HP Jetdirect Print Server

170X Installation and Configuration Guide

Installation and Configuration Guide

HP Jetdirect 170X External Print Server

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Applicable Products: J3258G

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Safety Considerations

Prior to the installation and use of this product, review all safety markings and instructions.

Instruction Manual Symbol: If the product is marked with this symbol, refer to the product manuals to protect the product from damage.

WARNING: Denotes a hazard that can cause injury.

CAUTION: Denotes a hazard that can damage equipment or data.

Do not proceed beyond a WARNING or CAUTION notice until you have understood the hazard and have taken appropriate steps.

Servicing

Any service, adjustment, maintenance, or repair of this product must be performed only by authorized service-trained personnel.

Power

This product does not have a power switch; it is powered on when either the power cord or AC adapter is plugged into a power outlet. The power outlet shall be installed near the equipment and shall be easily accessible for quick disconnect.

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Introduction

Product Overview

The HP Jetdirect 170X (J3258G) is an external print server that allows you to connect supported devices directly to your network. A network connection allows a device to be conveniently located for sharing by many users. In addition, it provides data throughput at network speeds.

The HP Jetdirect 170X has an RJ-45 network port (10Base-T) for connecting the network. In addition, it has a single high-speed, bidirectional parallel port (IEEE 1284) for connecting your device.

The HP Jetdirect 170X is a *value-featured* print server. For available *full-featured* print server products, browse for external print servers at:

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

Components and Features

- RJ-45 network port (Ethernet IEEE 10Base-T)
- Bidirectional parallel port (IEEE 1284)
- Two LEDs (indicator lights for LAN status and activity)
- Test button (sends 170X configuration page to printer)

Print Server Firmware Version

The features described in this guide support the HP Jetdirect 170X external print server with firmware version F.08.56 or later.

Supported Network Protocols

HP Jetdirect 170X supported network protocols and typical network printing environments are listed below:

Table 1.1 HP Jetdirect 170X Network Protocols

Network Protocols	Typical Networks*
TCP/IP	Microsoft Windows 2000, XP, Server 2003 Direct Mode printing FTP (File Transfer Protocol) printing Novell NetWare 5.6 (or later)**
IPX/SPX	Microsoft Windows 2000, XP (32-bit only) Direct Mode printing** Novell NetWare**
DLC/LLC	DLC/LLC protocols are provided for legacy systems that may require DLC/LLC support.**
* Refer to current HP Jetdirect product data sheets for changes to supported protocols and environments. For operation with other network environments, consult your system vendor or authorized HP dealer. ** Contact your network system vendor for software, documentation, and support.	

What's Included

- HP Jetdirect 170X Print Server
- Power Module assembly (see Appendix A for part numbers)
- CD-ROM containing installation software (Windows systems) and documentation For the latest software and documentation, visit http://www.hp.com/go/inpw_sw

Network Printing Basics

Networks consist of computers connected together to share information and resources, such as printers. There are two ways to share printers on a network: client-server and peer-to-peer.

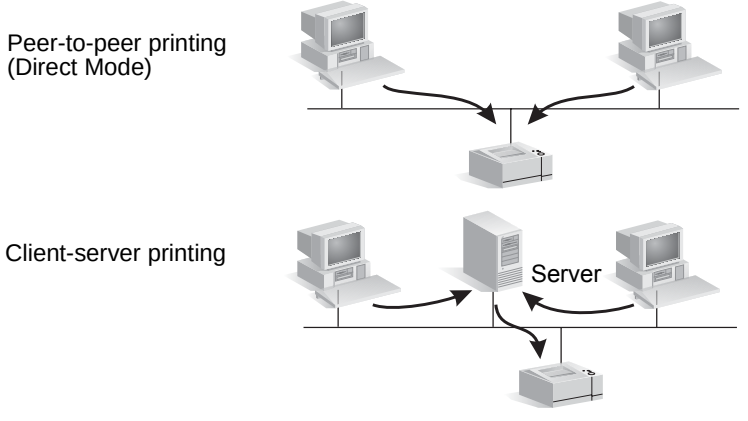


Figure 1.1 Network Printing Configurations

On a client-server network, client computers send print jobs to *dedicated server* computers that control the use of each printer. This printing is typically used in medium to large networks where dedicated servers are used to manage printing needs of many users. Popular client-server networks include Novell NetWare or Microsoft server networks.

On a peer-to-peer network, dedicated servers are not used. Instead, each computer is configured to send print jobs to the printer directly. This is more suitable for smaller networks. On peer-to-peer networks, users configure their Microsoft Windows systems to print directly to the printer.

Note that both peer-to-peer and client-server printing can be used on the same network. For example, a small workgroup might use peer-to-peer printing even though it is connected to an enterprise-wide client-server network.

