifies the file to send to the selected HP Jetdirect print server port. For multiport print servers, a different port can be specified in the command: put <filename> <port#>
bin	Configures an FTP binary (image) file transfer.
ascii	Configures an FTP ASCII file transfer. HP Jetdirect print servers support only non-print format control for character transfers (standard values for spacing and margins are used).
[Ctrl-C]	Press the [Ctrl] and [C] keyboard keys simultaneously to abort the FTP service command and any transfer of data. The data connection is closed.

<code>rhelph</code> <code>remotehelp</code>	This command depends on your client system (use <code>rhelph</code> on UNIX, or <code>remotehelp</code> on Windows NT/2000) and displays a list of FTP system commands supported by the print server. (Note: the commands displayed are <i>not</i> user commands. User-accessible commands depend on the client's FTP system.)
--	--

Example of an FTP Session

This is an example of a typical FTP printing session:

```
C:\> ftp 192.168.45.39
```

```
Connected to 192.168.45.39.
```

```
220 JD FTP Server Ready
```

```
User <192.168.45.39:<none>>: susan_g
```

```
001 Username Ok, send identity <email address>  
as password
```

```
Password:
```

```
230- Hewlett-Packard FTP Print Server Version  
2.0
```

```
Directory: Description:
```

```
-----  
-----
```

```
PORT1 Print to port 1 HP color LaserJet 4500
```

```
To print a file, use the command: put  
<filename> [portx]
```

```
or cd to a desired port and use: put  
<filename>.
```

```
Ready to print to PORT1
```

```
230 User logged in.
```

```
ftp> pwd
```

```
257 "/" is current directory. <"default port  
is : /PORT1> HP Color LaserJet 4500"
```

```
ftp> cd port1
```

250 Changed directory to "/PORT1"

ftp> **pwd**

257 "/PORT1" is current directory. "HP Color LaserJet 4500"

ftp> **bin**

200 Type set to I. Using binary mode to transfer files.

ftp> **put d:\atlas\temp\ftp_test.ps**

200 PORT command successful.

150 Opening BINARY mode data connection

226- Ready

226- Processing job

226 Transfer complete

31534 bytes sent in 0.04 seconds <788.35 Kbytes/sec>

ftp> **quit**

221 Goodbye

C:\>

Security Features



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Security features are provided that can help to minimize unauthorized access to network configuration parameters and other data stored on HP Jetdirect print servers. The features may differ depending on the version of firmware resident on the print server.

CAUTION Although these features can help to minimize unauthorized access to stored data and configuration parameters on HP Jetdirect print servers, the prevention of unauthorized access cannot be guaranteed.

For advanced security needs, contact HP Consulting services.

[Summary of HP Jetdirect Security Features](#) summarizes the basic security features provided with HP Jetdirect print servers (firmware version x.21.01 or greater).

Note For network management applications, HP Jetdirect print servers support SNMP v1 (Simple Network Management Protocol) and standard MIB-II (Management Information Base) objects.

Table 6.1 Summary of HP Jetdirect Security Features

IP Administrative Password	
	<ul style="list-style-type: none">• Used by Telnet and the Embedded Web Server to control access to HP Jetdirect configuration parameters.• Up to 16 alphanumeric characters may be used.• Configured on the HP Jetdirect print server using TFTP (TCP/IP Configuration), Telnet (TCP/IP Configuration), or Embedded Web Server (Using the Embedded Web Server) services. Up to 16 alphanumeric characters are allowed.
IP Host Access List	

- Specifies up to 10 host systems, or networks of host systems, that are allowed access to the HP Jetdirect print server and the attached network device.
- Access is generally limited to host systems specified in the list.
- Host systems that use HTTP (for example, using the Embedded Web Server or IPP) are not checked against entries in the Access List and are allowed access.
- If the list is empty, then all hosts are allowed access.
- Configured on the HP Jetdirect print server using TFTP ([TCP/IP Configuration](#)), Telnet ([TCP/IP Configuration](#)), Embedded Web Server ([Using the Embedded Web Server](#)), or management software.

Network Protocol Control

- Protocols on HP Jetdirect print servers can be enabled or disabled. By disabling unused network protocols, unauthorized access through applications that use these protocols can be prevented.

SNMP Set Community Name (IP/IPX)

- A password on the HP Jetdirect print server that allows incoming SNMP Set commands (for example, from management software) to write (or *set*) HP Jetdirect configuration parameters.
- The factory-default Set Community Name is "public" or "internal". For a user-assigned Set Community Name, SNMP Set commands must contain the user-assigned name, which is authenticated by the print server before the command is performed.
- Authentication of SNMP Set commands are further restricted to systems identified on the host access list.
- For multiport Jetdirect print servers, the port intended for SNMP Set commands can be specified by a digit after the community name (separators "." and ":" are accepted). For example, if the HP Jetdirect print server supports at least two ports, the following names would be used with port 2: password2, password.2, password:2. Names with no digit, or outside the range of ports, will default to port 1. For example, for an HP Jetdirect print server with two ports, the following names will default to port 1: password, password1, password8.

- Configured on the HP Jetdirect print server using TFTP ([TCP/IP Configuration](#)), Telnet ([TCP/IP Configuration](#)), Embedded Web Server ([Using the Embedded Web Server](#)), or Management application services.

HP Web JetAdmin Password and Profiles

- Configured on the HP Jetdirect print server using HP Web JetAdmin and HP-proprietary SNMP MIB (Management Information Base) objects. For instructions, refer to the HP Web JetAdmin online help.
- HP Web JetAdmin provides access control through User Profiles. User Profiles allow password protection for individual profiles and controlled access to HP Jetdirect and printer features. For more information, refer to the HP Web JetAdmin online help.

Printer Control Panel Lock

- Selected HP printers provide a control panel lock that prevents access to HP Jetdirect internal print server configuration parameters. In many cases, this lock may be set remotely by management applications (such as HP Web JetAdmin). To determine whether your printer supports a control panel lock, refer to your printer documentation.

Using Security Features

Access to HP Jetdirect configuration parameters can be controlled through combined use of the available security features. [Settings for Access Control](#) provides examples of various settings and the associated level of access control.

Table 6.2 Settings for Access Control

Settings	Level of Access Control

<ul style="list-style-type: none"> • Embedded Web Server or Telnet enabled • Administrative Password not set • Host Access List empty 	<p>No access control. If the Embedded Web Server or Telnet are enabled on the HP Jetdirect print server, any system can access the HP Jetdirect print server configuration parameters through the embedded web server or telnet.</p>
<ul style="list-style-type: none"> • HP Web JetAdmin password set • User-specified SNMP Set Community Name set 	<p>Limited access control. HP Web JetAdmin users may access the HP Jetdirect parameters with:</p> <ul style="list-style-type: none"> • HP Web JetAdmin password, and • the SNMP Set Community Name. <p>But access via Embedded Web Server or Telnet may be unrestricted.</p>
<ul style="list-style-type: none"> • Administrative Password set • Host Access List contains entries 	<p>Limited access control. If the Administrative Password is known, access is limited to:</p> <ul style="list-style-type: none"> • systems specified in the Host Access List, or • systems that use HTTP (Embedded Web Server or IPP)
<ul style="list-style-type: none"> • Embedded Web Server and Telnet are disabled at power-on (for example, via a downloaded TFTP configuration file) • HP Web JetAdmin password set • User-specified SNMP Set Community Name set 	<p>Significant access control. With the Embedded Web Server and Telnet disabled, access to HP Jetdirect parameters requires the user-specified HP Web JetAdmin password and SNMP Set Community Name from a Web JetAdmin system.</p>



Troubleshooting for HP Jetdirect 200m and 250m

The main body of this troubleshooting procedure will diagnose faults in the print server *hardware*; such diagnoses are the bedrock of sound troubleshooting. There are, however, a couple of situations that may occur during *installation* of a network printer that allow for a quick correction. We mention these first in the section below; if they don't correspond to the problem you are seeing with your print server, proceed to the hardware troubleshooting pages.

We also discuss a few tools and techniques that you may find useful, both for troubleshooting and for the general setup and maintenance of your print server.

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 - [Installation fails \(installer can't find printer driver\)](#)
 - [Installed printer stops working \(DHCP problems\)](#)
 - [Computer stops connecting to network \(possible DHCP problem\)](#)
- [Hardware Troubleshooting](#)
- [Some Handy Tools](#)
 - [Install Network Printer Wizard \("the installer"\)](#)
 - [Embedded web server](#)
- [Some Useful Techniques](#)
 - [Printing a configuration page](#)
 - [Setting an IP address](#)
 - [Performing a cold reset \(reset to factory defaults\)](#)

Installation Troubleshooting: Common Situations

Though the following paragraphs don't cover all of the problems that may occur during installations, the few that we discuss are common and may match your situation. If these don't look like they apply to your situation, proceed with [hardware troubleshooting](#)

Installation fails (installer can't find printer driver)

If the network printer [installer program](#) (the Install Network Printer Wizard) can't find the right printer driver files to install on your

computer, the installation will not complete successfully. This is usually a problem if you are running the installer from the HP Jetdirect CD (the CD that came in the print server box if you bought your printer and print server separately). That installer is a general-purpose installer that works with virtually any HP printer and print server, and consequently doesn't know the details about drivers for any particular printer.

Any printer that can use the HP Jetdirect 200m and 250m print servers comes with its own CD, which contains a similar installer. There's a significant difference, though: the installer on the printer's CD knows where to find the printer driver (it's right there on the CD).

So if your installation fails and you've used the Jetdirect CD, try it again using the printer's CD. Alternatively, if the printer's CD isn't handy, you can [download the driver](#) from HP's web site; then use the installer on the Jetdirect CD, and point to the driver files you downloaded when the installer asks for them.

Installed printer stops working (DHCP problems)

If you have successfully installed your network printer and later find that you can't print to it, you may have a problem related to DHCP (the Dynamic Host Configuration Protocol).

In a DHCP environment, a DHCP server allocates IP addresses from a pool as they are needed by computers and printers on the network. DHCP is common in medium-to-large networks in office settings, and also in Internet connections via telephone modem, cable modem, or DSL. DHCP-supplied addresses are *dynamic* -- that is, they can change -- and may cause problems for computers and printers, which expect IP addresses to be static.

To determine whether your print server is using a DHCP-supplied address, use one of these methods:

- *Print a [configuration page](#).* Check the Config By parameter in the TCP/IP section.
- *Use the [embedded web server](#).* Check the IP Configuration Method entry in the TCP/IP section under the Networking tab.

If your print server acquired its IP address via DHCP, it may have changed its address since you set up the printer; this would make the printer unavailable. For instance, if someone unplugged the printer that held the print server, or if the power in your building went out, the print server may have acquired a different IP address when the power was re-applied. You can find out whether your IP address has changed by comparing the original IP address of your print server with the address shown on the configuration page (IP Address parameter in the TCP/IP

section) or the in the embedded web server (IP address entry in the TCP/IP section under the Networking tab).

There are two ways you can solve the problem of a changing IP address:

- *Re-install the network printer.* Find the print server's new IP address (from the configuration page you just printed, or by using the embedded web server). Then run [the installer](#) again, specify that you want to search for your printer by address (in one of the first few dialog boxes), and enter the new IP address. Then follow the instructions on the rest of the screens to complete the installation.

Note that this may be a short-term solution; you will have to repeat it if the IP address changes again.

- *[Configure the print server with a static IP address.](#)* (You should consult with your network administrator before you do this, and notify other printer users of any changes you make.) Use the [embedded web server](#) to change the IP Configuration Method to Manual, and then specify a new, static IP address. Your network administrator will be able to provide a suitable IP address. Once you have set the new IP address, re-install the network printer, as described in the preceding paragraphs.

Computer stops connecting to network (possible DHCP problem)

A DHCP problem with the print server could cause a computer to be unable to connect to the network. If a small local network connects to the Internet using DHCP-supplied IP address, and the number of IP addresses allocated for the local network is small, there are some circumstances in which a print server can "steal" the last DHCP-supplied IP address, and leave a computer with no address for connecting to the network. To make sure that this will not happen with your print server, you can configure the print server with a static IP address, as described in the last paragraph of the preceding section. (If this doesn't solve your computer's connection problem -- there are several possible causes -- at least it assures that the print server is not causing it.)

Hardware Troubleshooting

If you suspect a hardware fault with your print server, or if the installation problems described above don't seem to apply to your situation or to fix the problem, [click here to continue](#) with the hardware troubleshooting procedure.

Some Handy Tools

The installer

The network printer installer, known formally as the Install Network Printer Wizard, provides an easy way to configure your print server with a network address and install the attached printer on your Windows computer. The installer resides on the HP Jetdirect CD; in addition, if your printer works with a Jetdirect 200m or 250m print server, your printer's CD contains a similar installer that will also handle network printer installation. We recommend that you use the printer's CD if it is available, since the installer on that CD already knows where to find the printer driver that it needs for installation.

To use the installer, insert the CD into the CD drive of your Windows computer. The CD's setup program should start automatically; if it doesn't, open the CD in the Windows Explorer and double-click on SETUP.EXE. Several buttons will appear on the screen; click on the Install button to start the installation. Follow the instructions on the screens that appear until you have completed the installation.

The embedded web server

Each Jetdirect 200m or 250m print server contains an embedded web server. This acts like a small web site that allows you to configure various parameters of the print server, such as an IP or IPX address. You use your standard web browser to view and set these parameters.

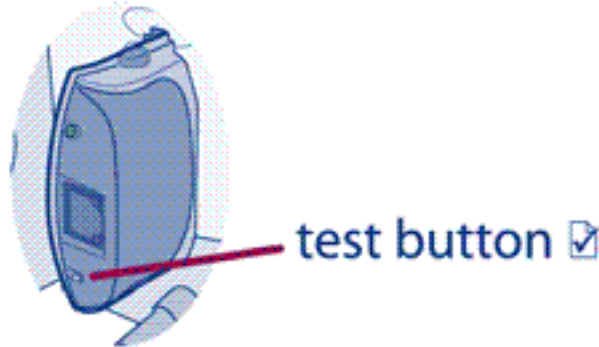
To use the print server's embedded web server, open your browser and enter the print server's IP address as the URL. (Most browsers will take a simple IP address; if yours doesn't, put an `http://` before the IP address.) If you don't know your print server's IP address, [print a configuration page](#) -- the IP address will be listed in the TCP/IP section.

The embedded web server's screens should be reasonably self-explanatory, and a little exploration will probably show you what you need to know. (For full details on the embedded web server, [click here](#).) All entries show the current values of the print server's parameters, and you can change those values by entering new ones (if your network administrator has allowed full access to them). Note that if you change the print server's IP address, you will lose the connection to the print server. You can reconnect by pointing your browser at the new IP address.

Some Useful Techniques

Printing a configuration page

To print a configuration page, press the Test button on the print server.



This will print out the current value of the print server's configuration parameters on the attached printer.

Setting an IP address

The easiest way to set an IP address on the print server is to use the embedded web server. (You should consult with your network administrator before you make any changes to the print server's configuration, and notify other users of any change you will make.)

To set an IP address:

1. Open your browser and enter the print server's IP address as the URL. (If you don't know the IP address, you can find it by [printing a configuration page](#).)
2. Click on the Networking tab in the page that appears.
3. On the Networking page, make sure that TCP/IP is selected.
4. Set the IP Configuration Method to Manual.
5. Enter the new IP address in the IP Address box.

Note that you will lose your connection to the embedded web server when you change the IP address. To re-establish the connection, enter the new IP address in your browser's URL field.

Performing a cold reset (resetting to factory defaults)

Once you configure the HP print server, the configuration settings are retained in memory unless you manually reset them to factory defaults.

To reset the print server configuration to factory defaults, follow these

steps:

- 1. Make sure that the printer's power is on.**
- 2. Unplug the print server from the printer.**
- 3. While holding down the Test button on the print server, plug the print server back into the printer; continue to hold down the Test button for about five seconds. Any user-configured settings will be erased.**



Troubleshooting Overview for HP Jetdirect 200m and 250m

The questions below will help you troubleshoot your print server quickly. Just answer each question in turn. For each question:

- If your answer is Yes, go on to the next question.
- If your answer is No, there is a problem. Click on the No button for a procedure to solve the problem. After you've solved the problem, the troubleshooting procedure may bring you back to this page.
- If you're not sure of the answer, or if you don't understand the question, click on the ??? button for more detailed information about the question.

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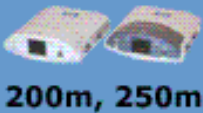
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At the bottom of this page are links to some additional topics related to troubleshooting the print server.

If you wish to change an answer, you can click on this Reset button to return the page to its original state. (The Reset button stays inactive until you have clicked on at least one No or ??? button.)

Reset

Please answer the questions below in the order listed.



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1 Is your printer ON and ONLINE?

If Yes, continue with the next question.

No

???

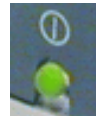


2 Is your print server's Status light ON (solid green)?

If Yes, continue with the next question.

No

???



3 Is one of the print server's 10/100 link lights ON (solid green)?

If Yes, continue with the next question.

No

???



4 Can you print a Jetdirect configuration page?

Yes

No

???

Related topics:

[Interpreting the HP Jetdirect 200m or 250m configuration page](#)

[Interpreting the lights on the HP Jetdirect 200m or 250m print server](#)

[Resetting the HP Jetdirect 200m or 250m print server to factory defaults \(cold reset\)](#)



ON and ONLINE?

The first step in troubleshooting your print server is to make sure that the attached printer is ready to receive a print job from the print server. To do this, you check the printer's lights or control panel to see whether it is ON and ONLINE.

If your printer's power is switched on and the printer is ready to print, click on the Yes button below to return to the Troubleshooting Overview page and continue with the next step in the troubleshooting procedure.

If the printer is not ready to print, or if you are not sure what to look for, click on the No button below to start evaluating the printer.

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Yes

No



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Is your printer ON and ONLINE?



Check the following items to make sure that your printer is online and ready to print.

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- **Is the printer plugged in and switched on?** Make sure that the printer is plugged in and switched on. If your printer has a front panel display, it should not be blank. If you have checked these items and the printer still shows no sign of being on, you may have a defective power cable, power source, or printer.
- **Is the printer online?** The ONLINE or POWER light should be lit. If it is not, press the appropriate key (such as ON LINE or GO) to place the printer online. If your printer has a front panel display, check that it says "Online" or "Ready".
- **Is the FORM FEED light on?** If your printer has a FORM FEED light and it is on, it may indicate that a print job is waiting to be printed. Take the printer offline (if necessary), press the FORM FEED key, and then put the printer back online. If a print job starts (or continues) to print, wait for it to complete.

After looking through the list above and making any necessary changes, is your printer online now?



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Yes

No



Does your printer have a control panel display?

Is there a display panel on the front of your printer that provides messages about the printer's status?

Yes

No

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Does the control panel display on your printer show an error message?



Yes

No

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Check your printer manual.



Please refer to your printer manual for further information on what the error means and how to correct it. (Note that your printer manual may be either printed on paper or stored electronically on a CD-ROM.)

After you have resolved the printer error, if you still have problems connecting the printer to the network you can restart this troubleshooting utility. Click on the button below to return to the beginning of troubleshooting for the HP Jetdirect 200m/250m print server.

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Check your printer manual.



There appears to be a printer error. If the printer is still not online and does not show an error message on the control panel display, please refer to your printer manual for further information on how to correct the error, or for information on how to contact Hewlett-Packard technical support if you can't correct the error. (Note that your printer manual may be either printed on paper or stored electronically on a CD-ROM.)

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Check your printer manual.



There appears to be a printer error. Please refer to your printer manual for further information on how to correct the error, or for information on how to contact Hewlett-Packard technical support if you can't correct the error. (Note that your printer manual may be either printed on paper or stored electronically on a CD-ROM.)