Regardless of the network type (client-server or peer-to-peer), your computers and printers must use a common language, or "network protocol" to communicate with each other. The most common protocols are **IPX** (Internet Packet Exchange), made popular by Novell NetWare networks, and **TCP/IP** (Transmission Control Protocol/Internet Protocol), made popular by the Internet. The HP Jetdirect 170X supports these network protocols, as well as DLC/LLC.

.Customer Support

For warranty information, see the appendices.

HP Support Online

Click your way to a quick solution! The HP Web site at

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

is a great place to start for information about your HP Jetdirect print server – 24 hours a day, 7 days a week.

For the latest Jetdirect installation software and documentation, visit:

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

HP Support By Phone

Highly trained technicians are ready to take your call.

For toll-free phone support in the USA and Canada, call HP support at:

1-800-HPINVENT (1-800-474-6836)

For the most recent HP support telephone numbers and available services worldwide, visit:

http://www.hp.com/support

Note The phone numbers listed may not be toll-free. Telephone fees are the responsibility of the caller. Rates may vary. Contact your local telephone company for current rates.

Product Accessibility

For information on HP's commitment to accessibility of HP Jetdirect print server products:

- Visit the HP Web site at: http://www.hp.com/accessibility
- Send an email to: accessibility@hp.com

Installation

Installation Overview

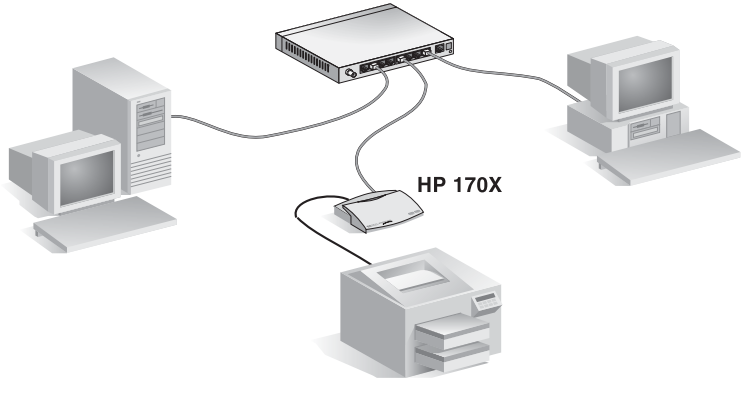


Figure 2.1 HP 170X Installation

- **Hardware installation.** Simply connect the 170X to the network, and connect your printer, plotter, or HP All-In-One device to the 170X using the parallel port connector.
- **Software installation.** Use printer installation software supported by your operating system to add the printer on each computer that will print directly to the printer.
  - You will need the printer driver for your system, typically supplied on a CD-ROM with your printer.
  - The HP Jetdirect CD-ROM contains printer installation software for supported Windows systems on a TCP/IP network. However, printer drivers are not included.

Install the 170X Hardware

Follow the steps below to install the 170X. For technical specifications or part numbers for power modules or parallel cables, see Appendix A.

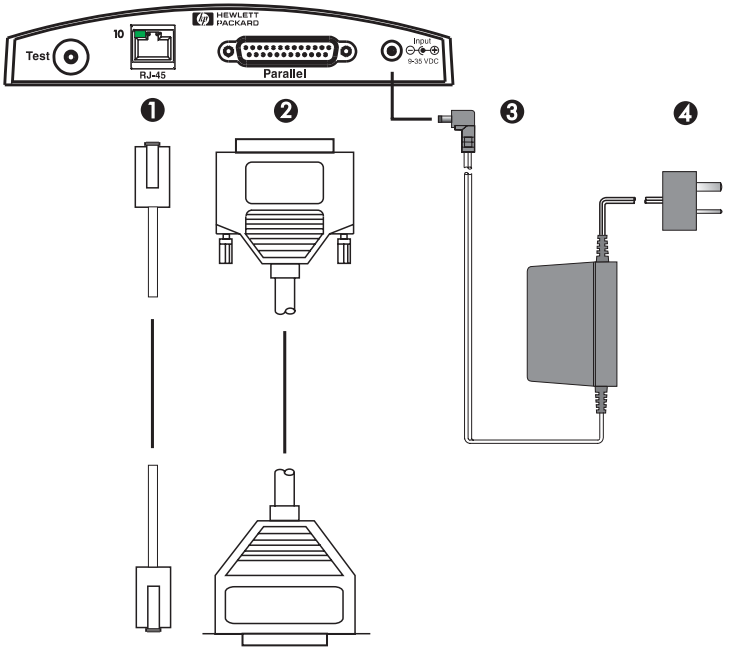


Figure 2.2 Connecting the 170X to the LAN and Printer

1. Connect the 170X to the network with a 10Base-T network cable.
2. Connect the 170X to the printer with an IEEE 1284 parallel cable (Not supplied. See Appendix A for parallel cables available from HP).

Note The 170X does not have a power switch. It is turned on when power is connected through the power module.

3. Plug the DC power cord from the power module into the power port.
4. Plug the 170X power module into a wall outlet.

The 170X should now be turned on.

Verify Hardware Operation

Status Indicator Lights (LEDs)

On the top of the 170X are Status and LAN Activity LEDs. Verify that the Status LED is on or blinking.

Table 2.1 LEDs

If the Status LED is...	And the Activity LED is...	Then the print server is...
Off	Off	Not receiving power.
On	Off	On; no LAN activity detected.
On	Blinking	On; LAN activity detected.
Off	On (Solid)	Encountering a fault during self-test or operation.
Blinking	Off	Encountering one of the following conditions: ● running a self-test. ● not configured. ● not able to attach to the network.
On	On	On; heavy LAN activity detected.

For troubleshooting information, see Chapter 5.

Print a 170X Configuration Page

A configuration page shows print server status and configuration parameter settings. Verify that you can print a 170X configuration page.

1. Press the **Test** button on the back of the 170X to generate a configuration page (see Figure 2.3).

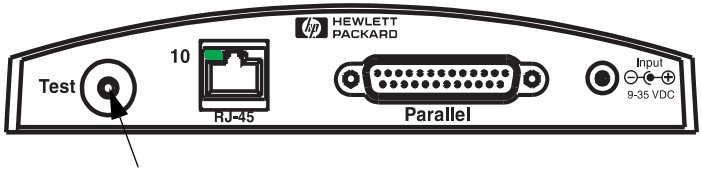


Figure 2.3 Test Button on the back of the 170X

2. The configuration page should print.
3. Verify the message “I/O CARD READY” appears on the configuration page (see Figure 2.4).

For troubleshooting information, see Chapter 5.

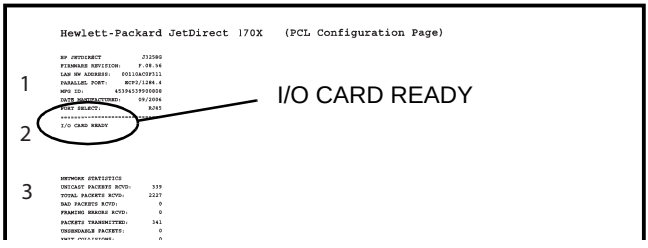
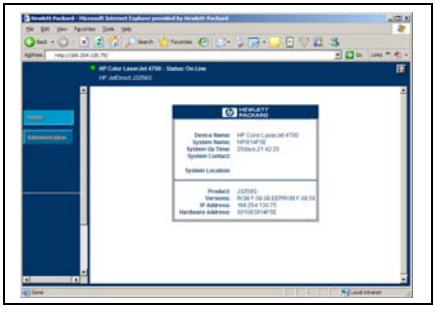


Figure 2.4 170X Configuration Page

If Required, Configure the 170X with Your Network Settings

If your network requires that you configure network settings on the print server before you add the printer to your network systems, you can do so now using available configuration tools. *However, in most cases, you can skip this section.*

Configuration Tools



- For TCP/IP networks, use a Web browser to access the embedded Web server on the HP Jetdirect print server. The Web pages on the print server allow you to configure network parameters. For more information, see Chapter 4
- For TCP/IP networks, use an advanced configuration method. For example, you can set up a BootP or DHCP server that will automatically configure the print server when it is powered on. Or, you can use your system command prompt to manually configure the print server remotely (for example, through Telnet commands).
- Use HP printer management software (such as HP Web Jetadmin) or other network utilities available on your system to configure network parameters.

Note Once the print server is configured with network parameters, the configuration values are saved and maintained even after the print server is turned off and back on again.

Add the Printer to Your Network Server or System

When the printer is configured for operation on your network, you can then add the printer on each computer that will send print jobs directly to the printer. To add the printer to your system configuration, you must use network printer installation software that runs on your system.

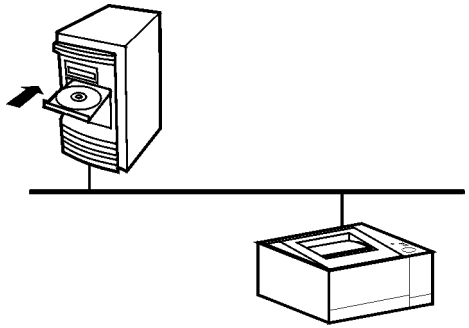


Figure 2.5 Adding a Printer to Your System Configuration

For Windows systems, note the following:

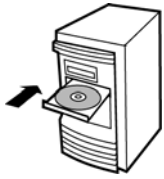
- For HP network-ready printers: Instead of using the HP Jetdirect CD-ROM, installing the printer may be easier if you use the CD-ROM supplied with your network-ready printer. HP network-ready printers provide software to install a network printer while also installing the printer drivers that work with your printer.
- The HP Jetdirect CD-ROM does *not* contain printer drivers. The HP Jetdirect installation sofware requires a printer driver file with the appropriate extension (*.inf) to complete the installation. The printer driver for your printer may be obtained from the following sources:
  - the CD-ROM or software media supplied with your printer
  - HP online support at http://www.hp.com/go/support

Note If you use the installation software on the HP Jetdirect CD-ROM to install MFP or All-in-One devices, some features other than printing may not be available.