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Troubleshooting Overview

for HP Jetdirect 200m and 250m

The questions below will help you troubleshoot your print server quickly. Just answer each question in turn. For each question:

- If your answer is Yes, go on to the next question.
- If your answer is No, there is a problem. Click on the No button for a procedure to solve the problem. After you've solved the problem, the troubleshooting procedure may bring you back to this page.
- If you're not sure of the answer, or if you don't understand the question, click on the ??? button for more detailed information about the question.

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At the bottom of this page are links to some additional topics related to troubleshooting the print server.

If you wish to change an answer, you can click on this Reset button to return the page to its original state. (The Reset button stays inactive until you have clicked on at least one No or ??? button.)

Reset

Please answer the questions below in the order listed.

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1 Is your printer ON and ONLINE?

If Yes, continue with the next question.

No

???

2 Is your print server's Status light ON (solid green)?

If Yes, continue with the next question.

No

???

3 Is one of the print server's 10/100 link lights ON (solid green)?

If Yes, continue with the next question.

No

???

4 Can you print a Jetdirect configuration page?

Yes

No

???

Related topics:

[Interpreting the HP Jetdirect 200m or 250m configuration page](#)

[Interpreting the lights on the HP Jetdirect 200m or 250m print server](#)

[Resetting the HP Jetdirect 200m or 250m print server to factory defaults \(cold reset\)](#)



Status OK? (Status light ON solid green?)

The Status light provides information on the state of the print server's power connection and on its physical connection to the network. If all connections are working correctly, the Status light should be ON solid green (bright green in color and glowing continuously, not blinking). If the connections are not working correctly, the Status light may be off, blinking green, or blinking amber.

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If your print server's Status light is ON solid green, click on the Yes button below to return to the Troubleshooting Overview page and continue with the next step in the troubleshooting procedure.

If your print server's Status light is not ON solid green, or if you are not sure what to look for, click on the No button below to start evaluating the status of the print server. Clicking the No button will also give you information on where to find the Status light and what it looks like.

Yes

No



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Is the Status light ON solid green?



Check the Status light on your print server. If all connections are working correctly, it should be ON solid green (bright green in color and glowing continuously, not blinking). If it is not ON solid green, please follow the troubleshooting steps below.

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Status light

latch button

Note: For all of the steps below, note that when you first apply power to a normally operating print server (by plugging it in to the printer's LIO slot), the Status light will slowly blink green for several seconds during self-test. When it has completed self-test, it will continue to blink green until you connect the network cable. Once the print server establishes a valid network connection, the Status light will go ON solid green; this indicates that the unit is ready for operation.

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1. Check that the printer's power cord is plugged in and that the printer is switched ON.
2. Check that the print server is seated firmly in the printer's LIO slot and that the network cable is securely connected to the print server's network connector.
3. If that doesn't cause the Status light to come on solid green, remove and re-insert the print server, as follows:
 - a. Disconnect the network cable from the print server.
 - b. Grasp and press the latch buttons (one on each side of the print server) and pull the print server out of the printer's LIO slot.



Replay

- c. Re-insert the print server into the LIO slot, making sure that it seats firmly in the slot and that the latches click into place.
- d. Re-connect the network cable to the print server's network connector.

After checking the items above and making any necessary changes, is the Status light now ON solid green?

Yes

No

What is the state of the Status light?



The behavior of the Status light indicates the status of the print server's power connection and its physical connection to the network. If the Status light on your print server is not ON solid green, find its state in the list below and click on it to continue troubleshooting.

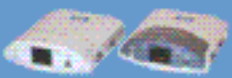
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[OFF](#)



[Blinking green](#)



[Blinking amber](#)

Status light OFF



If the Status light is OFF, your print server may be faulty. Fixing this fault requires assistance from HP Jetdirect technical support; click on the button below for information on contacting HP.

[Contact HP](#)

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Status light blinking green

The Status light should be ON solid green to indicate that print server power is OK and that the network cable is connected properly to the print server. If the Status light is blinking green, please try the steps below and make changes as necessary.

1. Make sure that the network cable is connected securely to the print server.

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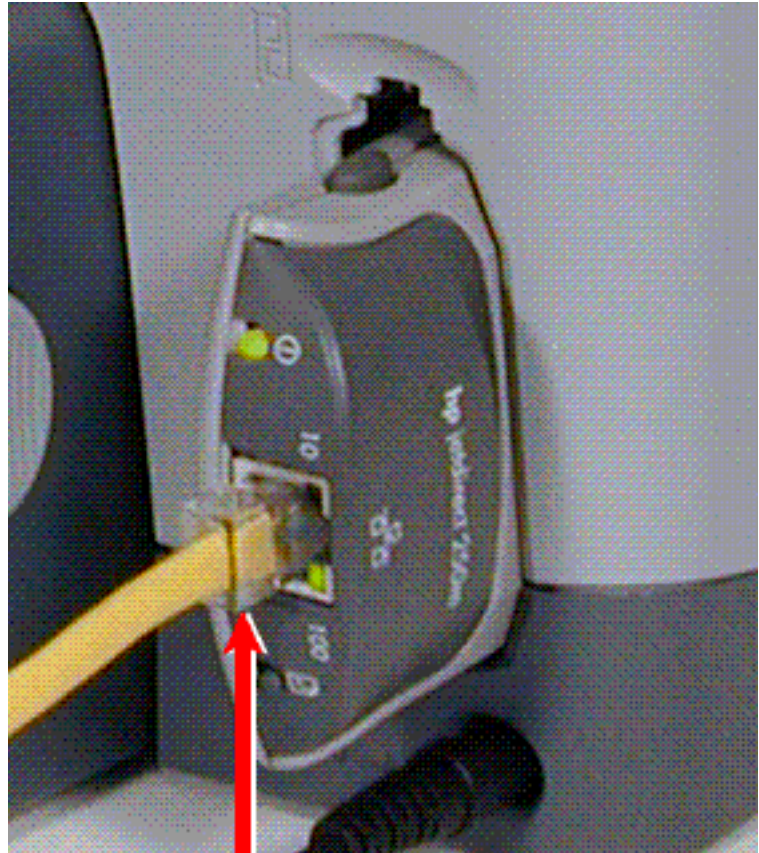
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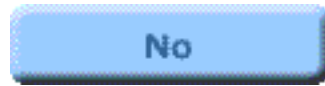
network cable

2. Check that the network cable is plugged securely into the hub/switch/router, and that the connection is set to the correct network speed.
3. Check that the LINK light is ON for the port on the hub/switch/router to which the print server is connected.
4. Your network cable may be faulty. Try a different cable.
5. If the light still does not come on, try a different port on the hub/switch/router.

Is the Status light now ON solid green?

If yes, click the Yes button to return to the Troubleshooting Overview page and continue with the next step of the troubleshooting procedure. If no,

your print server has a problem that requires assistance from HP Jetdirect technical support; click on the No button for information on contacting HP.



Status light blinking amber



Your print server has developed a fault.

It is possible that resetting the print server to its factory defaults ("cold reset") may correct the problem.

Note: Resetting the print server to factory defaults will erase any configuration that you have applied to the print server. You will need to reconfigure your print server after you perform a cold reset.

To reset the print server configuration to factory defaults, follow these steps:

1. Make sure that the printer's power is on.
2. Unplug the print server from the printer.
3. While holding down the **Test** button on the print server, plug the print server back into the printer; continue to hold down the Test button for about five seconds. Any user-configured settings will be erased.

After resetting to factory defaults, is the Status light now ON solid green?

If yes, click on the Yes button to continue with the troubleshooting procedure.

If no, your print server has a problem that requires assistance from HP Jetdirect technical support; click on the No button for information on contacting HP.

Yes

No

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The questions below will help you troubleshoot your print server quickly. Just answer each question in turn. For each question:

- If your answer is Yes, go on to the next question.
- If your answer is No, there is a problem. Click on the No button for a procedure to solve the problem. After you've solved the problem, the troubleshooting procedure may bring you back to this page.
- If you're not sure of the answer, or if you don't understand the question, click on the ??? button for more detailed information about the question.

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At the bottom of this page are links to some additional topics related to troubleshooting the print server.

If you wish to change an answer, you can click on this Reset button to return the page to its original state. (The Reset button stays inactive until you have clicked on at least one No or ??? button.)

Reset

Please answer the questions below in the order listed.


200m, 250m

1 Is your printer ON and ONLINE?

If Yes, continue with the next question.

No

???

2 Is your print server's Status light ON (solid green)?

If Yes, continue with the next question.

No

???

3 Is one of the print server's 10/100 link lights ON (solid green)?

If Yes, continue with the next question.

No

???

4 Can you print a Jetdirect configuration page?

Yes

No

???

Related topics:

[Interpreting the HP Jetdirect 200m or 250m configuration page](#)

[Interpreting the lights on the HP Jetdirect 200m or 250m print server](#)

[Resetting the HP Jetdirect 200m or 250m print server to factory defaults \(cold reset\)](#)



10/100 link OK? (10 light or 100 light ON solid green?)

The link lights -- the 10 light and the 100 light -- indicate whether the print server can establish a network link at the right speed with your hub, switch, or router. One of the link lights -- either the 10 light or the 100 light -- should be ON solid green (bright green in color and glowing continuously, not blinking) to indicate a valid link with the hub/switch/router. If there is not a valid link, then both the 10 and 100 lights will be off.

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If one of the print server's link lights is ON solid green, click on the Yes button below to return to the Troubleshooting Overview page and continue with the next step in the troubleshooting procedure.

If neither of the print server's link lights is ON solid green, or if you are not sure what to look for, click on the No button below to start evaluating the link status of the print server. Clicking the No button will also give you information on where to find the link lights, what they look like, and what the correct network connection looks like.

Yes

No



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Is one of the link lights ON (solid green)?



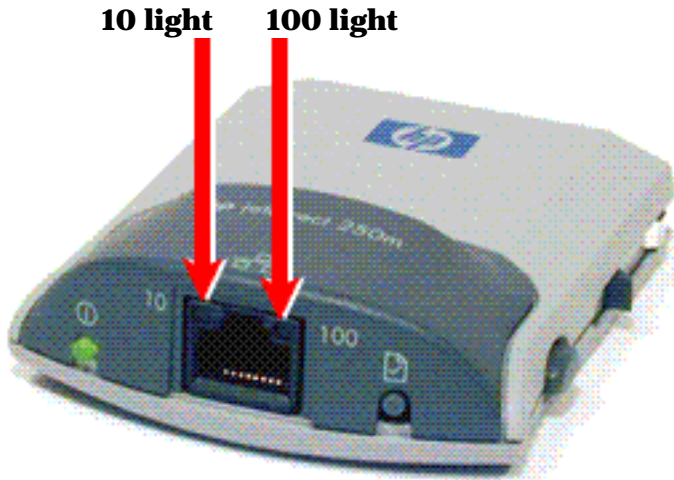
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Check the link lights on your print server; these lights are built into the network connector. One of the link lights -- either the 10 light or the 100 light, but not both -- should be ON solid green (not blinking), to indicate a valid network connection.

Is either the 10 light or the 100 light ON solid green?



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Yes

No

Link lights OFF



Try the steps below and make any necessary corrections.

1. Make sure that the network cable is connected securely to the print server.

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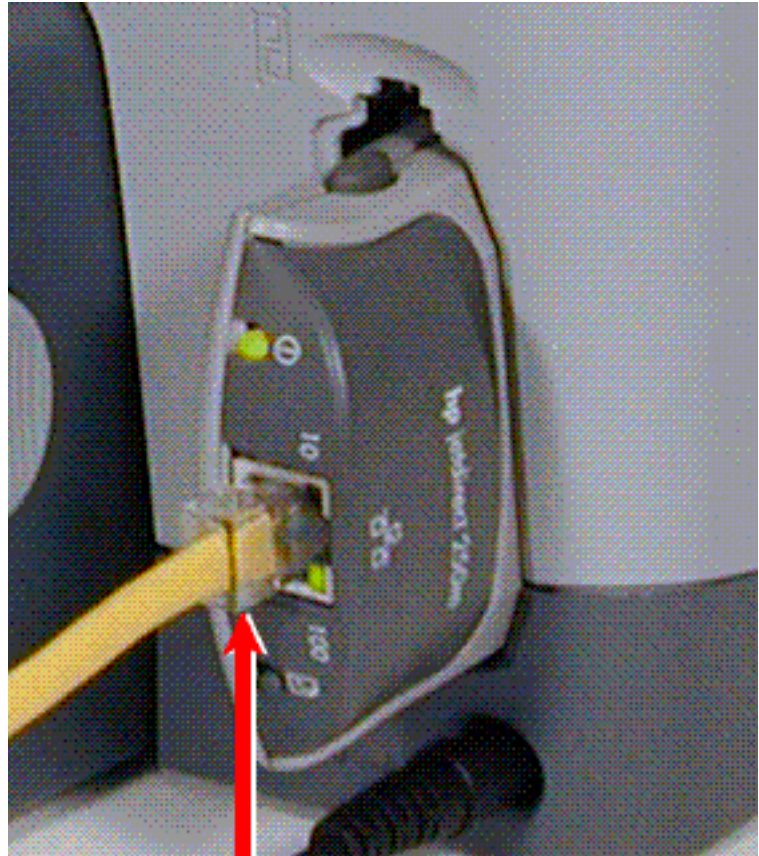
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network cable

2. Check that the network cable is plugged securely into the hub/switch/router, and that the connection is set to the correct network speed. (If your hub/switch/router is set to configure its link speed automatically, try to configure it manually for 10 Mbps or 100 Mbps only. After changing this setting, you may need to cycle power to the print server -- unplug the print server and then plug it in again.)
3. Check that the LINK light is ON for the port on the hub/switch/router to which the print server is connected.
4. Your network cable may be faulty. Try a different cable.
5. If the light still does not come on, try a different port on the hub/switch/router.

Did these steps turn ON one of the link lights?

If yes, click on the Yes button to continue the troubleshooting procedure.

If no, your print server has a problem that requires assistance from HP Jettirect technical support; click on the No button for a list of technical support telephone numbers.

Yes

No

Check the print server's I/O status.



Check the I/O status of the print server by following these steps:

1. Print a Jetdirect configuration page. To print the page, press the Test button on the print server.

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Test button

If the configuration page does not print, [click here](#) for help in getting it to print.

2. On the configuration page, check that the print server reports its status as "I/O Card Ready". The Status entry is the first entry in the General Information section, in the upper left portion of the page.

Status entry



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HP JetDirect Configuration Page (English - PCL)

HP JetDirect Configuration

Status: I/O Card Ready

Model Number: J6042A
Hardware Address: 0060B0E27E00
Firmware Version: GSE51NU
Port Select: RJ45
Port Config: 10BASE-T HALF
Auto Negotiation: On
Manufacturing ID: _J5110000F_351
Date Manufactured: 01/1970
SNMP Set Cmty Name: Not Specified

Network Statistics

Total Packets Received: 2679
Unicast Packets Received: 142
Bad Packets Received: 0
Framing Errors Received: 0
Total Packets Transmitted: 266
Unsendable Packets: 0
Transmit Collisions: 1
Transmit Late Collisions: 0

TCP/IP

Status: Ready

Host Name: NPIE27E00
IP Address: 15.29.46.29
Subnet Mask: 255.255.248.0
Default Gateway: 15.29.40.1
Config By: DHCP
DHCP Server: 15.10.164.11
TFTP Server: Not Specified
Config File: Not Specified

Domain Name: rose.hp.com
DNS Server: 15.8.148.31
WINS Server: 15.24.216.81
Syslog Server: Not Specified
Idle Timeout: 270 sec
SLP: Enabled
Access List: Not Specified
Web JetAdmin URL: Not Specified

IPX/SPX

Status: Ready

Primary Frame Type: Auto Select

Network Frame Type	Rcvd
COFFEE13 EN_11	189
0000C400 EN_802.3	561
COFFEE43 EN_SNAP	188
0000C300 EN_802.3	319

Novell/NetWare

Status: 16
NOT CONFIGURED

Node Name: NPIE27E00

NetWare Mode: Queue Server

NDS Tree Name:

NDS Context:

Attached Server:

Queue Poll Interval: 2 sec
SAP Interval: 60 sec

AppleTalk

Status: Ready

Name: HP Peripheral3
Zone: iIPS EtherTalk
Type 1: DeskWriter

Type 2:

Network Number: 401
Node Number: 14

DLC/LLC

Status: Ready

Does the page indicate "I/O Card Ready"?

Yes

No

Print server OK



At this point in the troubleshooting procedure, it appears that:

- your print server hardware is functioning correctly
- your physical network connection is functioning correctly
- the print server and the printer are connected correctly

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Click on the Continue button below to return to the Troubleshooting Overview page and continue with the next step of the troubleshooting procedure.

Continue

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I/O card not ready



Check the following items to see whether you can correct the "I/O Card Not Ready" situation. (If you have already performed these steps earlier in the troubleshooting process, you can skip them and go directly to answering the question at the end of the steps.)

1. Make sure that the network cable is connected securely to the print server.

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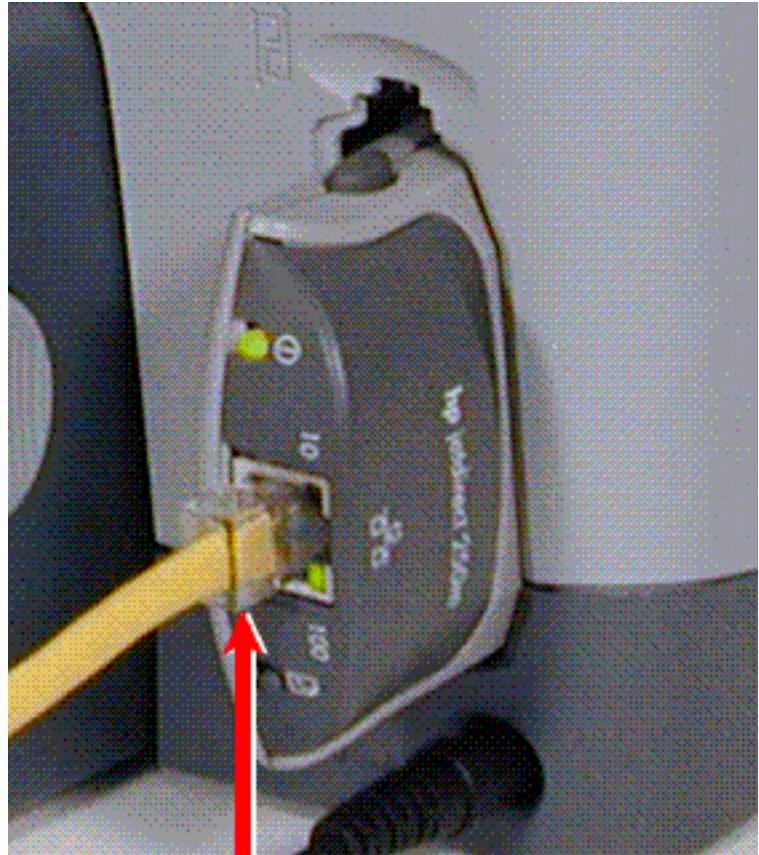
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network cable

2. Check that the network cable is plugged securely into the hub/switch/router, and that the connection is set to the correct network speed.
3. Check that the LINK light is ON for the port on the hub/switch/router to which the print server is connected.
4. Your network cable may be faulty. Try a different cable.
5. If the light still does not come on, try a different port on the hub/switch/router.

If you made any changes, please print another configuration page. Does the page show I/O Card Ready now?

Yes

No

Error messages



If your configuration page shows a status of "I/O Card Not Ready", you will see a specific error message just below the status line. This error message indicates what is preventing the print server from functioning correctly.