To use the HP Jetdirect CD-ROM software, see the next section.

Microsoft Windows Systems

To install the printer on a supported Windows system using the HP Jetdirect CD-ROM utility:



1. Insert the HP Jetdirect CD-ROM into your CD-ROM drive.
2. Wait for the installation utility to start automatically. If necessary, run SETUP.EXE from the root directory of the CD-ROM.
3. When the CD-ROM utility runs, select **Install**. This runs an installation wizard.
4. Follow the instructions on the screens.

Note

The printer installation wizard runs from the CD-ROM. It copies files to a temporary directory on your system, and deletes them when it terminates.

For the latest version of the wizard that can be installed and run from your system disk, visit HP online support at:

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

---

5. When prompted, print a test page to verify printer setup.
   - If the test page successfully prints, then you have completed printer setup on this computer system. If this system was a server, see Client-Server Network Printing below.
   - If the test page fails to print, perform the troubleshooting tasks displayed by the wizard. For additional troubleshooting information, see Chapter 5.

Peer-to-Peer Network Printing

After you have set up the printer on the first system, repeat the steps above for each additional system that will print directly to the network printer.

Client-Server Network Printing

After you have added the printer on the server, you will need to set up your network clients to access the printer through the server. The procedures depend on the available utilities for your particular clients and operating systems.

In most cases, if the printer was installed and shared on a Microsoft server, each Windows client can use the Add Printer utility to access the printer.

For more information, refer to the documentation and help supplied with your client system.

3

TCP/IP Configuration

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.

- By downloading the data from a network-based UNIXserver using BOOTP (Bootstrap Protocol) and TFTP (Trivial File Transfer Protocol) each time the print server is turned on. The factory-default state of the HP Jetdirect print server is to initially use BOOTP/TFTP.

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

- By using Dynamic Host Configuration Protocol (DHCP). This protocol is supported in HP-UX, Solaris, Linux, Windows and Mac OS systems. (Refer to your network operating system manuals to verify that your operating system supports DHCP.) If not configured through BOOTP/TFTP, the HP Jetdirect print server will also attempt to download its configuration from a DHCP server.

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 loaded in the `/etc` directory.

If your HP-UX system 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 available.

- 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. RARP only allows you to configure the IP address.

- By using the `arp` and `ping` commands from your system.
- 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 even if the printer or print server is turned off.
- By browsing to the embedded Web server on the HP Jetdirect print server and setting the configuration parameters.

Using 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.

Note On supported Windows server systems, use the Microsoft DHCP utilities to set up HP Jetdirect configuration via BOOTP. For more information, see "Using DHCP".

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.

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=picasso:ht=ether:vm=rfc1048:\
    :ha=0060b0123456:\
    :ip=192.168.10.248:\
    :sm=255.255.255.0:\
    :gw=192.168.10.1:\
    :lg=192.168.10.2:\
    :T144="hpnp/picasso.cfg":
```

Note that the configuration data contains “tags” to identify the various HP Jetdirect parameters and their settings. The tags are identified in the following table.

Table 3.1 Bootptab File Tags

nodename	The name of the peripheral. This name identifies an entry point to a list of parameters for a specific peripheral. ***nodename*** must be the first field in an entry. (In the example above, ***nodename*** is “picasso”.)
hn	The host name tag. This tag 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.
ht	The hardware type tag. For the HP Jetdirect print server, set this to **ether** (for Ethernet). 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 **LAN HW 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.
gw	The gateway IP address tag. This address identifies the IP address of the default gateway (router) that the print server will use for communications with other subnets.
sm	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.
lg	The syslog server’s IP address tag. It specifies the server that the HP Jetdirect print server sends syslog messages to.
T144	A vendor-specific tag that specifies the relative path name of the TFTP configuration file. Maximum length of the path name is 33 characters. The path name must be in double quotes (for example, ***“pathname”***). On HP-UX systems, `/usr/tftpdir` is prepended to the path. For file format information, refer to “TFTP Configuration File Entries“.

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, 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 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 four 'allow' entries can be written via TFTP.
# Up to 10 'allow' entries can be written via SNMP.
# 'allow' may include single IP addresses.
#
allow: 192.168.10   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: 1homer2
#
# End of file
```

Table 3.2 describes parameters that may be included in the TFTP configuration file.

Table 3.2 TFTP Configuration File Parameters (1 of 3)

ews-config:	Enables or disables the embedded web server on the HP Jetdirect print server. To enable, set to 1. To disable, set to 0.
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 90 seconds.
allow: netnum [mask]	Provides 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: 192.168.10.1 allows a single host. In this case, the default mask 255.255.255.255 is assumed and is not required.
tcp-mss:	Specifies the maximum segment size (MSS) that the HP Jetdirect print server will advertise for use when communicating with local subnets (MSS=1460 bytes or more) or remote subnets (MSS=536 bytes): 0 (default) All networks are assumed to be local (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.