From the list below, please click on the error message that you see on the configuration page. This will take you to a fuller explanation of the error.

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- [08 LAN Error: INFINITE DEFERRAL](#)
- [11 LAN Error: RETRY FAULTS](#)
- [12 LAN Error: NO LINKBEAT](#)
- [Other Error](#): If the error that you see on the configuration page is not listed above, your problem requires assistance from HP Jetdirect technical support. Click on this entry for information on contacting HP.



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03 LAN Error: EXTERNAL LOOPBACK



The print server is incorrectly connected to the network or is defective.

Make sure that your print server is correctly attached to your network. In addition, check all other cabling and connectors.

For help in correcting this error, please check your print server documentation (the Jetdirect 200m/250m Setup Poster or the User's Guide on the Jetdirect CD-ROM), or contact HP Jetdirect technical support. Click on the button below for information on contacting HP.

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Contact HP

08 LAN Error: INFINITE DEFERRAL



There is a network congestion problem.

For help in correcting this error, please contact HP Jetdirect technical support. Click on the button below for information on contacting HP.

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11 LAN Error: RETRY FAULTS



There is a problem with your network cabling or with your external network configuration.

Verify that your hub/switch/router port is operating correctly.

For help in correcting this error, please contact HP Jetdirect technical support. Click on the button below information on contacting HP.

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12 LAN Error: NO LINKBEAT



When the print server is connected to a 10/100 Base-TX port, this message is displayed if the Link Beat signal is not sensed.

Check the network cable, and verify that the hub/switch/router is providing Link Beat.

For help in correcting this error, please contact HP Jetdirect technical support. Click on the button below for information on contacting HP.

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Troubleshooting Overview for HP Jetdirect 200m and 250m

The questions below will help you troubleshoot your print server quickly. Just answer each question in turn. For each question:

- If your answer is Yes, go on to the next question.
- If your answer is No, there is a problem. Click on the No button for a procedure to solve the problem. After you've solved the problem, the troubleshooting procedure may bring you back to this page.
- If you're not sure of the answer, or if you don't understand the question, click on the ??? button for more detailed information about the question.

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At the bottom of this page are links to some additional topics related to troubleshooting the print server.

If you wish to change an answer, you can click on this Reset button to return the page to its original state. (The Reset button stays inactive until you have clicked on at least one No or ??? button.)

Reset

Please answer the questions below in the order listed.


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1 Is your printer ON and ONLINE?

If Yes, continue with the next question.

No

???

2 Is your print server's Status light ON (solid green)?

If Yes, continue with the next question.

No

???

3 Is one of the print server's 10/100 link lights ON (solid green)?

If Yes, continue with the next question.

No

???

→ 4 Can you print a Jetdirect configuration page?

Yes

No

???

Related topics:

[Interpreting the HP Jetdirect 200m or 250m configuration page](#)

[Interpreting the lights on the HP Jetdirect 200m or 250m print server](#)

[Resetting the HP Jetdirect 200m or 250m print server to factory defaults \(cold reset\)](#)

Configuration page prints?



The Jetdirect configuration page is a page that the print server sends to the attached printer, both as a test of the connection between the print server and the printer, and as a display of the status of the print server's functions.

If you are able to print a Jetdirect configuration page on your printer, click on the Yes button below to continue with the troubleshooting procedure. This takes you to information about interpreting the results contained on the configuration page.

If you are not able to print a Jetdirect configuration page on your printer, or if you don't know how to print one, click on the No button below to start evaluating the print server's ability to print a configuration page. Clicking on the No button will also give you information on how to print a test page.

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Yes

No



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Can you print a Jetdirect configuration page?



To print a configuration page, press the Test button on the print server.

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Test button

A configuration page should print on the connected printer. This page displays information about the print server hardware, the firmware version, the hardware (MAC) address, the connected printer, network connectivity, network traffic, and network protocols.

Did the configuration page print successfully?

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Yes

No



Configuration page does not print, or is unreadable.

If the configuration page does not print successfully, try the steps below.

1. Make sure that the printer and the print server are powered on.
2. Make sure that the printer is Online or Ready.
3. It may be necessary to re-initialize the connection between the printer and the print server by cycling power on the print server. (Unplug the print server from the printer; then plug it back in.) Do this with the printer switched ON.

Can you now print a Jetdirect configuration page?

If yes, click on the Yes button for information on interpreting the configuration page.

If no, your print server has a problem that requires assistance from HP Jetdirect technical support; click on the No button for information on contacting HP.

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Yes

No

Interpreting the configuration page



The configuration page (also called a self-test page or configuration plot) for a print server displays [messages](#), network statistics, and status for the print server. To print a configuration page, press the Test button on the print server.

An HP JetDirect configuration page can also be viewed over the network from a management utility (such as HP Web Jetadmin), or by accessing the embedded web server on the HP JetDirect print server.

Just click on any section of the configuration page below for detailed description of that section.

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HP JetDirect Configuration Page (English - PCL)

HP JetDirect Configuration

Status: I/O Card Ready

Model Number: J6042A
Hardware Address: 0060B0E27E00
Firmware Version: GSZ51NU
Port Select: RJ45
Port Config: 10BASE-T HALF
Auto Negotiation: On
Manufacturing ID: _Z5110000F_Z51
Date Manufactured: 01/1970
SNMP Set Cmty Name: Not Specified

Network Statistics

Total Packets Received: 2679
Unicast Packets Received: 142
Bad Packets Received: 0
Framing Errors Received: 0
Total Packets Transmitted: 266
Unsendable Packets: 0
Transmit Collisions: 1
Transmit Late Collisions: 0

TCP/IP

Status: Ready

Host Name: NPIB27E00
IP Address: 15.29.46.29
Subnet Mask: 255.255.248.0
Default Gateway: 15.29.40.1
Config By: DHCP
DHCP Server: 15.10.164.11
TFTP Server: Not Specified
Config File: Not Specified

Domain Name: rose.hp.com
DNS Server: 15.8.148.31
WINS Server: 15.24.216.81
Syslog Server: Not Specified
Idle Timeout: 270 sec
SLP: Enabled
Access List: Not Specified
Web JetAdmin URL: Not Specified

IPX/SPX

Status: Ready

Primary Frame Type: Auto Select

Network Frame Type Rcvd
COFFEE13 EN_II 189
0000C400 EN_802.2 561
COFFEE43 EN_SNAP 188
0000C300 EN_802.3 319

Novell/NetWare

Status: 16
NOT CONFIGURED
Node Name: NPIB27E00

NetWare Mode: Queue Server
NDS Tree Name:

NDS Context:

Attached Server:

Queue Poll Interval: 2 sec
SAP Interval: 60 sec

AppleTalk

Status: Ready

Name: HP Peripheral3
Zone: iIPS EtherTalk
Type 1: DeskWriter
Type 2:

Network Number: 401
Node Number: 14

DLC/LLC

Status: Ready

General JetDirect Information

Provides general print server status and identification information.

Message	Description
Status	<p>Current state of the print server.</p> <ul style="list-style-type: none">• I/O Card Ready: the print server has successfully connected to the network and is awaiting data.• I/O Card Initializing: the print server is initializing the network protocols. For more information, see the status line for each protocol on the configuration page.• I/O Card Not Ready: there is a problem with the print server or its configuration. <p>An error code and message are displayed if the print server is not ready.</p>
Model Number	The model number of the HP print server (for example, J6035A).
Hardware Address	The 12-digit hexadecimal LAN hardware (MAC) address of the print server installed in or attached to the printing device. This address is assigned by the manufacturer.
Firmware Version	The firmware revision number of the print server currently installed in the printer. The format is X.NN.NN, where X is a letter that depends on the HP print server model.
Port Select	<p>Specifies the LAN port on the print server that has been detected for use:</p> <ul style="list-style-type: none">• None: the print server is not connected to the network.• RJ-45: the RJ-45 network port is connected.
Port Config	<p>Identifies the link configuration of the RJ-45 LAN port on the print server:</p> <ul style="list-style-type: none">• 10BASE-T HALF: 10 Mbps, half-duplex• 10BASE-T FULL: 10 Mbps, full-duplex• 100TX HALF: 100 Mbps, half-duplex• 100TX FULL: 100 Mbps, full-duplex• Unknown: the print server is in an initialization state.• Disconnected: a network connection has not been detected. Check network cables.
Auto Negotiation	<p>Identifies whether IEEE 802.3u Autonegotiation on the 10/100TX port is enabled (on) or disabled (off).</p> <p>On: the print server will attempt to automatically configure itself onto the network at the proper speed (10 or 100 Mbps) and mode (half or full duplex).</p>
Manufacturing ID	The manufacturing identification code for use by HP Customer Care personnel.
Date Manufactured	Identifies the date of manufacture of the HP Jetdirect print server.

SNMP Set Cmty Name	<p>Specifies whether an SNMP set community name has been configured on the print server. An SNMP set community name is a password for "write" access to SNMP control functions (SNMP SetRequests) on the print server.</p> <ul style="list-style-type: none"> • Not Specified: an SNMP set community name has not been set. • Specified: a specific SNMP set community name has been set.
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Network Statistics

Provides the current values for various network parameters monitored by the print server.

Message	Description
Total Packets Received	Total number of frames (packets) received by the print server without error. This includes broadcast, multicast packets, and packets specifically addressed to the print server. This number does not include packets specifically addressed to other nodes.
Unicast Packets Received	Number of frames specifically addressed to this print server. This does not include broadcasts or multicasts.
Bad Packets Received	Total number of frames (packets) received with errors by the print server.
Framing Errors Received	Maximum of CRC (Cyclic Redundancy Check) errors and framing errors. CRC errors are frames received with CRC errors. Framing errors are frames received with alignment errors. A large number of framing errors could indicate a cabling problem with your network.
Total Packets Transmitted	Total number of frames (packets) transmitted without error.
Unsendable Packets	Total number of frames (packets) not successfully transmitted because of errors.
Transmit Collisions	Number of frames not transmitted because of repeated collisions.
Transmit Late Collisions	Total number of frames not transmitted because a late collision occurred. A large number may indicate a cabling problem on the network.

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TCP/IP Protocol Information

Provides the current status and parameter values for the TCP/IP network protocols.

Message	Description
Status	<p>Current TCP status:</p> <ul style="list-style-type: none"> • Ready: the print server is awaiting data over TCP/IP. • Disabled: TCP/IP was manually disabled. • Initializing: the print server is searching for the BOOTP server, or trying to get the configuration file through TFTP. An additional status message may also be displayed. <p>An error code and message are displayed if the print server is not ready.</p>
Host Name	<p>The host name configured on the print server. It may be truncated.</p> <ul style="list-style-type: none"> • Not Specified: no host name was specified in a BOOTP response or TFTP configuration file. • NPIxxxxxx: the default name is NPIxxxxxx, where xxxxxx represents the last six digits of the LAN hardware (MAC) address.
IP Address	<p>The Internet Protocol (IP) address assigned to the print server. This is a required entry for its operation on a TCP/IP network. During initialization, a temporary value 0.0.0.0 is displayed. After two minutes, a default IP address 192.0.0.192 is assigned, which may not be a valid IP address for your network.</p> <ul style="list-style-type: none"> • Not Specified: an IP address is not assigned or the value is zero.
Subnet Mask	<p>The IP subnet mask configured on the print server. During initialization, a temporary value 0.0.0.0 is displayed. Depending on configuration parameters, the print server may automatically assign a usable default value.</p> <ul style="list-style-type: none"> • Not Specified: a subnet mask is not configured.
Default Gateway	<p>The IP address of the gateway used when sending packets off the local network. Only one default gateway may be configured. During initialization, a temporary value 0.0.0.0 is displayed. If not provided, the IP address of the print server is used.</p> <ul style="list-style-type: none"> • Not Specified: a default gateway is not configured.
Config By	<p>Identifies how the print server obtained its IP configuration.</p> <ul style="list-style-type: none"> • BOOTP: automatic configuration via a BOOTP server. • BOOTP/TFTP: automatic configuration via a BOOTP server and TFTP configuration file. • DHCP: automatic configuration via a DHCP server. • DHCP/TFTP: automatic configuration via a DHCP server and TFTP configuration file. • RARP: automatic configuration via the Reverse Address Resolution Protocol. • User Specified: manual configuration via Telnet, the printer's control panel, HP Web JetAdmin, embedded web server, or other method. • Default IP: the default IP address was assigned. This address may not be a valid address for your network. • Not Configured: the print server was not configured with IP parameters. Verify that TCP/IP is enabled, or check for error status.

<p>BOOTP Server or DHCP Server or RARP Server</p>	<p>Displayed if BOOTP, DHCP, or RARP is used for TCP/IP configuration. It specifies the IP address of the system that responds to the print server's request for automatic TCP/IP configuration over the network.</p> <ul style="list-style-type: none"> • Not Specified: the configuration server's IP address could not be determined or was set to zero in the response packet.
<p>BOOTP/DHCP Server</p>	<p>Displayed during initialization while the print server attempts to obtain its TCP/IP configuration from a BOOTP or DHCP server. The temporary address displayed is 0.0.0.0.</p> <ul style="list-style-type: none"> • Not Specified: the configuration server's IP address could not be determined or was set to zero in the response packet.
<p>TFTP Server</p>	<p>The IP address of the system where the TFTP configuration file is located. During initialization, the temporary address 0.0.0.0 is displayed.</p> <ul style="list-style-type: none"> • Not Specified: a TFTP server has not been not been set.
<p>Config File</p>	<p>The name of the print server's configuration file. The file pathname may be truncated to fit on two lines.</p> <ul style="list-style-type: none"> • Not Specified: a file was not specified in the BOOTP reply from the host.
<p>Domain Name</p>	<p>The Domain Name System (DNS) name of the domain in which the print server resides (for example, support.company.com). It is not the fully qualified DNS name because the host printer name is not included (for example: printer1.support.company.com).</p> <ul style="list-style-type: none"> • Not Specified: a domain name has not been configured on the print server.
<p>DNS Server</p>	<p>The IP address of the Domain Name System (DNS) server.</p> <ul style="list-style-type: none"> • Not Specified: a DNS server's IP address has not been configured on the print server.
<p>WINS Server</p>	<p>The IP address of the Windows Internet Name Service (WINS) server.</p> <ul style="list-style-type: none"> • Not Specified: a WINS server's IP address has not been configured on the print server.
<p>Syslog Server</p>	<p>The IP address of the syslog server configured on the print server.</p> <ul style="list-style-type: none"> • Not Specified: a syslog server has not been configured.
<p>Idle Timeout</p>	<p>The timeout value expressed in seconds after which the print server closes an idle TCP print data connection. Acceptable values are integers between 0 and 3600 seconds. A value of zero turns off the timeout mechanism. The default value is 270 seconds.</p>

SLP	<p>Specifies whether the print server sends Service Location Protocol (SLP) packets used by system applications for automated installation.</p> <ul style="list-style-type: none"> • Enabled: the print server sends SLP packets. • Disabled: the print server does not send SLP packets.
Access List	<p>Identifies whether a host access control list is configured on the print server. A host access control list specifies the IP address of individual systems, or IP network of systems, that are allowed access to the print server and device.</p> <ul style="list-style-type: none"> • Specified: a host access list is configured on the print server. • Not Specified: a host access list is not configured on the print server. All systems are allowed access.
Web JetAdmin URL	<p>If the print server is found on the network by HP WebJetAdmin, the URL of the host system used for HP WebJetAdmin services is displayed. The URL is limited to two lines and may be truncated.</p> <ul style="list-style-type: none"> • Not Specified: the URL of the HP WebJetAdmin host system could not be identified or is not configured.

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IPX/SPX Protocol Information

Provides the current status and parameter values for the IPX/SPX network protocols.

Message	Description
Status	<p>Indicates the current IPX/SPX protocol status.</p> <ul style="list-style-type: none"> • Ready: the print server is awaiting data over IPX/SPX. • Disabled: IPX/SPX was manually disabled. • Initializing: the print server is registering the node address or name. An additional status message may also be displayed. <p>An error code and message are displayed if the print server is not ready.</p>
Node Name	<p>The IPX/SPX name of the print server. The default name is NPIxxxxxx, where xxxxxx is the last six digits of the LAN hardware (MAC) address. [Verify parameter location.]</p>

Primary Frame Type	<p>Specifies the frame type selection on the print server.</p> <ul style="list-style-type: none"> • Auto Select: the print server automatically senses and limits the frame type to the first one detected. • EN_II: limits the frame type to IPX over Ethernet frames. All others will be counted and discarded. • EN_802.2: limits the frame type to IPX over IEEE 802.2 with IEEE 802.3 frames. All others will be counted and discarded. • EN_SNAP: limits the frame type to IPX over SNAP with IEEE 802.3 frames. All others will be counted and discarded. • EN_802.3: limits the frame type to IPX over IEEE 802.3 frames. All others will be counted and discarded.
Network	<p>The first column <i>Network</i> indicates the network number associated with each protocol frame type used for communication between a server and the print server.</p> <ul style="list-style-type: none"> • Unknown: the print server is still trying to determine which network number to use.
Frame Type <i>EN_II</i> <i>EN_802.2</i> <i>EN_SNAP</i> <i>EN_802.3</i>	<p>The second column <i>Frame Type</i> identifies the frame type associated with each network number.</p> <p>Unless a specific frame type has been manually configured, the print server automatically determines the protocol frame type by listening to the network data being transferred over the network.</p> <ul style="list-style-type: none"> • Disabled: a specific frame type for that network has been manually configured.
Rcvd	<p>The third column <i>Rcvd</i> indicates how many packets have been received for each frame type.</p>

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Novell NetWare Protocol Information

Provides the current status and parameter values for the Novell Network protocol.

Message	Description
STATUS:	<p>Indicates the current Novell NetWare configuration status.</p> <p>READY: Indicates the HP Jetdirect print server is awaiting data.</p> <p>DISABLED: Indicates that IPX/SPX was manually disabled.</p> <p>INITIALIZING: Indicates that the print server is registering the node address or name. An additional status message may also be displayed.</p> <p>An error code and message are displayed if the print server is not ready.</p>
NODE NAME:	<p>Queue Server Mode: The print server name. This name must match a valid print server on the appropriate NetWare file server. The default name is NPIXXXXXX, where XXXXXX is the last six digits of the LAN hardware (MAC) address.</p> <p>Remote Printer Mode: The name you gave the network printer when you configured the network printer. The default name is NPIXXXXXX.</p>
NETWARE MODE:	<p>The mode used by the HP Jetdirect print server.</p> <p>QUEUE SERVER indicates that the print server receives data directly from the queue.</p> <p>REMOTE PRINTER, with the printer number following it, indicates that the print server emulates a Novell NetWare remote printer.</p> <p>If the printer is not configured, this field displays QUEUE SERVER.</p>

NDS TREE NAME:	Displays the name of the Novell Directory Services (NDS) tree for this printer. NDS is a database of objects on a NetWare network organized in a hierarchical tree structure. NOT SPECIFIED or blank: NDS is disabled.
NDS CONTEXT:	Displays the fully qualified NDS name where the HP Jetdirect print server object resides in the NDS tree. For example: CN=lj_pserver.OU=support.OU=mycity.OU=mycompany NOT SPECIFIED or blank: NDS is disabled.
ATTACHED SERVER:	The Attached Server field identifies the Jetdirect discovery method [NSQ] (Nearest Service Query) or [GSQ] (General Service Query) and the name of the proxy file server used to locate the configured bindery servers. NOT SPECIFIED or blank: A NetWare server has not been configured.
QUEUE POLL INTERVAL	(Job Poll Interval) Specifies the time interval (seconds) that the HP Jetdirect print server waits to check for print jobs in a print queue. The default is 2 seconds.
SAP INTERVAL:	Specifies the time interval (seconds) that the HP Jetdirect print server waits between Service Advertising Protocol (SAP) broadcasts on the network. The default is 60 seconds.
SERVER x:	Identifies a NetWare file server to which the HP Jetdirect print server is attached.

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AppleTalk Protocol Information

Provides the current status and parameter values for the AppleTalk network protocols.

Message	Description
Status	<p>Indicates the current AppleTalk configuration status.</p> <ul style="list-style-type: none"> • Ready: the print server is awaiting data. • Disabled: AppleTalk was manually disabled. • Initializing: the print server is registering the node address or name. An additional status message may also be displayed. <p>An error code and message are displayed if the print server is not ready.</p>
Name	The name of the printer on the AppleTalk network. A number after the name indicates that there are multiple devices with this name, and this is the Nth instance of the name.
Zone	The name of the AppleTalk network zone on which the printer is located.
Type	The type of the printer being advertised on the network. Two types can be displayed.
Network Number	The AppleTalk Network Number on which the print server is currently operating.

Node Number	<p>The AppleTalk Node Number that the print server chose for itself as part of its initialization sequence.</p> <p>Note: The AppleTalk phase 2 (P2) parameter is preconfigured on the print server.</p>
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DLC/LLC Protocol Information

Provides the current status for the DLC/LLC network protocol.

Message	Description
STATUS:	<p>Indicates the current DLC/LLC protocol status.</p> <p>READY: Indicates the HP Jetdirect print server is awaiting data.</p> <p>DISABLED: Indicates that DLC/LLC was manually disabled.</p> <p>INITIALIZING: Indicates that the print server is registering the node address or name. An additional status message may also be displayed.</p> <p>An error code and message are displayed if the print server is not ready.</p>

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Error Messages

Error Code and Message	Description
02 LAN ERROR- INTERNAL LOOPBACK	During self-test, the print server detected an internal loopback test error. The print server may be faulty. If the error persists, replace the print server.
03 LAN ERROR- EXTERNAL LOOPBACK	The print server is incorrectly connected to your network or is defective. Make sure your print server is correctly attached to your network. In addition, check the cabling and connectors.
07 LAN ERROR- CONTROLLER CHIP	Check the network connections. If the connections are intact, run the power-on self-test: turn the printer off, then on again. If the error persists, replace the print server.
08 LAN ERROR- INFINITE DEFERRAL	<p>There is a network congestion problem.</p> <p>Note: If the print server is not connected to the network, this error cannot occur.</p>

<p>09 LAN ERROR- BABBLE</p>	<p>Check the network connections. If the connections are intact, run the power-on self-test: turn the printer off, then on again. If the error persists, replace the print server.</p>
<p>0A LAN ERROR- NOSQE</p>	<p>Check the network connections. If the connections are intact, run the power-on self-test: turn the printer off, then on again. If the error persists, replace the print server.</p>
<p>0C LAN ERROR- RECEIVER OFF</p>	<p>There may be a problem with your network cabling or the print server. Check the cabling and connectors on your Ethernet network. If you cannot find a problem with your network cabling, run the power-on self-test: remove and re-attach the power module connector on the print server. If the error persists, there is a problem with the print server.</p>
<p>0D LAN ERROR- TRANSMITTER OFF</p>	<p>There may be a problem with your network cabling or the print server. Check the cabling and connectors on your Ethernet network. If you cannot find a problem with your network cabling, run the power-on self-test: remove and re-attach the power module connector on the print server. If the error persists, there is a problem with the print server.</p>
<p>0E LAN ERROR- LOSS OF CARRIER</p>	<p>Check the network connections. If the connections are intact, run the power-on self-test: remove and re-attach the power module connector on the print server. If the error persists, replace the print server.</p>
<p>10 LAN ERROR- UNDERFLOW</p>	<p>There may be a problem with your network cabling or the print server. Check the cabling and connectors on your network. If you cannot find a problem with your network cabling, run the power-on self-test: remove and re-attach the power module connector on the print server. If the error persists, there is a problem with the print server.</p>
<p>11 LAN ERROR- RETRY FAULTS</p>	<p>There is a problem with your network cabling or external network configuration. Verify operation of the hub or switch port.</p>
<p>12 LAN ERROR- NO LINKBEAT</p>	<p>With a 10Base-T or 100Base-TX port connected, Link Beat is not sensed. Check the network cable, and verify that the concentrator or hub is providing Link Beat.</p>
<p>13 NETWORK RECONFIG - MUST REBOOT</p>	<p>Reset or power cycle the print server to enable the new configuration values.</p>
<p>15 CONFIGURATION ERROR</p>	<p>The configuration information for the NetWare functions is not stored correctly on the HP Jetdirect print server. Use the installation software, embedded web server, or other tools to reconfigure the print server. If this error persists, there may be a problem with the HP Jetdirect print server.</p>
<p>16 NOT CONFIGURED</p>	<p>The HP Jetdirect print server has not been configured for NetWare. Use the installation software, embedded web server, or other tools to configure the print server for NetWare networks.</p>

17 UNABLE TO FIND SERVER	<p>(Ethernet) The HP Jetdirect print server was unable to find the NetWare print server (Remote Printer mode) or file server (Queue Server mode). (There was no response to service queries for advertising print servers or file servers that matched the configured print server or file server name.)</p> <p>Make sure that the print server or file server is running and that the print server or file server name configured on the HP Jetdirect print server matches the actual name used by the print server or file server. Also make sure that all cables and routers are functioning correctly.</p>
18 PASSWORD ERROR	<p>The HP Jetdirect print server detected that the password for the NetWare print server object is wrong. Use a NetWare utility (such as PCONSOLE) to erase the password for the print server object. When the HP Jetdirect print server logs on again, it sets a new password.</p> <p>Note: When multiple file servers are configured, the error is only displayed on the configuration page if none of the file servers are connected.</p>
19 NO QUEUE ASSIGNED	<p>The HP Jetdirect print server detected that the print server object has not been assigned any queues to service. Assign queues to the print server object using printer installation or NetWare utilities.</p> <p>Note: When multiple file servers are configured, the error is only displayed on the configuration page if none of the file servers were successfully connected.</p>
1A PRINTER NUMBER NOT DEFINED	<p>A NetWare printer number for this printer has not been configured. Assign a valid printer number to the HP Jetdirect print server. Use a NetWare utility (such as PCONSOLE), the Jetdirect embedded web server, or other tool to assign a printer number.</p>
1B PRINTER NUMBER IN USE	<p>The NetWare printer number assigned to the printer is already in use by another printer. Assign an unused printer number. This may also occur when a printer is power cycled, in which case the error goes away after the print server times out and detects the lost connection.</p>
1C PRINT SERVER NOT DEFINED	<p>The file server does not have a print server object that corresponds to the specified NetWare node name. Use printer installation software, a NetWare utility (such as PCONSOLE), or other tool to create the print server object.</p> <p>When the HP Jetdirect print server is configured for multiple file servers, the error is only displayed on the configuration page if none of the file servers made the connection.</p>
1D UNABLE TO CONNECT TO SERVER	<p>Remote Printer mode error: The HP Jetdirect print server was unable to establish an SPX connection with the NetWare print server. Make sure that the NetWare print server is running and that all cables and routers are functioning correctly.</p>
1E FAIL RESERVING PRINTER NUM	<p>The SPX connection to the print server was lost when the HP Jetdirect print server attempted to reserve the printer number. This indicates a possible network problem, or a problem with the print server. Make sure all cables and routers are functioning correctly. Try restarting the print server.</p>
1F ERR NEGOTIATING BUFFER SIZE	<p>A failure was detected when selecting the buffer size to be used when reading print data from the file server. This may indicate a network problem.</p> <p>When the HP Jetdirect print server is configured for multiple file servers, the error is only displayed on the configuration page if none of the file servers was successfully connected.</p>
20 UNABLE TO LOGIN	<p>A failure was detected when the HP Jetdirect print server tried to log onto the file server. This could be caused by the print server object not existing on the file server, or by a security check that prevents the print server from logging in.</p> <p>Make sure the file server name and print server object name are correct. Use PCONSOLE to erase the password for the print server object. Create a new print server object.</p> <p>When the HP Jetdirect print server is configured for multiple file servers, the error is only displayed on the configuration page if none of the file servers made the connection.</p>
21 UNABLE TO SET PASSWORD	<p>A failure was detected when the HP Jetdirect print server tried to set the password for the print server object. (Whenever the HP Jetdirect print server is able to log in without a password, it sets the password automatically.) This indicates a networking or security problem. Create a new print server object.</p> <p>When multiple file servers are configured, the error is only displayed on the configuration page if none of the file servers were successfully connected.</p>

22 UNABLE TO CONNECT TO SERVER	Queue Server mode error: The HP Jetdirect print server could not establish an NCP connection to the file server. Make sure that the correct file servers are connected. When multiple file servers are configured, the error is only displayed on the configuration page if none of the file servers were successfully connected.
23 UNABLE TO ATTACH TO QUEUE	A failure was detected when the HP Jetdirect print server tried to attach to one of the queues assigned to the print server object. This may be because no servers are allowed to attach to this queue. There may also be a networking or security problem. Use PCONSOLE to make sure that servers are allowed to attach to the queue, to delete the print server object from the list of queue servers if you want the HP Jetdirect print server to service other queues, or to delete the queue and create a new one (the print server object must be added to the list of queue servers). When the HP Jetdirect print server is configured for multiple file servers, the error is only displayed on the configuration page if none of the file servers made the connection.
24 PSERVER CLOSED CONNECTION	The NetWare print server requested a termination of the connection with the HP Jetdirect print server. No error exists or is indicated. Make sure the NetWare print server is running, and restart it if necessary.
25 DISCONNECTING - SPX TIMEOUT	The SPX connection to the print server was lost after the connection had been made. This indicates a possible network problem, or a problem with the print server. Make sure all cables and routers are functioning correctly. Try restarting the print server.
26 UNKNOWN NCP RETURN CODE	The HP Jetdirect print server encountered an unexpected fatal error after it had successfully connected to the file server. A wide variety of failures could produce this error message, including a downed file server or a network router failure.
27 UNEXPECTED PSERVER DATA RCVD	The print server sent some data when the HP Jetdirect print server had not given its permission to do so. This indicates a possible print server problem, possibly a software problem.
28 OUT OF BUFFERS	The HP Jetdirect print server was unable to allocate a buffer from its internal memory. This indicates all buffers are busy due possibly to heavy broadcast traffic or large amounts of network traffic directed to the print server.
29 UNABLE TO SENSE NET NUMBER	The HP Jetdirect print server has been trying for over 3 minutes to determine the NetWare protocol used on the network. Make sure that any file servers and routers are operating correctly. Make sure that the settings for NetWare frame type and source routing are correct.
2A NDS ERR: EXCEEDS MAX SERVERS	More queues were assigned than the HP Jetdirect print server can handle. Remove one or more print queues from the list to be serviced by Queue Server Mode.
2B NDS ERR: UNABLE TO LOGIN	Unable to log onto the NetWare directory tree. Make sure that the print server object is defined in the directory at the correct context. Clear the print server password using NWADMIN or similar NetWare tool.
2C NDS AUTHENTICATION ERROR	Unable to log onto the NetWare directory tree. Make sure that the print server object is defined in the directory at the correct context.
2D NDS ERR: CHANGE PSSWRD FAILED	Cannot modify the print server password to the value expected by the HP Jetdirect print server.
2E NDS SERVER PUBLIC KEY ERROR	Print Server Object Name mismatch. Unable to read the file server's public key. Verify object names, or contact the NDS administrator.
2F NDS ERR: SRVR NAME UNRESOLVD	The file server on the network cannot be located. The server may not be running at this time or a communications problem may exist.
30 NDS PRINT SERVER NAME ERROR	The HP Jetdirect print server object cannot be located in the specified NDS context.

31 NDS PS PRINTER LIST ERROR	Cannot locate a list of printers objects that should be assigned to the print server object.
32 NDS PRINTER OBJ NOTIFY ERR	The list of notification objects assigned to the printer object cannot be located.
33 NDS PRINT OBJ QUEUE LIST ERR	The list of print queues assigned to the printer objects cannot be located.
34 NDS ERR: UNRESOLVD PRNTR OBJ	The printer object cannot be located in the NDS directory.
35 NDS ERR: INVALID SRVR VERS	The current version of the NetWare file server is not supported.
36 NDS ERR: NO PRINTER OBJECTS	No printer objects are assigned to the print server object configured to this HP Jetdirect print server.
37 NDS ERR: MAX PRINT OBJECTS	Too many printer objects are assigned to the print server object. Using NetWare utilities (such as NWADMIN), reduce the number of printer objects assigned to the print server.
38 NDS ERR: NO QUEUE OBJECTS	No print queue objects are assigned to the printer objects located in the NDS directory.
39 NDS ERR: MAX QUEUE OBJECTS	Too many print queue objects are assigned to the printer. Reduce the number of queues assigned.
3A NDS ERR: UNABLE TO FIND TREE	The NDS tree cannot be located. The message may occur when the file server is not running or when a network communications problem exists.
3B NDS CONNECTION STATE ERROR	The HP Jetdirect print server cannot change the NDS connection state. Check licenses on the spooling server.
3C NDS ERR: UNRESOLVED QUEUE	The print queue object cannot be located in the specified NDS context.
3D NDS ERR: CANNOT READ Q HOST	Cannot locate the file server on the network. The server may not be running at this time or a communications problem may exist.
3E NDS PRNT SRVR PUBLIC KEY ERR	Print Server Object Name mismatch. Unable to read the print server's public key. Verify object names. Verify that the object key assigned to the HP Jetdirect print server is a print server object and not a printer or other object.
3F UNABLE TO GET NDS SRVR ADDR	The NDS server address cannot be located or accessed.
40 ARP DUPLICATE IP ADDRESS	The ARP layer has detected another node on the network using the same IP address as the print server. Extended error information below this message shows the hardware address of the other node.
41 NOVRAM ERROR	The print server cannot read the contents of its NOVRAM.

<p>42 INVALID IP ADDRESS</p>	<p>The IP address specified for the print server (through BOOTP) is an invalid IP address for specifying a single node. Check your Bootptab file for proper entries.</p>
<p>43 INVALID SUBNET MASK</p>	<p>The IP subnet mask specified for the print server (through BOOTP) is an invalid subnet mask. Check your Bootptab file for proper entries.</p>
<p>44 INVALID GATEWAY ADDRESS</p>	<p>The default gateway IP address specified for the print server (through BOOTP) is an invalid IP address for specifying a single node. Check your Bootptab file for proper entries.</p>
<p>45 INVALID SYSLOG ADDRESS</p>	<p>The syslog server IP address specified for the print server (through BOOTP) is an invalid IP address for specifying a single node. Check your Bootptab file for proper entries.</p>
<p>46 INVALID SERVER ADDRESS</p>	<p>The TFTP server IP address specified for the print server (through BOOTP) is an invalid IP address for specifying a single node. Check your Bootptab file for proper entries.</p>
<p>47 INVALID TRAP DEST ADDRESS</p>	<p>One of the SNMP trap (Trap PDU) destination IP addresses specified for the print server (through TFTP) is an invalid IP address for specifying a single node. Check your TFTP configuration file.</p>
<p>48 CF ERR - FILE INCOMPLETE</p>	<p>The TFTP configuration file contained an incomplete last line that did not end in a new line character.</p>
<p>49 CF ERR - LINE TOO LONG</p>	<p>A line being processed in the TFTP configuration file was longer than the print server could accept.</p>
<p>4A CF ERR - UNKNOWN KEYWORD</p>	<p>A TFTP configuration file line contained an unknown keyword.</p>
<p>4B CF ERR - MISSING PARAMETER</p>	<p>A line in the TFTP configuration file was missing a required parameter.</p>
<p>4C CF ERR - INVALID PARAMETER</p>	<p>A line in the TFTP configuration file contained an invalid value for one of the parameters on that line.</p>
<p>4D CF ERR - ACCESS LIST EXCEEDED</p>	<p>The TFTP configuration file specified too many access list entries using the "allow:" keyword.</p>

<p>4E CF ERR - TRAP LIST EXCEEDED</p>	<p>The TFTP configuration file specified too many trap destination list entries using the "trap-destination:" keyword.</p>
<p>4F TFTP REMOTE ERROR</p>	<p>The TFTP transfer of the configuration file from the host to the print server failed with the remote host sending a TFTP ERROR packet to the print server.</p>
<p>50 TFTP LOCAL ERROR</p>	<p>The TFTP transfer of the configuration file from the host to the print server failed with the local print server encountering some form of inactivity timeout or excessive retransmissions situation.</p>
<p>51 TFTP RETRIES EXCEEDED</p>	<p>The overall retrying of the TFTP transfer of the configuration file from the host to the print server has exceeded a retry limit.</p>
<p>52 BAD BOOTP/DHCP REPLY</p>	<p>An error was detected in the BOOTP or DHCP reply that the print server received. The reply either had insufficient data in the UDP datagram to contain the minimum BOOTP/DHCP header of 236 bytes, had an operation field that was not BOOTPREPLY(OX02), had a header field that did not match the print servers hardware address, or had a UDP source port that was not the BOOTP/DHCP server port (67/udp).</p>
<p>53 BAD BOOTP TAG SIZE</p>	<p>The tagsize in a vendor specific field in the BOOTP reply is either 0, or greater than the remaining number of unprocessed bytes in the vendor specified area.</p>
<p>54 BOOTP/RARP IN PROGRESS</p>	<p>The print server is currently in the process of obtaining its basic IP configuration information through BOOTP/RARP.</p>
<p>55 BOOTP/DHCP IN PROGRESS</p>	<p>The print server is currently in the process of obtaining its basic IP configuration information through BOOTP/DHCP, and has not detected any errors.</p>
<p>56 DHCP NAK</p>	<p>The print server received a negative acknowledgment message from the DHCP server in response to a configuration request.</p>
<p>57 UNABLE TO CONNECT DHCP SVR</p>	<p>The print server had received IP parameters from a DHCP server, but communication with the DHCP server has been lost. Check status of the DHCP server.</p> <p>If an infinite lease was assigned, the print server will use the IP address of the most recent DHCP server used, but operation may be degraded until a DHCP server responds.</p>
<p>58 POSTSCRIPT MODE NOT SELECTED</p>	<p>The printer does not support AppleTalk or AppleTalk extensions.</p>

59 INCOMPLETE F/W - MUST DOWNLOAD	Firmware download message. Currently downloading firmware to the print server, or the download did not complete properly.
5A TURN PRINTER OFF/ON	Firmware download message. Download of firmware is complete. Power cycle the print server.
83 DISCONNECTING FROM SERVER	The server has been shut down because of a configuration change or reset request. This message automatically clears after a few seconds, unless the printer is off line, is in an error state, or is servicing another I/O port or another network protocol.
F1 TRYING TO CONNECT TO SERVER	The HP Jetdirect print server is trying to connect to the NetWare server(s). This is a normal message. Wait until either the connection is established or another status message appears.

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End of troubleshooting

If you have not been able to correct your print server problem using this troubleshooting procedure, you will need to contact HP technical support for further assistance. Click on the button below for details.



Browse HP.