Table 3.2 TFTP Configuration File Parameters (2 of 3)

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`)
contact:	ASCII character string 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.
get-community-name:	Specifies a password that determines which SNMP GetRequests the HP Jetdirect print server will respond to. This is optional. The community name must be ASCII characters. The maximum length is 32 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 32 characters.
trap-dest:	Enters a host's IP address into the HP Jetdirect print server's SNMP trap destination list. If the list is empty, the print server does not send SNMP traps. The list may contain up to four 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 32 characters.
authentication-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 "off."

Table 3.2 TFTP Configuration File Parameters (3 of 3)

telnet:	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.
banner:	A port-specific parameter that specifies printing an LPD banner page. 0 disables banner pages. 1 (default) enables banner pages.

Using DHCP

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.

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 supports "BOOTP Relay" (allows the transfer of BOOTP/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.

If your HP-UX system does not support 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 name services are available.

Windows Systems

HP Jetdirect print servers support IP configuration from a Windows 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/DHCP operation (factory default), the HP Jetdirect print server makes a request to the DHCP server for its IP configuration when the print server is turned on.

Note This information is provided as an overview. For specific information or for additional support, see the information supplied with your DHCP 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 2000 Server/Server 2003

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

1. Run the Windows DHCP manager utility.
   - Windows 2000: Click **Start**, select **Settings** and **Control Panel**. Open the **Administrative Tools folder** and run the **DHCP** utility.
   - Server 2003: Click **Start**, then select **Control Panel**. Open the **Administrative Tools** folder and run the **DHCP** utility.
2. In the DHCP window, locate and select your Windows 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.

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 BOOTP configuration 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.

Enabling or Disabling DHCP

If you do not want your HP Jetdirect print server configured via DHCP, you must reconfigure the print server to use a different configuration method:

1. You can use your Web browser to access the embedded Web server on the print server to choose the configuration method or to modify TCP/IP parameters.
2. You can use Telnet to enable or disable DHCP operation on the HP Jetdirect print server. When you disable a DHCP configuration via Telnet, the print server automatically releases any names and IP addresses associated with the DHCP server and re-initializes the TCP/IP protocol for the print server. At this point, the print server is unconfigured and begins to send BOOTP and RARP requests to acquire new (non-DHCP) configuration information.

   For DHCP configuration via Telnet, refer to "Using Telnet" in this chapter.
3. You can modify the TCP/IP parameters via HP Web Jetadmin.

If you manually provide an IP address when disabling DHCP, the print server still releases its DHCP-provided IP address but does not send BOOTP and RARP configuration requests. Instead, it uses the configuration information you have provided. **Therefore, if you 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 the DHCP configuration state is changed from disabled to enabled, the print server assumes it should acquire its configuration information from a DHCP server. This means that when the session is completed or the print server is reset, 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.

Using RARP

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:

   ```
   192.168.0.1 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:

   ```
   00:60:b0: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 Chapter 5.

Using the arp and ping Commands

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 or UNIX system configured for TCP/IP operation
- HP Jetdirect firmware version F.08.56 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. Depending on the system, the LAN hardware address requires a specific format.

- From a system command prompt (Windows):

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

  `ping` <IP address>

- From a UNIX command prompt:

  `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.

For example:

- In Windows

```
arp -s 192.168.10.1 00-b0-60-a2-31-98
ping 192.168.10.1
```

- In UNIX

```
arp-s 192.168.10.1 00:b0:60:a2:31:98
ping 192.168.10.1
```

Note

Once the IP address has been set on the print server, additional `arp` and `ping` commands will be ignored for configuration. Once the IP address is configured, `arp` and `ping` cannot be used for configuration unless the print server is reset to factory values.

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.

Using Telnet

This subsection describes how to configure the print server 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. Simplistically, this means that there must be a match between the network identification of your system to that of the HP Jetdirect print server.

On Windows systems, you can use the following `route` command at a system command prompt to add a route to the print server:

```
route add <IP address Jetdirect>
<IP address workstation>
```

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

CAUTION Using Telnet to change dynamically-configured Jetdirect print servers (for example, using BOOTP, RARP, DHCP), may result in a static configuration depending on the parameter being changed.

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.

2. When the server responds `connected to IP address`, press **Enter** twice to make sure that the Telnet connection is initialized.

3. If you are prompted for a password, type the correct password.

   By default, Telnet does not require a password, but you can set up to a 14-character password by using the password command (passwd). Once a password is set, password protection is enabled. You can disable password protection by typing `0` (zero) when prompted for a new password, or by performing a cold reset on the print server.

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 additional commands to display. To print current configuration information, type / then press **Enter**.