[General Information \(http://www.hp.com/support/net_printing\)](http://www.hp.com/support/net_printing)

(The central location on HP's web site for the HP Jetdirect print servers and similar products)

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(The central location on HP's web site for the HP Jetdirect print servers and similar products)

[Customer Support \(http://www.hp.com/support/support_assistance\)](http://www.hp.com/support/support_assistance)

(Lists all of the support options offered by HP and contact information such as phone numbers and e-mail addresses)

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200m, 250m

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Asia Pacific

Australia	(03) 8877 8000 Hours of operation: 9:00 a.m. to 5:00 p.m. Monday through Friday For all spare parts including technical reference manuals, call: 1800 670 054 Hours of operation: 9:00 a.m. to 5:00 p.m. Monday through Friday
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Thailand	+66 (2) 661 4000 Hours of operation: 8:30 a.m. to 5:30 p.m. Monday through Friday
Viet Nam	+84 (0) 8 823 4530 Hours of operation: 8:00 a.m. to 5:00 p.m. Monday through Friday and from 8:00 a.m. to 12.00 p.m on Saturday

North America

Canada	905-206-4663 or (800) 387-3867 Hours of operation: 8:00 a.m. to 8:00 p.m. Monday through Friday
US	208-323-2551 Hours of Operation: 6:00 a.m. to 6:00 p.m. PST Monday though Friday

Latin America

Argentina	(from inside Argentina) 0810-555-5520 Hours of operation: 8:30 a.m. to 7:30 p.m. Monday through Friday
Argentina	(from outside Argentina) (5411)4778 8380 Hours of operation: 8:30 a.m. to 7:30 p.m. Monday through Friday
Brazil	Great Sao Paulo (support-HelpPhone) Phone: (11) 3747-7799 Fax : (11) 3747-7765 Hours of operation: 8:00 a.m. to 7:00 p.m. Monday through Friday Call Centralization (Hardware Support) (11) 7297-4998 Hours of operation: 8:00 a.m. to 7:00 p.m Monday through Friday Other Information Phone Phone: (11) 3747-7799 Fax : (11) 3747-7765 Hours of operation: 8:00 a.m. to 10:00 p.m. Monday through Friday; 9:00 a.m. to 6:00 p.m. on Saturday
Brazil	Outside Great Sao Paulo Call Centralization - Hardware Support 0800-130999 Hours of operation: 8:00 a.m. to 7:00 p.m Monday through Friday Call Centralization 0800-130999 Hours of operation: 8:00 a.m. to 7:00 p.m Monday through Friday Other information: Phone : 0800-157751 Fax : (11) 3747-7765 Hours of operation: 8:00 a.m. to 10:00 p.m. Monday through Friday 9:00 a.m. to 6:00 p.m. on Saturday Support - HelpPhone : Phone: 0800-157751 Fax: (11) 3747-7765 Hours of operation: 8:00 a.m. to 7:00 p.m. Monday through Friday
Chile	Post-sales Business Computing 800-22-5547 Post-sales Home Office Computing Phone : 800-360-999 Pre-sales 123-800-360-999 Hours of operation: 9:00 a.m. to 6:00 p.m. Monday through Friday

Colombia	9-800-91477 Hours of operation: 8:00 a.m. to 6:00 p.m. Monday through Friday
Mexico	Mexico City 52-58-9922 Hours of operation: 8:30 a.m. to 22:00 p.m. Monday through Friday; 9:00 a.m. to 14:00 p.m. on Saturday Outside Mexico City 01-800-472 6684 Hours of operation: 8:30 a.m. to 22:00 p.m. Monday through Friday; 9:00 a.m. to 14:00 p.m. on Saturday.
Peru	0-800-10111 Hours of operation: 9:00 a.m. to 6:00 p.m. Monday through Friday
Venezuela	Post-sales 800 47 777 (Caracas 207 8488) Hours of operation: 8:00 a.m. to 8:00 p.m. Monday through Friday

Europe, Middle East, and Africa

Hours of operation for HP Jetdirect products are: Monday to Friday from 8:30 until 18:00 (CET). Please note that support in your language or your country might not be available for all products.

Austria	+ 43 (0)7114 201080
Belgium	Dutch Phone: + 32 (0)2 626 8806 French Phone : + 32 (0)2 626 8807
Czech Republic	+ 42 (0)2 6130 7310 Hours of operation: 08:00 to 18:00 Monday through Thursday; 08:00 to 16.30 on Friday
Denmark	+ 45 39 29 4099
English International	+ 44 (0)207 512 52 02
Finland	+ 358 (0)203 47 288
France	+ 33 (0)1 43 62 34 34
Germany	+ 49 (0)180 52 58 143 (24PF/min)
Greece	+ 30 (0)1 619 64 11 Hours of operation: 09:00 to 17:00 Monday through Friday
Hungary	+36 (0)1 382 1111 Hours of operation: 08:30 to 18:00 Monday through Friday
Ireland	+ 353 (0)1 662 5525
Israel	Phone: + 972 (0)9 9524848 Fax : + 972 (0)9 9524849 Hours of operation: 09:00 to 18:00 Sunday through Thursday
Italy	+ 39 02 264 10350

Netherlands	+ 31 (0)20 606 8751
Norway	+ 47 22 11 6299
Poland	Phone: + 48 22 519 06 00 Fax : + 48 22 519 06 01 Hours of operation: 08:00 to 17:00 Monday through Friday
Portugal	+ 351 21 3176333
Russian Federation	Moscow + 7 095 797 3520 Hours of operation: 09:00 to 18:00 Monday through Friday St Petersburg +7 812 346 7997 Hours of operation: 09:00 to 18:00 Monday through Friday
South Africa	086 000 1030 inside RSA +27-11 258 9301 outside RSA Hours of operation: 08:00 to 17:00 Monday through Friday
Spain	+ 34 902 321 123
Sweden	+ 46 (0)8 619 2170
Switzerland	+ 41 (0)848 80 11 11
Turkey	+ 90 212 221 69 69 Hours of operation: 08:30 to 18:00 Monday through Friday
Ukraine	+7 (380-44) 490-3520 Hours of operation: 09:00 to 18:00 Monday through Friday
United Arab Emirates	Customer Care Reception & Technical Support Phone : 971 4 883 8454 Fax : 971 4 883 9495 This Call Center will answer customer queries from UAE, but also Bahrain, Qatar, Saudi Arabia, Jordan, Palestine, Egypt, Yemen, Lebanon, Kuwait & Oman. The languages supported are English & Arabic.
United Kingdom	+ 44 (0)207 512 52 02

End of troubleshooting.



hp jetdirect troubleshooting

Troubleshoot by clicking on the buttons.

To troubleshoot your HP Jetdirect print server, answer the questions on the following pages by clicking on the appropriate link (button or image or text).




Click on the button below to start troubleshooting.





What HP Jetdirect print server product do you have?

Choose your print server's product family by clicking on an image or link below.

Note: These links will take you either to an interactive, browser-based troubleshooting procedure (  logos), or to a general print server document in Acrobat format ( logo). If you go to an Acrobat document, click on "Troubleshooting" in the bookmark panel on the left side of the screen to go to the Troubleshooting section.



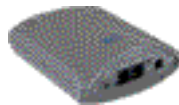
Reading *Adobe® Acrobat®* PDF files:

If you do not have the free *Adobe® Acrobat® Reader* software installed on your system, download it from Adobe's website by clicking on the icon below.



www.adobe.com/prodindex/acrobat/readstep.html

External Print Servers (Boxes)



[75x print server](#) ( )



[170X print server](#) ()



[175X print server](#) ( )



[300X print server](#) ()



[500X print servers](#) ()

Internal Print Servers (Cards and modules)



[200m, 250m \(LIO\) print servers](#) ( )



[400N \(MIO\) print servers](#) ()



[600N \(EIO\) print servers](#) ()



[610N \(EIO\) print servers](#) ()

Interpreting the configuration page



The configuration page (also called a self-test page or configuration plot) for a print server displays [messages](#), network statistics, and status for the print server. To print a configuration page, press the Test button on the print server.

An HP JetDirect configuration page can also be viewed over the network from a management utility (such as HP Web Jetadmin), or by accessing the embedded web server on the HP JetDirect print server.

Just click on any section of the configuration page below for detailed description of that section.

Back to start of troubleshooting for:

all HP Jetdirect print servers

HP Jetdirect 200m, 250m

Back to:

start of User's Guide



200m, 250m

HP JetDirect Configuration Page (English - PCL)

HP JetDirect Configuration

Status: I/O Card Ready

Model Number: J6042A
Hardware Address: 0060B0E27E00
Firmware Version: GSZ51NU
Port Select: RJ45
Port Config: 10BASE-T HALF
Auto Negotiation: On
Manufacturing ID: _Z5110000F_Z51
Date Manufactured: 01/1970
SNMP Set Cmty Name: Not Specified

Network Statistics

Total Packets Received: 2679
Unicast Packets Received: 142
Bad Packets Received: 0
Framing Errors Received: 0
Total Packets Transmitted: 266
Unsendable Packets: 0
Transmit Collisions: 1
Transmit Late Collisions: 0

TCP/IP

Status: Ready

Host Name: NPIB27E00
IP Address: 15.29.46.29
Subnet Mask: 255.255.248.0
Default Gateway: 15.29.40.1
Config By: DHCP
DHCP Server: 15.10.164.11
TFTP Server: Not Specified
Config File: Not Specified

Domain Name: rose.hp.com
DNS Server: 15.8.148.31
WINS Server: 15.24.216.81
Syslog Server: Not Specified
Idle Timeout: 270 sec
SLP: Enabled
Access List: Not Specified
Web JetAdmin URL: Not Specified

IPX/SPX

Status: Ready

Primary Frame Type: Auto Select

Network Frame Type Rcvd
COPFEE13 EN_II 189
0000C400 EN_802.2 561
COPFEE43 EN_SNAP 188
0000C300 EN_802.3 319

Novell/NetWare

Status: 16
NOT CONFIGURED
Node Name: NPIB27E00

NetWare Mode: Queue Server
NDS Tree Name:

NDS Context:

Attached Server:

Queue Poll Interval: 2 sec
SAP Interval: 60 sec

AppleTalk

Status: Ready

Name: HP Peripheral3
Zone: iIPS EtherTalk
Type 1: DeskWriter
Type 2:

Network Number: 401
Node Number: 14

DLC/LLC

Status: Ready

General JetDirect Information

Provides general print server status and identification information.

Message	Description
Status	<p>Current state of the print server.</p> <ul style="list-style-type: none">• I/O Card Ready: the print server has successfully connected to the network and is awaiting data.• I/O Card Initializing: the print server is initializing the network protocols. For more information, see the status line for each protocol on the configuration page.• I/O Card Not Ready: there is a problem with the print server or its configuration. <p>An error code and message are displayed if the print server is not ready.</p>
Model Number	The model number of the HP print server (for example, J6035A).
Hardware Address	The 12-digit hexadecimal LAN hardware (MAC) address of the print server installed in or attached to the printing device. This address is assigned by the manufacturer.
Firmware Version	The firmware revision number of the print server currently installed in the printer. The format is X.NN.NN, where X is a letter that depends on the HP print server model.
Port Select	<p>Specifies the LAN port on the print server that has been detected for use:</p> <ul style="list-style-type: none">• None: the print server is not connected to the network.• RJ-45: the RJ-45 network port is connected.
Port Config	<p>Identifies the link configuration of the RJ-45 LAN port on the print server:</p> <ul style="list-style-type: none">• 10BASE-T HALF: 10 Mbps, half-duplex• 10BASE-T FULL: 10 Mbps, full-duplex• 100TX HALF: 100 Mbps, half-duplex• 100TX FULL: 100 Mbps, full-duplex• Unknown: the print server is in an initialization state.• Disconnected: a network connection has not been detected. Check network cables.
Auto Negotiation	<p>Identifies whether IEEE 802.3u Autonegotiation on the 10/100TX port is enabled (on) or disabled (off).</p> <p>On: the print server will attempt to automatically configure itself onto the network at the proper speed (10 or 100 Mbps) and mode (half or full duplex).</p>
Manufacturing ID	The manufacturing identification code for use by HP Customer Care personnel.
Date Manufactured	Identifies the date of manufacture of the HP Jetdirect print server.

SNMP Set Cmt Name	<p>Specifies whether an SNMP set community name has been configured on the print server. An SNMP set community name is a password for "write" access to SNMP control functions (SNMP SetRequests) on the print server.</p> <ul style="list-style-type: none"> • Not Specified: an SNMP set community name has not been set. • Specified: a specific SNMP set community name has been set.
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Network Statistics

Provides the current values for various network parameters monitored by the print server.

Message	Description
Total Packets Received	Total number of frames (packets) received by the print server without error. This includes broadcast, multicast packets, and packets specifically addressed to the print server. This number does not include packets specifically addressed to other nodes.
Unicast Packets Received	Number of frames specifically addressed to this print server. This does not include broadcasts or multicasts.
Bad Packets Received	Total number of frames (packets) received with errors by the print server.
Framing Errors Received	Maximum of CRC (Cyclic Redundancy Check) errors and framing errors. CRC errors are frames received with CRC errors. Framing errors are frames received with alignment errors. A large number of framing errors could indicate a cabling problem with your network.
Total Packets Transmitted	Total number of frames (packets) transmitted without error.
Unsendable Packets	Total number of frames (packets) not successfully transmitted because of errors.
Transmit Collisions	Number of frames not transmitted because of repeated collisions.
Transmit Late Collisions	Total number of frames not transmitted because a late collision occurred. A large number may indicate a cabling problem on the network.

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TCP/IP Protocol Information

Provides the current status and parameter values for the TCP/IP network protocols.

Message	Description
Status	<p>Current TCP status:</p> <ul style="list-style-type: none"> • Ready: the print server is awaiting data over TCP/IP. • Disabled: TCP/IP was manually disabled. • Initializing: the print server is searching for the BOOTP server, or trying to get the configuration file through TFTP. An additional status message may also be displayed. <p>An error code and message are displayed if the print server is not ready.</p>
Host Name	<p>The host name configured on the print server. It may be truncated.</p> <ul style="list-style-type: none"> • Not Specified: no host name was specified in a BOOTP response or TFTP configuration file. • NPIxxxxxx: the default name is NPIxxxxxx, where xxxxxx represents the last six digits of the LAN hardware (MAC) address.
IP Address	<p>The Internet Protocol (IP) address assigned to the print server. This is a required entry for its operation on a TCP/IP network. During initialization, a temporary value 0.0.0.0 is displayed. After two minutes, a default IP address 192.0.0.192 is assigned, which may not be a valid IP address for your network.</p> <ul style="list-style-type: none"> • Not Specified: an IP address is not assigned or the value is zero.
Subnet Mask	<p>The IP subnet mask configured on the print server. During initialization, a temporary value 0.0.0.0 is displayed. Depending on configuration parameters, the print server may automatically assign a usable default value.</p> <ul style="list-style-type: none"> • Not Specified: a subnet mask is not configured.
Default Gateway	<p>The IP address of the gateway used when sending packets off the local network. Only one default gateway may be configured. During initialization, a temporary value 0.0.0.0 is displayed. If not provided, the IP address of the print server is used.</p> <ul style="list-style-type: none"> • Not Specified: a default gateway is not configured.
Config By	<p>Identifies how the print server obtained its IP configuration.</p> <ul style="list-style-type: none"> • BOOTP: automatic configuration via a BOOTP server. • BOOTP/TFTP: automatic configuration via a BOOTP server and TFTP configuration file. • DHCP: automatic configuration via a DHCP server. • DHCP/TFTP: automatic configuration via a DHCP server and TFTP configuration file. • RARP: automatic configuration via the Reverse Address Resolution Protocol. • User Specified: manual configuration via Telnet, the printer's control panel, HP Web JetAdmin, embedded web server, or other method. • Default IP: the default IP address was assigned. This address may not be a valid address for your network. • Not Configured: the print server was not configured with IP parameters. Verify that TCP/IP is enabled, or check for error status.

<p>BOOTP Server or DHCP Server or RARP Server</p>	<p>Displayed if BOOTP, DHCP, or RARP is used for TCP/IP configuration. It specifies the IP address of the system that responds to the print server's request for automatic TCP/IP configuration over the network.</p> <ul style="list-style-type: none"> • Not Specified: the configuration server's IP address could not be determined or was set to zero in the response packet.
<p>BOOTP/DHCP Server</p>	<p>Displayed during initialization while the print server attempts to obtain its TCP/IP configuration from a BOOTP or DHCP server. The temporary address displayed is 0.0.0.0.</p> <ul style="list-style-type: none"> • Not Specified: the configuration server's IP address could not be determined or was set to zero in the response packet.
<p>TFTP Server</p>	<p>The IP address of the system where the TFTP configuration file is located. During initialization, the temporary address 0.0.0.0 is displayed.</p> <ul style="list-style-type: none"> • Not Specified: a TFTP server has not been not been set.
<p>Config File</p>	<p>The name of the print server's configuration file. The file pathname may be truncated to fit on two lines.</p> <ul style="list-style-type: none"> • Not Specified: a file was not specified in the BOOTP reply from the host.
<p>Domain Name</p>	<p>The Domain Name System (DNS) name of the domain in which the print server resides (for example, support.company.com). It is not the fully qualified DNS name because the host printer name is not included (for example: printer1.support.company.com).</p> <ul style="list-style-type: none"> • Not Specified: a domain name has not been configured on the print server.
<p>DNS Server</p>	<p>The IP address of the Domain Name System (DNS) server.</p> <ul style="list-style-type: none"> • Not Specified: a DNS server's IP address has not been configured on the print server.
<p>WINS Server</p>	<p>The IP address of the Windows Internet Name Service (WINS) server.</p> <ul style="list-style-type: none"> • Not Specified: a WINS server's IP address has not been configured on the print server.
<p>Syslog Server</p>	<p>The IP address of the syslog server configured on the print server.</p> <ul style="list-style-type: none"> • Not Specified: a syslog server has not been configured.
<p>Idle Timeout</p>	<p>The timeout value expressed in seconds after which the print server closes an idle TCP print data connection. Acceptable values are integers between 0 and 3600 seconds. A value of zero turns off the timeout mechanism. The default value is 270 seconds.</p>

SLP	<p>Specifies whether the print server sends Service Location Protocol (SLP) packets used by system applications for automated installation.</p> <ul style="list-style-type: none"> • Enabled: the print server sends SLP packets. • Disabled: the print server does not send SLP packets.
Access List	<p>Identifies whether a host access control list is configured on the print server. A host access control list specifies the IP address of individual systems, or IP network of systems, that are allowed access to the print server and device.</p> <ul style="list-style-type: none"> • Specified: a host access list is configured on the print server. • Not Specified: a host access list is not configured on the print server. All systems are allowed access.
Web JetAdmin URL	<p>If the print server is found on the network by HP WebJetAdmin, the URL of the host system used for HP WebJetAdmin services is displayed. The URL is limited to two lines and may be truncated.</p> <ul style="list-style-type: none"> • Not Specified: the URL of the HP WebJetAdmin host system could not be identified or is not configured.

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IPX/SPX Protocol Information

Provides the current status and parameter values for the IPX/SPX network protocols.

Message	Description
Status	<p>Indicates the current IPX/SPX protocol status.</p> <ul style="list-style-type: none"> • Ready: the print server is awaiting data over IPX/SPX. • Disabled: IPX/SPX was manually disabled. • Initializing: the print server is registering the node address or name. An additional status message may also be displayed. <p>An error code and message are displayed if the print server is not ready.</p>
Node Name	<p>The IPX/SPX name of the print server. The default name is NPIxxxxxx, where xxxxxx is the last six digits of the LAN hardware (MAC) address. [Verify parameter location.]</p>

Primary Frame Type	<p>Specifies the frame type selection on the print server.</p> <ul style="list-style-type: none"> • Auto Select: the print server automatically senses and limits the frame type to the first one detected. • EN_II: limits the frame type to IPX over Ethernet frames. All others will be counted and discarded. • EN_802.2: limits the frame type to IPX over IEEE 802.2 with IEEE 802.3 frames. All others will be counted and discarded. • EN_SNAP: limits the frame type to IPX over SNAP with IEEE 802.3 frames. All others will be counted and discarded. • EN_802.3: limits the frame type to IPX over IEEE 802.3 frames. All others will be counted and discarded.
Network	<p>The first column <i>Network</i> indicates the network number associated with each protocol frame type used for communication between a server and the print server.</p> <ul style="list-style-type: none"> • Unknown: the print server is still trying to determine which network number to use.
Frame Type <i>EN_II</i> <i>EN_802.2</i> <i>EN_SNAP</i> <i>EN_802.3</i>	<p>The second column <i>Frame Type</i> identifies the frame type associated with each network number.</p> <p>Unless a specific frame type has been manually configured, the print server automatically determines the protocol frame type by listening to the network data being transferred over the network.</p> <ul style="list-style-type: none"> • Disabled: a specific frame type for that network has been manually configured.
Rcvd	<p>The third column <i>Rcvd</i> indicates how many packets have been received for each frame type.</p>

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Novell NetWare Protocol Information

Provides the current status and parameter values for the Novell Network protocol.

Message	Description
STATUS:	<p>Indicates the current Novell NetWare configuration status.</p> <p>READY: Indicates the HP Jetdirect print server is awaiting data.</p> <p>DISABLED: Indicates that IPX/SPX was manually disabled.</p> <p>INITIALIZING: Indicates that the print server is registering the node address or name. An additional status message may also be displayed.</p> <p>An error code and message are displayed if the print server is not ready.</p>
NODE NAME:	<p>Queue Server Mode: The print server name. This name must match a valid print server on the appropriate NetWare file server. The default name is NPIXXXXXX, where XXXXXX is the last six digits of the LAN hardware (MAC) address.</p> <p>Remote Printer Mode: The name you gave the network printer when you configured the network printer. The default name is NPIXXXXXX.</p>
NETWARE MODE:	<p>The mode used by the HP Jetdirect print server.</p> <p>QUEUE SERVER indicates that the print server receives data directly from the queue.</p> <p>REMOTE PRINTER, with the printer number following it, indicates that the print server emulates a Novell NetWare remote printer.</p> <p>If the printer is not configured, this field displays QUEUE SERVER.</p>

NDS TREE NAME:	Displays the name of the Novell Directory Services (NDS) tree for this printer. NDS is a database of objects on a NetWare network organized in a hierarchical tree structure. NOT SPECIFIED or blank: NDS is disabled.
NDS CONTEXT:	Displays the fully qualified NDS name where the HP Jetdirect print server object resides in the NDS tree. For example: CN=lj_pserver.OU=support.OU=mycity.OU=mycompany NOT SPECIFIED or blank: NDS is disabled.
ATTACHED SERVER:	The Attached Server field identifies the Jetdirect discovery method [NSQ] (Nearest Service Query) or [GSQ] (General Service Query) and the name of the proxy file server used to locate the configured bindery servers. NOT SPECIFIED or blank: A NetWare server has not been configured.
QUEUE POLL INTERVAL	(Job Poll Interval) Specifies the time interval (seconds) that the HP Jetdirect print server waits to check for print jobs in a print queue. The default is 2 seconds.
SAP INTERVAL:	Specifies the time interval (seconds) that the HP Jetdirect print server waits between Service Advertising Protocol (SAP) broadcasts on the network. The default is 60 seconds.
SERVER x:	Identifies a NetWare file server to which the HP Jetdirect print server is attached.

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AppleTalk Protocol Information

Provides the current status and parameter values for the AppleTalk network protocols.

Message	Description
Status	<p>Indicates the current AppleTalk configuration status.</p> <ul style="list-style-type: none"> • Ready: the print server is awaiting data. • Disabled: AppleTalk was manually disabled. • Initializing: the print server is registering the node address or name. An additional status message may also be displayed. <p>An error code and message are displayed if the print server is not ready.</p>
Name	The name of the printer on the AppleTalk network. A number after the name indicates that there are multiple devices with this name, and this is the Nth instance of the name.
Zone	The name of the AppleTalk network zone on which the printer is located.
Type	The type of the printer being advertised on the network. Two types can be displayed.
Network Number	The AppleTalk Network Number on which the print server is currently operating.

Node Number	<p>The AppleTalk Node Number that the print server chose for itself as part of its initialization sequence.</p> <p>Note: The AppleTalk phase 2 (P2) parameter is preconfigured on the print server.</p>
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DLC/LLC Protocol Information

Provides the current status for the DLC/LLC network protocol.

Message	Description
STATUS:	<p>Indicates the current DLC/LLC protocol status.</p> <p>READY: Indicates the HP Jetdirect print server is awaiting data.</p> <p>DISABLED: Indicates that DLC/LLC was manually disabled.</p> <p>INITIALIZING: Indicates that the print server is registering the node address or name. An additional status message may also be displayed.</p> <p>An error code and message are displayed if the print server is not ready.</p>

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Error Messages

Error Code and Message	Description
02 LAN ERROR- INTERNAL LOOPBACK	During self-test, the print server detected an internal loopback test error. The print server may be faulty. If the error persists, replace the print server.
03 LAN ERROR- EXTERNAL LOOPBACK	The print server is incorrectly connected to your network or is defective. Make sure your print server is correctly attached to your network. In addition, check the cabling and connectors.
07 LAN ERROR- CONTROLLER CHIP	Check the network connections. If the connections are intact, run the power-on self-test: turn the printer off, then on again. If the error persists, replace the print server.
08 LAN ERROR- INFINITE DEFERRAL	<p>There is a network congestion problem.</p> <p>Note: If the print server is not connected to the network, this error cannot occur.</p>

<p>09 LAN ERROR- BABBLE</p>	<p>Check the network connections. If the connections are intact, run the power-on self-test: turn the printer off, then on again. If the error persists, replace the print server.</p>
<p>0A LAN ERROR- NOSQE</p>	<p>Check the network connections. If the connections are intact, run the power-on self-test: turn the printer off, then on again. If the error persists, replace the print server.</p>
<p>0C LAN ERROR- RECEIVER OFF</p>	<p>There may be a problem with your network cabling or the print server. Check the cabling and connectors on your Ethernet network. If you cannot find a problem with your network cabling, run the power-on self-test: remove and re-attach the power module connector on the print server. If the error persists, there is a problem with the print server.</p>
<p>0D LAN ERROR- TRANSMITTER OFF</p>	<p>There may be a problem with your network cabling or the print server. Check the cabling and connectors on your Ethernet network. If you cannot find a problem with your network cabling, run the power-on self-test: remove and re-attach the power module connector on the print server. If the error persists, there is a problem with the print server.</p>
<p>0E LAN ERROR- LOSS OF CARRIER</p>	<p>Check the network connections. If the connections are intact, run the power-on self-test: remove and re-attach the power module connector on the print server. If the error persists, replace the print server.</p>
<p>10 LAN ERROR- UNDERFLOW</p>	<p>There may be a problem with your network cabling or the print server. Check the cabling and connectors on your network. If you cannot find a problem with your network cabling, run the power-on self-test: remove and re-attach the power module connector on the print server. If the error persists, there is a problem with the print server.</p>
<p>11 LAN ERROR- RETRY FAULTS</p>	<p>There is a problem with your network cabling or external network configuration. Verify operation of the hub or switch port.</p>
<p>12 LAN ERROR- NO LINKBEAT</p>	<p>With a 10Base-T or 100Base-TX port connected, Link Beat is not sensed. Check the network cable, and verify that the concentrator or hub is providing Link Beat.</p>
<p>13 NETWORK RECONFIG - MUST REBOOT</p>	<p>Reset or power cycle the print server to enable the new configuration values.</p>
<p>15 CONFIGURATION ERROR</p>	<p>The configuration information for the NetWare functions is not stored correctly on the HP Jetdirect print server. Use the installation software, embedded web server, or other tools to reconfigure the print server. If this error persists, there may be a problem with the HP Jetdirect print server.</p>
<p>16 NOT CONFIGURED</p>	<p>The HP Jetdirect print server has not been configured for NetWare. Use the installation software, embedded web server, or other tools to configure the print server for NetWare networks.</p>

<p>17 UNABLE TO FIND SERVER</p>	<p>(Ethernet) The HP Jetdirect print server was unable to find the NetWare print server (Remote Printer mode) or file server (Queue Server mode). (There was no response to service queries for advertising print servers or file servers that matched the configured print server or file server name.) Make sure that the print server or file server is running and that the print server or file server name configured on the HP Jetdirect print server matches the actual name used by the print server or file server. Also make sure that all cables and routers are functioning correctly.</p>
<p>18 PASSWORD ERROR</p>	<p>The HP Jetdirect print server detected that the password for the NetWare print server object is wrong. Use a NetWare utility (such as PCONSOLE) to erase the password for the print server object. When the HP Jetdirect print server logs on again, it sets a new password. Note: When multiple file servers are configured, the error is only displayed on the configuration page if none of the file servers are connected.</p>
<p>19 NO QUEUE ASSIGNED</p>	<p>The HP Jetdirect print server detected that the print server object has not been assigned any queues to service. Assign queues to the print server object using printer installation or NetWare utilities. Note: When multiple file servers are configured, the error is only displayed on the configuration page if none of the file servers were successfully connected.</p>
<p>1A PRINTER NUMBER NOT DEFINED</p>	<p>A NetWare printer number for this printer has not been configured. Assign a valid printer number to the HP Jetdirect print server. Use a NetWare utility (such as PCONSOLE), the Jetdirect embedded web server, or other tool to assign a printer number.</p>
<p>1B PRINTER NUMBER IN USE</p>	<p>The NetWare printer number assigned to the printer is already in use by another printer. Assign an unused printer number. This may also occur when a printer is power cycled, in which case the error goes away after the print server times out and detects the lost connection.</p>
<p>1C PRINT SERVER NOT DEFINED</p>	<p>The file server does not have a print server object that corresponds to the specified NetWare node name. Use printer installation software, a NetWare utility (such as PCONSOLE), or other tool to create the print server object. When the HP Jetdirect print server is configured for multiple file servers, the error is only displayed on the configuration page if none of the file servers made the connection.</p>
<p>1D UNABLE TO CONNECT TO SERVER</p>	<p>Remote Printer mode error: The HP Jetdirect print server was unable to establish an SPX connection with the NetWare print server. Make sure that the NetWare print server is running and that all cables and routers are functioning correctly.</p>
<p>1E FAIL RESERVING PRINTER NUM</p>	<p>The SPX connection to the print server was lost when the HP Jetdirect print server attempted to reserve the printer number. This indicates a possible network problem, or a problem with the print server. Make sure all cables and routers are functioning correctly. Try restarting the print server.</p>
<p>1F ERR NEGOTIATING BUFFER SIZE</p>	<p>A failure was detected when selecting the buffer size to be used when reading print data from the file server. This may indicate a network problem. When the HP Jetdirect print server is configured for multiple file servers, the error is only displayed on the configuration page if none of the file servers was successfully connected.</p>
<p>20 UNABLE TO LOGIN</p>	<p>A failure was detected when the HP Jetdirect print server tried to log onto the file server. This could be caused by the print server object not existing on the file server, or by a security check that prevents the print server from logging in. Make sure the file server name and print server object name are correct. Use PCONSOLE to erase the password for the print server object. Create a new print server object. When the HP Jetdirect print server is configured for multiple file servers, the error is only displayed on the configuration page if none of the file servers made the connection.</p>
<p>21 UNABLE TO SET PASSWORD</p>	<p>A failure was detected when the HP Jetdirect print server tried to set the password for the print server object. (Whenever the HP Jetdirect print server is able to log in without a password, it sets the password automatically.) This indicates a networking or security problem. Create a new print server object. When multiple file servers are configured, the error is only displayed on the configuration page if none of the file servers were successfully connected.</p>

22 UNABLE TO CONNECT TO SERVER	Queue Server mode error: The HP Jetdirect print server could not establish an NCP connection to the file server. Make sure that the correct file servers are connected. When multiple file servers are configured, the error is only displayed on the configuration page if none of the file servers were successfully connected.
23 UNABLE TO ATTACH TO QUEUE	A failure was detected when the HP Jetdirect print server tried to attach to one of the queues assigned to the print server object. This may be because no servers are allowed to attach to this queue. There may also be a networking or security problem. Use PCONSOLE to make sure that servers are allowed to attach to the queue, to delete the print server object from the list of queue servers if you want the HP Jetdirect print server to service other queues, or to delete the queue and create a new one (the print server object must be added to the list of queue servers). When the HP Jetdirect print server is configured for multiple file servers, the error is only displayed on the configuration page if none of the file servers made the connection.
24 PSERVER CLOSED CONNECTION	The NetWare print server requested a termination of the connection with the HP Jetdirect print server. No error exists or is indicated. Make sure the NetWare print server is running, and restart it if necessary.
25 DISCONNECTING - SPX TIMEOUT	The SPX connection to the print server was lost after the connection had been made. This indicates a possible network problem, or a problem with the print server. Make sure all cables and routers are functioning correctly. Try restarting the print server.
26 UNKNOWN NCP RETURN CODE	The HP Jetdirect print server encountered an unexpected fatal error after it had successfully connected to the file server. A wide variety of failures could produce this error message, including a downed file server or a network router failure.
27 UNEXPECTED PSERVER DATA RCVD	The print server sent some data when the HP Jetdirect print server had not given its permission to do so. This indicates a possible print server problem, possibly a software problem.
28 OUT OF BUFFERS	The HP Jetdirect print server was unable to allocate a buffer from its internal memory. This indicates all buffers are busy due possibly to heavy broadcast traffic or large amounts of network traffic directed to the print server.
29 UNABLE TO SENSE NET NUMBER	The HP Jetdirect print server has been trying for over 3 minutes to determine the NetWare protocol used on the network. Make sure that any file servers and routers are operating correctly. Make sure that the settings for NetWare frame type and source routing are correct.
2A NDS ERR: EXCEEDS MAX SERVERS	More queues were assigned than the HP Jetdirect print server can handle. Remove one or more print queues from the list to be serviced by Queue Server Mode.
2B NDS ERR: UNABLE TO LOGIN	Unable to log onto the NetWare directory tree. Make sure that the print server object is defined in the directory at the correct context. Clear the print server password using NWADMIN or similar NetWare tool.
2C NDS AUTHENTICATION ERROR	Unable to log onto the NetWare directory tree. Make sure that the print server object is defined in the directory at the correct context.
2D NDS ERR: CHANGE PSSWRD FAILED	Cannot modify the print server password to the value expected by the HP Jetdirect print server.
2E NDS SERVER PUBLIC KEY ERROR	Print Server Object Name mismatch. Unable to read the file server's public key. Verify object names, or contact the NDS administrator.
2F NDS ERR: SRVR NAME UNRESOLVD	The file server on the network cannot be located. The server may not be running at this time or a communications problem may exist.
30 NDS PRINT SERVER NAME ERROR	The HP Jetdirect print server object cannot be located in the specified NDS context.

31 NDS PS PRINTER LIST ERROR	Cannot locate a list of printers objects that should be assigned to the print server object.
32 NDS PRINTER OBJ NOTIFY ERR	The list of notification objects assigned to the printer object cannot be located.
33 NDS PRINT OBJ QUEUE LIST ERR	The list of print queues assigned to the printer objects cannot be located.
34 NDS ERR: UNRESOLVD PRNTR OBJ	The printer object cannot be located in the NDS directory.
35 NDS ERR: INVALID SRVR VERS	The current version of the NetWare file server is not supported.
36 NDS ERR: NO PRINTER OBJECTS	No printer objects are assigned to the print server object configured to this HP Jetdirect print server.
37 NDS ERR: MAX PRINT OBJECTS	Too many printer objects are assigned to the print server object. Using NetWare utilities (such as NWADMIN), reduce the number of printer objects assigned to the print server.
38 NDS ERR: NO QUEUE OBJECTS	No print queue objects are assigned to the printer objects located in the NDS directory.
39 NDS ERR: MAX QUEUE OBJECTS	Too many print queue objects are assigned to the printer. Reduce the number of queues assigned.
3A NDS ERR: UNABLE TO FIND TREE	The NDS tree cannot be located. The message may occur when the file server is not running or when a network communications problem exists.
3B NDS CONNECTION STATE ERROR	The HP Jetdirect print server cannot change the NDS connection state. Check licenses on the spooling server.
3C NDS ERR: UNRESOLVED QUEUE	The print queue object cannot be located in the specified NDS context.
3D NDS ERR: CANNOT READ Q HOST	Cannot locate the file server on the network. The server may not be running at this time or a communications problem may exist.
3E NDS PRNT SRVR PUBLIC KEY ERR	Print Server Object Name mismatch. Unable to read the print server's public key. Verify object names. Verify that the object key assigned to the HP Jetdirect print server is a print server object and not a printer or other object.
3F UNABLE TO GET NDS SRVR ADDR	The NDS server address cannot be located or accessed.
40 ARP DUPLICATE IP ADDRESS	The ARP layer has detected another node on the network using the same IP address as the print server. Extended error information below this message shows the hardware address of the other node.
41 NOVRAM ERROR	The print server cannot read the contents of its NOVRAM.