Note

The Present Config field in the *Telnet Configuration* menu describes how the HP Jetdirect print server is configured. For example, if the HP Jetdirect print server is configured by your BOOTP server, the menu will contain the line, "present config=BOOTP." Other possible configuration types are RARP, DHCP, or User Specified.

Note

On Windows systems **local echo** should be selected. To determine if **local echo** is enabled, perform the following:

- Run Microsoft Telnet and enter the **display** command.

On UNIX systems, it is not necessary to select **local echo**.

4. 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.

   See Table 3.3 for examples on assigning configuration parameters.

5. Repeat step 4 to set any additional configuration parameters.

6. When you have finished typing the configuration parameters, type:

   `quit`

   and press **Enter** to activate the configuration parameters.

   To exit without activating parameters, type `exit` and press **Enter**.

Telnet Configuration Parameter Examples

The examples in Table 3.3 show how to use Telnet configuration commands.

Note If a parameter is supplied by the DHCP server, its value cannot be changed using Telnet without disabling DHCP.

Table 3.3 Telnet Configuration Parameter Examples (1 of 2)

IP Address Parameter Example	`ip: 192.168.10.1`	where `ip` identifies the parameter and `192.168.10.1` specifies the address for the printer. By typing this parameter, you can overwrite the IP address used to make the Telnet connection with one you have selected.
Subnet Mask Example	`subnet-mask: 255.255.255.0`	where `subnet-mask` identifies the parameter and `255.255.255.0` specifies the subnet mask.
Default Gateway Example	`default-gw: 192.168.10.2`	where `default-gw` identifies the parameter and `192.168.10.2` specifies the IP address of the gateway. **Note:** If the HP Jetdirect print server is configured by DHCP and you change the subnet mask or the default gateway address (using front-panel, Telnet, or other tool), you should change the IP address to release the present IP address back to the DHCP server IP address pool.
Syslog Server Example	`syslog-svr: 192.168.10.3`	where `syslog-svr` identifies the parameter and `192.168.10.3` specifies the IP address of that server.
Protocol Enabling/ Disabling Example	`IPX/SPX: 1` `dlc-llc: 1`	(1 enables, 0 disables) (1 enables, 0 disables)
Idle Timeout Parameter Example	`idle-timeout: 120`	where `idle-timeout` identifies the parameter and `120` specifies the number of seconds an idle print data connection is allowed to remain open. If you set this parameter to `0`, the connection does not terminate and no other host is able to make a connection.

Table 3.3 Telnet Configuration Parameter Examples (2 of 2)

Banner Page Parameter Example	`banner: 1`	(1 enables, 0 disables)
Set Community Name Example	`set-cmnty-name: my_network`	where `set-cmnty-name` identifies the parameter and `my_network` specifies the name you want to set. The Set Community Name parameter is a network management security mechanism that enables external network management entities to set internal print server management (mib) values. The name can be from 1 to 32 alpha and numeric characters and can include the underscore (_) symbol.
DHCP Parameter Example	`dhcp-config: 1`	where `dhcp-config:` identifies the Dynamic Host Configuration Protocol. (1 enables, 0 disables)
Host Name Example (to assign or change a name)	`host-name: MY_PRINTER`	where `MY_PRINTER` is an alphanumeric string and must be all uppercase letters.

Using Telnet to Erase the Existing IP Address

To erase the IP address during a Telnet session:

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.

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 Chapter 4.

Moving to Another Network

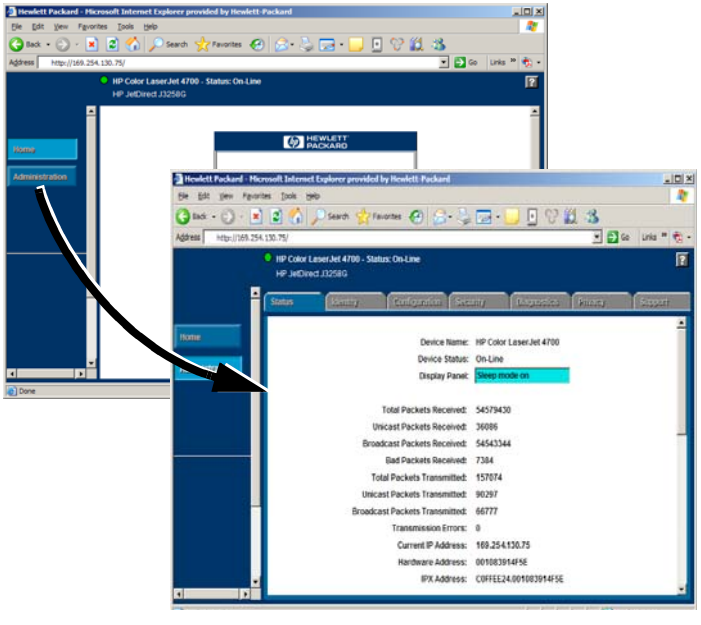
When moving an HP Jetdirect print server that is configured with an IP address to a new network, make sure that the IP address does not conflict with addresses on the new network. You may change the IP address of the print server to one that can be used on the new network, or erase the current IP address and configure another address after you are installed on the new network. Cold reset the print server (see Chapter 5 for instructions).