<p>42 INVALID IP ADDRESS</p>	<p>The IP address specified for the print server (through BOOTP) is an invalid IP address for specifying a single node. Check your Bootptab file for proper entries.</p>
<p>43 INVALID SUBNET MASK</p>	<p>The IP subnet mask specified for the print server (through BOOTP) is an invalid subnet mask. Check your Bootptab file for proper entries.</p>
<p>44 INVALID GATEWAY ADDRESS</p>	<p>The default gateway IP address specified for the print server (through BOOTP) is an invalid IP address for specifying a single node. Check your Bootptab file for proper entries.</p>
<p>45 INVALID SYSLOG ADDRESS</p>	<p>The syslog server IP address specified for the print server (through BOOTP) is an invalid IP address for specifying a single node. Check your Bootptab file for proper entries.</p>
<p>46 INVALID SERVER ADDRESS</p>	<p>The TFTP server IP address specified for the print server (through BOOTP) is an invalid IP address for specifying a single node. Check your Bootptab file for proper entries.</p>
<p>47 INVALID TRAP DEST ADDRESS</p>	<p>One of the SNMP trap (Trap PDU) destination IP addresses specified for the print server (through TFTP) is an invalid IP address for specifying a single node. Check your TFTP configuration file.</p>
<p>48 CF ERR - FILE INCOMPLETE</p>	<p>The TFTP configuration file contained an incomplete last line that did not end in a new line character.</p>
<p>49 CF ERR - LINE TOO LONG</p>	<p>A line being processed in the TFTP configuration file was longer than the print server could accept.</p>
<p>4A CF ERR - UNKNOWN KEYWORD</p>	<p>A TFTP configuration file line contained an unknown keyword.</p>
<p>4B CF ERR - MISSING PARAMETER</p>	<p>A line in the TFTP configuration file was missing a required parameter.</p>
<p>4C CF ERR - INVALID PARAMETER</p>	<p>A line in the TFTP configuration file contained an invalid value for one of the parameters on that line.</p>
<p>4D CF ERR - ACCESS LIST EXCEEDED</p>	<p>The TFTP configuration file specified too many access list entries using the "allow:" keyword.</p>

<p>4E CF ERR - TRAP LIST EXCEEDED</p>	<p>The TFTP configuration file specified too many trap destination list entries using the "trap-destination:" keyword.</p>
<p>4F TFTP REMOTE ERROR</p>	<p>The TFTP transfer of the configuration file from the host to the print server failed with the remote host sending a TFTP ERROR packet to the print server.</p>
<p>50 TFTP LOCAL ERROR</p>	<p>The TFTP transfer of the configuration file from the host to the print server failed with the local print server encountering some form of inactivity timeout or excessive retransmissions situation.</p>
<p>51 TFTP RETRIES EXCEEDED</p>	<p>The overall retrying of the TFTP transfer of the configuration file from the host to the print server has exceeded a retry limit.</p>
<p>52 BAD BOOTP/DHCP REPLY</p>	<p>An error was detected in the BOOTP or DHCP reply that the print server received. The reply either had insufficient data in the UDP datagram to contain the minimum BOOTP/DHCP header of 236 bytes, had an operation field that was not BOOTPREPLY(OX02), had a header field that did not match the print servers hardware address, or had a UDP source port that was not the BOOTP/DHCP server port (67/udp).</p>
<p>53 BAD BOOTP TAG SIZE</p>	<p>The tagsize in a vendor specific field in the BOOTP reply is either 0, or greater than the remaining number of unprocessed bytes in the vendor specified area.</p>
<p>54 BOOTP/RARP IN PROGRESS</p>	<p>The print server is currently in the process of obtaining its basic IP configuration information through BOOTP/RARP.</p>
<p>55 BOOTP/DHCP IN PROGRESS</p>	<p>The print server is currently in the process of obtaining its basic IP configuration information through BOOTP/DHCP, and has not detected any errors.</p>
<p>56 DHCP NAK</p>	<p>The print server received a negative acknowledgment message from the DHCP server in response to a configuration request.</p>
<p>57 UNABLE TO CONNECT DHCP SVR</p>	<p>The print server had received IP parameters from a DHCP server, but communication with the DHCP server has been lost. Check status of the DHCP server.</p> <p>If an infinite lease was assigned, the print server will use the IP address of the most recent DHCP server used, but operation may be degraded until a DHCP server responds.</p>
<p>58 POSTSCRIPT MODE NOT SELECTED</p>	<p>The printer does not support AppleTalk or AppleTalk extensions.</p>

<p>59 INCOMPLETE F/W - MUST DOWNLOAD</p>	<p>Firmware download message. Currently downloading firmware to the print server, or the download did not complete properly.</p>
<p>5A TURN PRINTER OFF/ON</p>	<p>Firmware download message. Download of firmware is complete. Power cycle the print server.</p>
<p>83 DISCONNECTING FROM SERVER</p>	<p>The server has been shut down because of a configuration change or reset request. This message automatically clears after a few seconds, unless the printer is off line, is in an error state, or is servicing another I/O port or another network protocol.</p>
<p>F1 TRYING TO CONNECT TO SERVER</p>	<p>The HP Jetdirect print server is trying to connect to the NetWare server(s). This is a normal message. Wait until either the connection is established or another status message appears.</p>

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Interpreting the lights on the HP Jetdirect 200m and 250m print servers

[Status light](#)

[10 or 100 Link lights](#)

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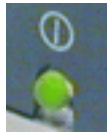
HP Jetdirect 200m, 250m

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200m, 250m



Status Light

Light Behavior	Description
Off	Print server is not receiving power.
On (solid green)	Print server is on and ready.
Blinking slowly (amber)	Fault occurred during self-test or operation. Follow troubleshooting procedure .
Blinking slowly (green)	Print server receiving power but not ready; self-test may still be in process. Or, no network connection; check the 10 and 100 Link lights .
Blinking quickly (green)	Print server is processing the configuration page .



10 or 100 Link Lights

Light Behavior	Description
Off	No network connection.
On (solid green)	Network connection is established at 10 Mb/s or at 100Mb/s.



Resetting the HP Jetdirect 200m or 250m print server to factory defaults (cold reset)

Once you configure the HP print server, the configuration settings are retained in memory unless you manually reset them to factory defaults.

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To reset the print server configuration to factory defaults, follow these steps:

1. Make sure that the printer's power is on.
2. Unplug the print server from the printer.
3. While holding down the **Test** button on the print server, plug the print server back into the printer; continue to hold down the Test button for about five seconds. Any user-configured settings will be erased.



200m, 250m



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200m, 250m

Help-yourself Troubleshooting

[Information to solve problems and get your print server working](#)

HP Customer Care by Phone

Highly trained technicians at our HP Customer Care Center are ready to take your call.

Note: Telephone fees are the responsibility of the caller. Rates may vary. Contact your local telephone company for current rates.

For the most recent HP Customer Care telephone numbers worldwide, see [phone numbers](#) or visit http://www.hp.com/support/support_assistance and select “call hp”. In the USA, the HP Customer Care telephone number for HP Jetdirect products is: **208-323-2551**.

WWW: HP Customer Care Online

Our support pages on the HP Web site www.hp.com/support/net_printing are a collection of information to help solve your issues and answer your questions about your HP Jetdirect print server, 24 hours a day, 7 days a week.

Also: [Software, driver, and firmware image upgrades](#)

WWW: HP Customer Care Forum

Go online, anytime, and you'll also find helpful user forums—a great source of ideas and suggestions for using your HP Jetdirect print server. You can access the user forum directly from <http://www.hp.com/go/forums> and select “hp network printing user support forum”.

Getting Warranty Service

[Getting warranty service](#)



Software, Driver, and Firmware Image Upgrades

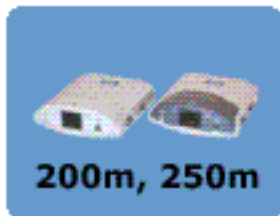
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Hewlett-Packard offers downloadable electronic upgrades for HP Jetdirect print servers with internal Flash memory. The electronic upgrades are available on the Web and various online services.

Current information about drivers, software versions, and HP Jetdirect firmware images are available from the following:



World Wide Web	Access HP's Customer Care Online at http://www.hp.com/support/net_printing
America Online	Receive drivers and upgrades by downloading them to your computer from the HP Forum.
HP Distribution Center	Order drivers and upgrades for HP printers by calling the HP Distribution Center at 805-257-5565 (USA only).
FTP Site	Download printer drivers and upgrades from HP's anonymous FTP site at ftp://ftp.hp.com/pub/networking/software



Specifications

HP J6039A Jetdirect 200m print server/Internet connector
HP J6042A Jetdirect 250m print server/Internet connector

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200m, 250m

Supported networking

Physical

- Supports unshielded or shielded twisted-pair cabling, using an RJ-45 connector, for:
 - IEEE 802.3i 10Base-T (Ethernet)
 - IEEE 802.3u 100Base-TX (Fast Ethernet)
- Requires a 10Base-T or 100Base-T network hub or concentrator that supports link beat (link test pulse) signals.

Supported network operating systems / protocols

- **200m**
 - Microsoft Windows 95, 98, 2000, NT 4.0, ME (TCP/IP, IPX/SPX (direct mode {peer-to-peer} only))
 - Apple Macintosh OS 8.6 and later (EtherTalk)
- **250m**
 - Microsoft Windows 95, 98, ME (TCP/IP, IPX/SPX)
 - Microsoft Windows 2000, NT 4.0, and later (TCP/IP, IPX/SPX, DLC/LLC)
 - Apple Macintosh OS 8.6 and later (EtherTalk)
 - Novell NetWare v 3.2, 4.2, 5.x (IPX/SPX); NDS (IPX/SPX); NDPS/NEPS (TCP/IP, IPX/SPX)
 - IBM OS/2 Warp v 3.0, 4.0 (TCP/IP, DLC/LLC)
 - HP-UX 10.20, 11.x; Solaris v2.5x, 2.6, 7, 8; SCO UNIX v86, 3.2, 4.2, 5.0; IBM AIX v3.2.5 and later; MPE-ix v5.5 (TCP/IP)
 - Artisoft LANtastic 7.0 (DLC/LLC)
 - Line Printer Daemon (lpd)

Browsers supported by embedded Web server

- Microsoft Internet Explorer, version 4.0 or later
- Netscape Navigator, version 5.0 or later

Physical specifications

Interfaces

Port	Specification
Network	See network specifications above .
Printer	HP-LIO (requires printer with LIO port)

Physical dimensions

Width	71 mm (2.8 in)
Length	84 mm (3.3 in)
Height	25 mm (1.0 in)

Weight

Weight	68 g (2.4 oz)
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Environmental specifications

Operating temperature, recommended	0° C to 55° C (32° F to 131° F)
Storage temperature, recommended	-40° C to 70° C (-40° F to 158° F)
Operating humidity, recommended	15% to 95% at 40° C (104° F), noncondensing

Acoustic Noise: Not applicable

Electromagnetic specifications

Electromagnetic immunity

See the [Declaration of Conformity](#).

Electromagnetic emissions

- *USA*: FCC Title 47 CFR part 15 Class-B
- *Canada*: ICES-003 Class B
- *Japan*: VCCI Class B
- *Europe*: CISPR-22/EN55022 Class B
- *Taiwan*: CNS 13438
- *Australia/New Zealand*: AS/NZS 3548
- *Russia*: GOST 29216

- *Korea*: Korean EMI Law, No. 1996-98 Class-B

For complete European standards compliance list, see the [Declaration of Conformity](#).

Safety statements

Product complies with:

- IEC 950: (1991)+A1, A2, A3, A4 / EN60950 (1992)+A1, A2, A3, A4, A11
-

Regulatory statements

USA: FCC Class B Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

European Community

Declaration of Conformity

This Declaration of Conformity complies with ISO/IEC Guide 22 and EN45014. It identifies the product, manufacturer's name and address, and applicable specifications recognized in the European community.

DECLARATION OF CONFORMITY

according to ISO/IEC Guide 22 and EN45014

Manufacturer's Name: Hewlett-Packard Company

Manufacturer's Address: 8000 Foothills Blvd.
Roseville, CA 95747-5677
U.S.A.

declares that the product:

Product Name: HP JetDirect 200m,250m

Model Number: J6039A, J6042A

conforms to the following Product Specifications:

Safety: EN60950 (1992) +A1,A2,A3,A4,AH / IEC 950 (1991) +A1,A2,A3,A4
EN60825-1 (1994) / IEC 825-1 (1993), Class 1
GB 4943 (1995)

EMC: EN 55022 (1998) / CISPR-22 (1997) Class B
GB 9254 (1988)
EN 55024 (1998)
IEC 61000-4-2 (1995); EN 61000-4-2 (1995)
IEC 61000-4-3 (1995); EN 61000-4-3 (1996)
IEC 61000-4-4 (1995); EN 61000-4-4 (1995)
IEC 61000-4-5 (1995); EN 61000-4-5 (1995)
IEC 61000-4-6 (1996); EN 61000-4-6 (1996)
IEC 61000-4-8 (1993); EN 61000-4-8 (1993)
IEC 61000-4-11 (1994); EN 61000-4-11 (1994)
EN61000-3-2 (1995)
EN61000-3-3 (1995)
FCC Title 47 CFR, Part 15 Class B

Supplementary Information:

The product herewith complies with the requirements of the EMC Directive 89/336/EEC and carries the CE marking accordingly.

This product was tested in a typical configurations with Hewlett-Packard Co. products.

Roseville, April, 27, 2001



Mark Vigeant, Product Regulations Manager

European Contact: Your local Hewlett-Packard Sales and Service Office or Hewlett-Packard GmbH,
Department TRE, Herrenberger Strasse 130, D-71034 Böblingen (FAX: +49-7031-14-3143).

Australia



This equipment complies with Australian EMC requirements.

Canada

This equipment complies with Canadian EMC Class B requirements.

Japan: VCCI Class B

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスB情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。
取り扱い説明書に従って正しい取り扱いをして下さい。

China: Chinese Safety Statement

See [Chinese Safety Statement](#).

HP 网络产品使用安全手册

使用须知

欢迎使用惠普网络产品，为了您及仪器的安全，请您务必注意如下事项：

1. 仪器要和地线相接，要使用有正确接地插头的电源线，使用中国国家规定的220V电源。
2. 避免高温和尘土多的地方，否则易引起仪器内部部件的损坏。
3. 避免接近高温，避免接近直接热源，如直射太阳光、暖气等其它发热体。
4. 不要有异物或液体落入机内，以免部件短路。
5. 不要将磁体放置于仪器附近。

警告

为防止火灾或触电事故，请不要将该机放置于淋雨或潮湿处。

安装

安装辅助管理模块，请参看安装指南。

保修及技术支持

如果您按照以上步骤操作时遇到了困难，或想了解其它产品性能，请按以下方式与我们联系。

如是硬件故障：

1. 与售出单位或当地维修机构联系。
2. 中国惠普有限公司维修中心地址：
北京市海淀区知春路49号希格玛大厦
联系电话：010-62623888 转 6101
邮政编码：100080

如是软件问题：

1. 惠普用户响应中心热线电话：010-65645959
2. 传真自动回复系统：010-65645735



Limited Global Warranty Statement and Service

HP J6039A Jetdirect 200m print server/Internet connector
HP J6042A Jetdirect 250m print server/Internet connector

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- [Limited Warranty Statement](#)



HEWLETT-PACKARD LIMITED GLOBAL WARRANTY STATEMENT

<u>HP Product</u>	<u>Duration of Warranty</u>
HP J6039A Jetdirect 200m print server/Internet connector	One (1) year
HP J6042A Jetdirect 250m print server/Internet connector	One (1) year

1. HP warrants to you, the end-user customer, that HP hardware, accessories and supplies will be free from defects in materials and workmanship after the date of purchase, for the period specified above. If HP receives notice of such defects during the warranty period, HP will, at its option, either repair or replace products that prove to be defective. Replacement products may be either new or equivalent in performance to new.
2. HP warrants to you that HP software will not fail to execute its programming instructions after the date of purchase, for a period of NINETY (90) DAYS, due to defects in material and workmanship when properly installed and used. If HP receives notice of such defects during the NINETY (90) day period, HP will replace software that does not execute its programming instructions due to such defects.
3. HP does not warrant that the operation of HP products will be uninterrupted or error free. If HP is unable, within a reasonable time, to repair or replace any product to a condition as warranted,

you will be entitled to a refund of the purchase price upon prompt return of the product.

4. HP products may contain remanufactured parts equivalent to new in performance or may have been subject to incidental use.
5. Warranty does not apply to defects resulting from (a) improper or inadequate maintenance or calibration, (b) software, interfacing, parts or supplies not supplied by HP, (c) unauthorized modification or misuse, (d) operation outside of the published environmental specifications for the product, or (e) improper site preparation or maintenance.
6. HP's limited warranty is valid in any country or locality where HP has a support presence for this product and where HP has marketed this product. The level of warranty service you receive may vary according to local standards. HP will not alter form, fit or function of the product to make it operate in a country for which it was never intended to function for legal or regulatory reasons.
7. **TO THE EXTENT ALLOWED BY LOCAL LAW, THE ABOVE WARRANTIES ARE EXCLUSIVE AND NO OTHER WARRANTY OR CONDITION, WHETHER WRITTEN OR ORAL, IS EXPRESSED OR IMPLIED AND HP SPECIFICALLY DISCLAIMS ANY IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY, SATISFACTORY QUALITY, AND FITNESS FOR A PARTICULAR PURPOSE.** Some countries, states or provinces do not allow limitations on the duration of an implied warranty, so the above limitation or exclusion might not apply to you. This warranty gives you specific legal rights and you might also have other rights that vary from country to country, state to state, or province to province.
8. HP will be liable for damage to tangible property per incident up to the greater of \$300,000 or the actual amount paid for the product that is the subject of the claim, and for damages for bodily injury or death, to the extent that all such damages are determined by a court of competent jurisdiction to have been directly caused by a defective HP product.
9. **TO THE EXTENT ALLOWED BY LOCAL LAW, THE REMEDIES IN THIS WARRANTY STATEMENT ARE YOUR SOLE AND EXCLUSIVE REMEDIES. EXCEPT AS INDICATED ABOVE, IN NO EVENT WILL HP OR ITS SUPPLIERS BE LIABLE FOR LOSS OF DATA OR FOR DIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL (INCLUDING LOST PROFIT OR DATA), OR OTHER DAMAGE, WHETHER BASED IN CONTRACT, TORT, OR OTHERWISE.** Some countries, states or provinces do not

allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

THE WARRANTY TERMS CONTAINED IN THIS STATEMENT, EXCEPT TO THE EXTENT LAWFULLY PERMITTED, DO NOT EXCLUDE, RESTRICT OR MODIFY AND ARE IN ADDITION TO THE MANDATORY STATUTORY RIGHTS APPLICABLE TO THE SALE OF THIS PRODUCT TO YOU.

Local warranty statements

Australia and New Zealand

For consumer transactions in Australia and New Zealand: The warranty terms contained herein except to the extent lawfully permitted, do not exclude, restrict, or modify and are in addition to the mandatory statutory rights applicable to the sale of this product to you.

Argentina

Certificado de Garantía: vea el folleto de garantía que acompaña el paquete del producto.

México

Póliza de Garantía: vea el folleto de garantía que acompaña el paquete del producto.

Getting warranty service

For your records, please retain your original proof of purchase. Record the product number and serial number. Your product number is on a label on the bottom of the print server, for example, "J6039A". The serial number is on the same label.

Your authorized dealer

If you encounter difficulty, begin by contacting the person who sold you the HP Jetdirect print server to you. Your HP Authorized Dealer will be familiar with your requirements and can provide assistance.

HP Customer Care for warranty service

For warranty service on HP Jetdirect products, call the HP Customer Care Center. See [phone numbers](#) or visit http://www.hp.com/support/support_assistance and select “call hp”. The HP Customer Care representative will help you with troubleshooting, and advise you on warranty service. When calling, please have the following information ready:

- HP Jetdirect product you are calling about, for example, “J6039A”.
- Model number of the product, for example, “Jetdirect 200m”.
- Serial number of the product.
- Complete description of the problem.
- Proof of purchase of your product.
- Your shipping address.

Service billing (out of warranty)

When ordering a replacement unit for out-of-warranty service, you may be charged a repair cost. See your HP Authorized Dealer or your local HP Sales and Service Office representative. Or, you can call HP at (800) 227-8164 (USA only); prepare to supply shipping and billing addresses and payment information.

Service outside the USA

Customers outside the USA should contact their HP Authorized Dealer or HP Sales and Service Office to obtain information on prices, exchange unit availability, and instructions.



Some Handy Tools and Useful Techniques

You may find these tools and techniques useful for setting up and maintaining your print server.

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 - [Embedded web server](#)
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200m, 250m

Some Handy Tools

The installer

The network printer installer, known formally as the Install Network Printer Wizard, provides an easy way to configure your print server with a network address and install the attached printer on your Windows computer. The installer resides on the HP Jetdirect CD; in addition, if your printer works with a Jetdirect 200m or 250m print server, your printer's CD contains a similar installer that will also handle network printer installation. We recommend that you use the printer's CD if it is available, since the installer on that CD already knows where to find the printer driver that it needs for installation.

To use the installer, insert the CD into the CD drive of your Windows computer. The CD's setup program should start automatically; if it doesn't, open the CD in the Windows Explorer and double-click on SETUP.EXE. Several buttons will appear on the screen; click on the Install button to start the installation. Follow the instructions on the screens that appear until you have completed the installation.

The embedded web server

Each Jetdirect 200m or 250m print server contains an embedded web server. This acts like a small web site that allows you to configure various parameters of the print server, such as an IP or IPX address. In addition, a simple network scanning facility, called [Web Scan](#), is available through

the embedded web server if your print server is attached to a supported MFP (multifunction printer) or All-in-One device.

You use your standard web browser for access to the embedded web server's functions.

To use the print server's embedded web server, open your browser and enter the print server's IP address as the URL. (Most browsers will take a simple IP address; if yours doesn't, put an `http://` before the IP address.) If you don't know your print server's IP address, [print a configuration page](#) -- the IP address will be listed in the TCP/IP section.

The embedded web server's screens should be reasonably self-explanatory, and a little exploration will probably show you what you need to know. (For full details on the embedded web server, [click here](#).) All entries show the current values of the print server's parameters, and you can change those values by entering new ones (if your network administrator has allowed full access to them). Note that if you change the print server's IP address, you will lose the connection to the print server. You can reconnect by pointing your browser at the new IP address.

Some Useful Techniques

Printing a configuration page

To print a configuration page, press the Test button on the print server.