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, Telnet), reconfigure IP parameters as described in this chapter.

Embedded Web Server

Each HP Jetdirect 170X print server contains an embedded web server that can be accessed through a supported web browser on an intranet. The embedded web server provides access to configuration and management pages for the HP Jetdirect print server and the attached peripheral device.



Compatible Web Browsers

To access the embedded Web server, you must use a compatible Web browser. In general, the embedded Web server can be used with Web browsers that support HTML 4.01 and cascading style sheets.

Hewlett-Packard tests a number of current and older browsers using a variety of systems. In general, we recommend using the following browsers:

- Microsoft Internet Explorer 5.0 or greater
- NetScape Navigator 6.0 or greater
- Mozilla Firefox 1.x or greater

For the latest list of supported web browsers, visit HP online support (http://www.hp.com/go/support).

Browser Exceptions

Due to known problems experienced during testing, we recommend that you do not use the following browsers:

- Netscape Navigator 6.2.x with SSL

Supported HP Web Jetadmin Version

HP Web Jetadmin is a printer installation and management application for intranets and is available from HP online support (http://www.hp.com/go/webjetadmin).

HP Web Jetadmin version 8.0 or later is recommended for operation with the HP Jetdirect 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.

There are many ways to configure an IP address on the print server. 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 Telnet, HP Web Jetadmin, or other management software.

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 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 it.

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

1. Run a supported version of your Web browser.
2. Enter the IP address of the print server as the URL (the one displayed in the following screenshot is an example only).

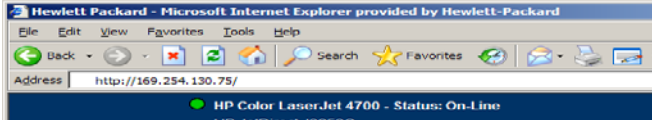


Figure 4.1 Entering the IP Address

The HP Jetdirect main Web page will be displayed. If you have difficulty viewing the page, refer to "Operating Notes".

Special Features

- HP Jetdirect 170X print servers provide scanning capabilities for selected HP All-in-One peripherals. When connected to a supported peripheral, a **Scan** button provides you with access to the scanning feature. For more information, click the "**?**" icon on the *Scan* page.
- If your printer has been discovered through HP Web Jetadmin 8.0 (or later), the embedded web server on the Jetdirect print server will provide a link to HP Web Jetadmin for management of this and other Jetdirect devices on the network.
- A link to HP's Jetdirect Web page is provided. Simply click on the HP logo.

Operating Notes

Changes to the IP address and other parameters will close the connection to the embedded web server. To re-establish a connection, use the new IP address.

Troubleshooting

This chapter describes how to diagnose and correct problems associated with the HP Jetdirect 170X print server. To troubleshoot the 170X, you will need the following items:

- Your printer's user guide
- A 170X configuration page
- Online help files provided with HP management software
- The diagnostics tools and utilities provided with your network software (such as Novell's PCONSOLE or NWADMIN utilities)

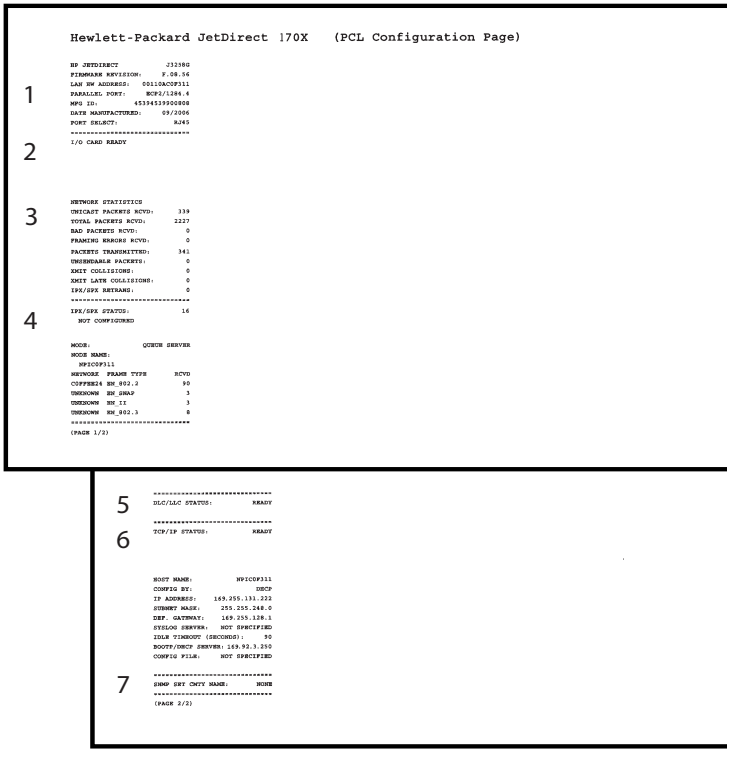
Note Frequently asked questions about installing, configuring or troubleshooting HP Jetdirect print servers can be found at HP online support at:

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

The 170X Configuration Page

The 170X configuration page is an important troubleshooting tool. The information on this page reveals the status of your network and the 170X. The ability to print a configuration page is an indication that the hardware is operating correctly. To generate a configuration page, press the **Test** button on the 170X.