This will print out the current value of the print server's configuration parameters on the attached printer.

Setting an IP address

The easiest way to set an IP address on the print server is to use the embedded web server. (You should consult with your network administrator before you make any changes to the print server's configuration, and notify other users of any change you will make.)

To set an IP address:

1. Open your browser and enter the print server's IP address as the URL. (If you don't know the IP address, you can find it by [printing a configuration page](#).)
2. Click on the Networking tab in the page that appears.
3. On the Networking page, make sure that TCP/IP is selected.
4. Set the IP Configuration Method to Manual.
5. Enter the new IP address in the IP Address box.

Note that you will lose your connection to the embedded web server when you change the IP address. To re-establish the connection, enter the new IP address in your browser's URL field.

Performing a cold reset (resetting to factory defaults)

Once you configure the HP print server, the configuration settings are retained in memory unless you manually reset them to factory defaults.

To reset the print server configuration to factory defaults, follow these steps:

1. Make sure that the printer's power is on.
2. Unplug the print server from the printer.
3. While holding down the Test button on the print server, plug the print server back into the printer; continue to hold down the Test button for about five seconds. Any user-configured settings will be erased.

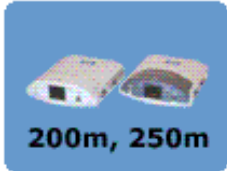
Web Scan



With HP's Web Scan, you can perform a simple scan from your supported networked multi-function peripheral (MFP) or All-in-One device, using a web browser on your computer. Web Scan lets you save the scan in a file or e-mail it (if an e-mail server is configured). You do this using the embedded web server that is maintained for each HP Jetdirect print server.

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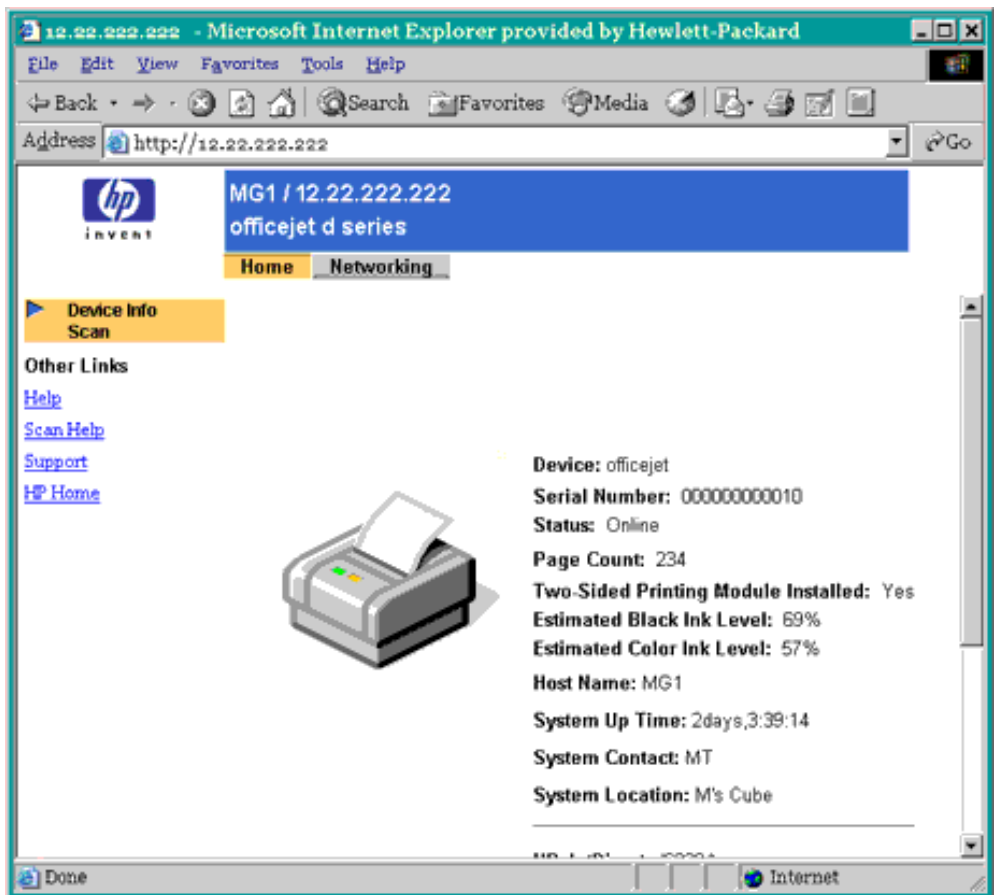


- [Starting Web Scan](#)
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 - Features:
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 - Reference topics:
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 - [Problems with availability of scanning and e-mail](#)
- [An alternative to the basic scanning in the embedded web server](#)

Starting Web Scan

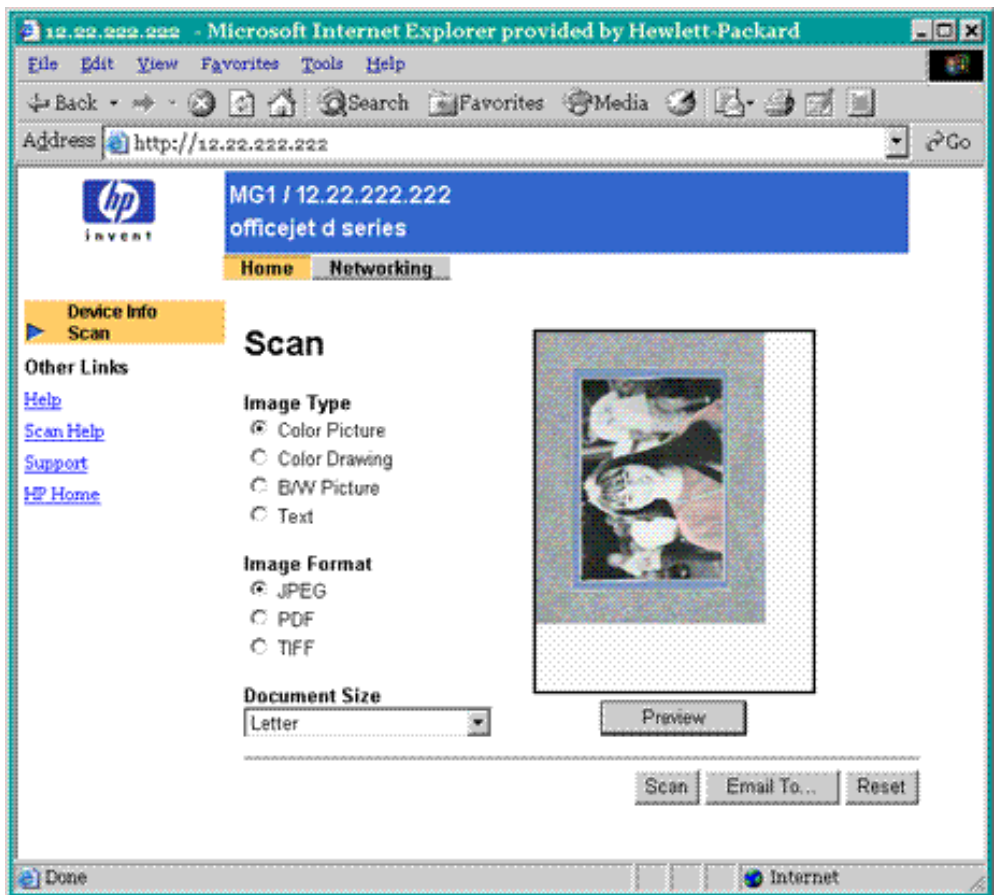
Start the embedded web server

1. **Make sure that the TCP/IP protocol is configured** on both the print server and your computer.
 - *On your computer:* If your computer can connect to the Internet, you have TCP/IP configured. If not, check with your network administrator for information on configuring TCP/IP for your network.
 - *On the print server:* Print a configuration page by pressing the Test button on the print server that is attached to your MFP or All-in-One device. You can find the IP address in the section on TCP/IP Configuration. If the IP address is 0.0.0.0, the print server is initializing; wait approximately two minutes and print another configuration page. If the IP address is 192.0.0.192, this is a default address and may not be valid on your network; configure a new IP address on the print server (see the [TCP/IP Configuration](#) section for instructions).
2. **Point your browser at the print server.** Using a [supported web browser](#), enter the IP address of the print server as the URL. The embedded web server's home page will appear.



Typical home page

3. **Click on "Scan"**. If your MFP or All-in-One device is supported by Web Scan, there will be a Scan menu item in the left-hand column of the embedded web server home page. Click on Scan to bring up the Web Scan page.



Typical Web Scan page

Using Web Scan

Preview image

If you have a flatbed MFP or All-in-One, you may *preview* an image by clicking the Preview button. The preview will be displayed in a small window on the Web Scan page.

For a flatbed with a multi-page document feeder (ADF):

You cannot preview an image from the feeder. Put the document on the glass flatbed instead.

Scan (download) the image

Follow these easy steps to scan the document placed in the scanner:

Note: Do **not** press the scan button on the MFP; use buttons on the screen as follows.

1. Select the type of image you are scanning using the Image Type buttons. [Available document settings.](#)
2. Select the file format you want using the Image Format buttons. [Available formats.](#)
3. Select your paper size in the Document Size list box. [Available document sizes.](#)
4. Click the Scan button to scan the document and download it to your computer. Depending on the image format, you may view the scanned image (in an appropriate plug-in or application, inside or outside of your browser) or save it to your hard disk.

For a multi-page document feeder (ADF):

Click Scan only once. (The same is true for Email To...; see [Email](#) below.) For a [PDF](#) image, one file will be created from all the pages in the feeder. For a [TIFF](#) or [JPEG](#) image, a separate file will be created for (and a separate window will be used to display) each page in the feeder.

Scan the image to e-mail

Instead of downloading the image to your computer or viewing it on your computer, you can e-mail the file containing the image as an attachment.

1. The network administrator must configure an outgoing e-mail server for the print server that connects the scanner, before any users can succeed at this procedure. You'll find out if this was done as soon as you do [step 5 below](#).
[How to configure the e-mail server.](#)
2. Select the type of image you are scanning using the Image Type buttons. [Available document settings.](#)
3. Select the file format you want using the Image Format buttons. [Available formats.](#)
4. Select your paper size in the Document Size list box. [Available document sizes.](#)
5. Click the Email To... button. The Email page will appear.

Problems:

[If the Email To... button does not appear...](#)

[If the Email To... button works, but then an error message appears...](#)

For a multi-page document feeder (ADF):

Click Email To... only once. For a [PDF](#) image, one file will be created from all the pages in the feeder. For a [TIFF](#) or [JPEG](#) image, separate files will be created for each page in the feeder. Each file will be contained in a separate attachment to the message.

6. Complete the form with the From, To, and Subject information. You also may enter a short message introducing the scanned image.
7. Click the Send button on the Email page.

Scanner status

You may see a status message appear on the Scan or Email window while the embedded web server is executing your operation (usually in a window overlaying the original Scan or Email window). The following table shows the status messages for the scanner and what they mean.

Status Message	Meaning
Scanner Ready	The scanner is ready for use.
Connecting	Connecting to the email server
Scanning page	You are currently scanning.
Scanner in use	Someone else is using the scanner. Try again later.

Image Type document settings

The document settings available depend on the specific peripheral pointed to by the embedded web server. They include:

- Color Picture for low-resolution color: 150 [DPI](#), 24-bit color. [DPI=dots per inch]
- Color Drawing for high-resolution color: 300 [DPI](#), 24-bit color.
- B/W Picture for monochrome graphics: 150 [DPI](#), gray-scale.
- Text: 300 [DPI](#), black and white.

Document Size settings

The following document sizes are available (in inches). The document size you select will contain only a portion of the entire scanned image if the document size is smaller than the image.

- Letter (8.5 by 11)
- Legal (8.5 by 14)
- A4 (8.3 by 11.7)
- Executive (7.25 by 10.5)
- 4X6 (4 by 6)
- 5X7 (5 by 7)
- 3X5 (3 by 5)
- 3X3 (3 by 3)

Image Format settings

The image format settings available depend on the capabilities of the scanner in the specific peripheral pointed to by the embedded web server. They include:

- PDF files for easy interchange with other people. When downloading, the browser typically will start the Adobe Acrobat Reader plug-in to view the file in a browser window.
- JPEG for compact, compressed files suitable for display in web browsers. When downloading, the image typically will be displayed in a browser window. The availability of JPEG format depends on the capabilities of the scanner.
- TIFF for files to be printed or to be manipulated as high-resolution images. When downloading, the browser will use a plug-in or external application for TIFF files, if one is loaded, or will prompt the user to view or save the image.

Troubleshooting web scanning

Problems using scan

- Unable to scan using TIFF image format

Problem: After I click the Scan button, I get an error message that the scan is aborted. I am using Internet Explorer.

Resolution: This is a known issue with plug-ins (not external applications) and version 5.0 of Microsoft Internet Explorer. Configure your Internet Explorer browser to not use that specific plug-in for TIFF files.

- Unable to scan using PDF image format

Problem: After I click the Scan button, the scanner begins to scan but never completes. I am using Internet Explorer.

Resolution: This is a known issue with various versions of Microsoft Internet Explorer and Windows 95, 98, and NT 4.0. A recommended work-around is to download the latest version of Internet Explorer, 5.0 or higher, and the latest version of Adobe Acrobat Reader, 4.0 or higher.

- Unable to use "Save" or "Save As" command in Adobe Acrobat Reader

Problem: After I click the Scan button, Adobe Acrobat Reader is launched. I am unable to select “Save” or “Save As”.

Resolution: This is a known issue with various versions of Microsoft Internet Explorer and Windows 95, 98, and NT 4.0. A recommended work-around is to download the latest version of Adobe Acrobat Reader, 4.0 or higher.

- Not prompted to “Save File As” or “Open File”

Problem: After I click the Scan button, I am not prompted to “Save File As” or “Open File”. Instead, an application or plug-in is loaded and the scanned image is displayed.

Resolution: There are many different plug-in applications available for each of the [image format choices](#). If you do not want the plug-in to automatically load your scanned image, you can uninstall the plug-in associated with the image format you are using. Or, you can use the “Save” or “Save As” command located within the plug-in application.

- Scanned image does not display on the screen

Problem: After I click the Scan button, a plug-in is launched and tries to open either my [TIFF](#) or [PDF](#) image. Instead of the image displaying on the screen, I get a graphical icon (for example, a page with the left corner folded or a small image with a question mark in the center) or even a message stating that the browser could not load the image.

Resolution: Since a variety of plug-in applications exist, each plug-in exhibits a different behavior. You can uninstall the plug-in associated with the image format you are using. Or, you can change the association of the TIFF or PDF file type to a different application.

Problems using scan preview

- Preview option is missing with a sheet feed scanner or with a multi-page document feeder (ADF)

Problem: I want to preview the image before saving it, but the Preview button is missing.

Resolution: Sheet-feed MFPs (and All-in-Ones) do not support scan previews. Flatbed scanners do not support scan previews when using a multi-page document feeder (ADF) instead of the glass flatbed. In these cases, to preview the image before saving it, use the “Open it” option or allow the plug-in to open the scanned image. Once the scanned image is displayed, use the “Save” or “Save As” option in the application.

- Unable to “rubber band” or scan a small area from the preview

Problem: I clicked the Preview button and the image appeared in the preview window. I tried to select a small region, but this did not work.

Resolution: Rubber banding or selecting a portion of a document are not supported. However, it is possible to select a predefined [document size](#) that is smaller than the image size; the result will be a portion of the image.

Problems with availability of scan and e-mail

- Scan menu item is missing from the Home page.

Problem: On the Home page of my embedded web server the Scan item is missing from the left column.

Resolution 1: Only HP multifunction (MFP or All-in-One) devices can be used for scanning; check the type of printer attached to the print server.

Resolution 2: Web Scan has been disabled on the print server that networks the multifunction printer. Someone with configuration access to the print server should check the configuration of the Enable Web Scan parameter.

- Email To... button is missing from the Scan page.

Problem: I can reach the Scan page but no Email To... button appears next to Scan.

Resolution: Scanning to email has been disabled on the print server that networks the multifunction printer. Someone with configuration access to the print server should check the configuration of settings of the Enable Web Scan-to-email parameter. Both Enable Web Scan and Scan-to-email must be set for the Email To... button to appear.

- The Email To... button is available but I get an error message.

Problem 1: The Email To... button is available but the operation fails and an error message says "To use this feature, Email (SMTP Server) must be specified". This means that no outgoing SMTP mail server was detected as configured for the print server.

Resolution 1: Someone with configuration access to the print server should configure the e-mail server, as follows: Click on the Networking tab at the top of the embedded web server page. In the left column of the page (in the Configuration list), select Other Settings. For the parameter Email (SMTP) Server (for outgoing mail), specify the e-mail server to be used when any user scans to email through this networked scanner. Click [Apply].

Disabling Web Scan and its alternative

You can disable and enable the availability of the web scanning facility in the embedded web server. You can also disable and enable the alternative to this basic scanning functionality.

The alternative: The print server may support (depending on installation methods) the full-function scanning facility residing on individual computers—acquired by installing the client software from the CD for the HP multifunction (MFP or All-in-One) device. The client user can use that software normally on printers networked through an HP JetDirect print server, and it probably has more features than the simple scanning available on the embedded web server through the client user's browser.

Enabling/disabling: Both alternatives—the print server's support of the full-function client scanning software and the print server's embedded web server Web Scan facility—are enabled by default and therefore available to the network clients. Either or both can be disabled (and then enabled again) in the print server's configuration. Methods for making these configuration changes:

- The embedded web server's Networking configuration facility:

Click on the Networking tab at the top of the web page. In the left column of the page (in the Configuration list, select Other Settings. To assign a parameter setting, enter the desired value and click [Apply]. [Networking configuration reference](#). The parameters are the following:

- Enable Web Scan
Enable Scan-to-email
are the parameters used to disable and enable Web Scan, with or without the e-mail capability, in the print server's embedded web server. Both are enabled by default. Enable Web Scan must be enabled if Enable Scan-to-email is enabled.
- Enable MFP and AIO software support
is the parameter used to disable and enable the print server's support of the full-function client scanning software. It is enabled by default.

Compatible Web Browsers

The embedded web server has been tested with the following web browsers:

- Windows 95/98 and NT 4.0:
 - Microsoft Internet Explorer 4.01 with SP2, 5.0 and later
 - Netscape Navigator 4.08 and later
- Windows 2000:
 - Microsoft Internet Explorer 5.0 and later
 - Netscape Navigator 4.6 and later
- Windows Millennium (ME):
 - Microsoft Internet Explorer 5.0, 5.5 and later
 - Netscape Navigator 4.6 and later
- MacOS 8.6 and later:
 - Microsoft Internet Explorer 5.01 and later
 - Netscape Navigator 4.08 and later
- HP-UX 10.10 and 10.20:
 - Microsoft Internet Explorer 5.0 and later
 - Netscape Navigator 4.08 and later
- HP-UX 11.0:
 - Microsoft Internet Explorer 5.0 and later
 - Netscape Navigator 4.72 and later
- Solaris 2.5x, 2.6, 7, 8:
 - Microsoft Internet Explorer 5.0 and later
 - Netscape Navigator 4.70 and later
- AIX 4.x:
 - Netscape Navigator 4.08 and later
- Red Hat Linux 6.0, 6.1, 7.0:
 - Netscape Navigator 4.08 and later

For the latest list of compatible web browsers, visit HP's technical support website at www.hp.com/support/net_printing.

If you use HP Web JetAdmin, a printer installation and management application for intranets, with the HP JetDirect embedded web server, version 6.1 or greater is recommended. (HP Web JetAdmin is available from HP's technical support website at www.hp.com/support/net_printing.)