Figure 5-1 HP 170X Configuration Pages



The HP 170X configuration page is divided into the following sections:

Section	Description	Troubleshooting Information
1	HP Jetdirect product information	Firmware revision number, type of network (Ethernet), LAN hardware address, port selection type, and manufacturing identification number.
2	Print server status	Overall print server status, such as error messages or an I/O CARD READY message.
3	Network statistics	Packets received, framing errors, transmit collisions, and other statistics.
4	IPX/SPX (Novell NetWare) status info	Status information for the IPX/SPX protocols, primarily associated with Novell NetWare networks.
5	DLC/LLC status	Status information for the DLC/LLC protocol.
6	TCP/IP status	Status information for TCP/IP configuration.
7	SNMP status	Status information for Simple Network Management Protocol (SNMP) configuration.

For information on configuration page messages, see Chapter 6.

Selecting a Configuration Page PDL

The configuration page is sent to the printer using a page description language (PDL). The PDL is auto-detected the first time the print server is powered on, or after a cold reset to factory-default settings.

If you want to change the PDL, use the LEDs and Test button to select a PDL for the configuration page:

1. Press and hold down the Test button.

   The Status and Activity LEDs will immediately turn on solid. After 3 or 4 seconds, the LEDs will begin cycling through four configurations, each indicating a PDL as specified in the following table. .

For PDL	Status LED	Activity LED
HP PCL (default)	Off	Off
ASCII	Off	On
Postscript	On	Off
HP-GL2	On	On

2. Release the Test button when the desired PDL is indicated.

Resetting Configuration to Factory Defaults

Once you configure the HP Jetdirect 170X, the configuration settings are retained in memory unless you manually reset them to factory defaults.

When troubleshooting the HP Jetdirect 170X, resetting to factory default settings re-initializes the print server to a known state.

To reset the 170X to factory defaults, follow these steps:

1. Unplug the power cord from the 170X.
2. While holding down the Test button on the 170X, plug the power module into the 170X and continue to hold down the Test button for five seconds. Any user-configured settings will be erased.

Troubleshooting Steps

Follow these overall steps to diagnose and resolve the problem:

- Verify the printer works properly.
- Verify the 170X hardware works properly.
- Verify that you can print to the printer when it's attached directly to a PC.

Verify the printer works properly

- Print a printer self-test page (see your printer documentation) to make sure the printer works properly.
- See your printer documentation to interpret the printer self-test page, and to diagnose and correct printer problems.

Verify the 170X hardware works properly

- Attach the printer to the 170X and attach the 170X to the LAN.
- Press the 170X Test button to print a configuration page.
- If a configuration page is printed, the 170X is connected properly. Review the page for status and error messages.

Verify that you can print to the printer when it's attached directly to a PC

- Attach the printer to a PC locally using a parallel cable that you know works properly.
- Print a file to the printer attached directly to your PC.
- If the file still does not print, you may have a printer driver or parallel cable problem.

6

HP Jetdirect Configuration Page Messages

Introduction

This chapter describes the messages, network statistics, and status that can be printed on a Jetdirect configuration page.

These messages include configuration information and error messages for each network operating system. The configuration information for individual networks is listed in the following tables:

- **Table 6.1** — HP Jetdirect Product Information
- **Table 6.2** — General HP Jetdirect Messages (status and error messages listed in alphabetical order)
- **Table 6.3** — Network Statistics
- **Table 6.4** — IPX/SPX (NetWare) Configuration Messages
- **Table 6.5** — DLC/LLC Configuration Messages
- **Table 6.6** — TCP/IP Configuration Messages
- **Table 6.7** — SNMP Messages

Table 6.1 HP Jetdirect Product Information

Message	Description
HP JETDIRECT JXXXXX	Identifies the HP Jetdirect print server model number.
FIRMWARE REVISION: X.XX.XX	The firmware revision number of the HP Jetdirect print server currently installed in the printer (for example, F.08.56).
LAN HW ADDRESS: XXXXXXXXXXXX	The 12-digit hexadecimal network address of the HP Jetdirect print server.
PARALLEL PORT:	(HP 170X print servers have a single parallel port, port 1) CENTRONICS indicates a standard parallel connection that transfers data in one direction only (to the printer). BIDIRECTIONAL indicates a parallel connection that supports bidirectional communications. MLC, ECP2/MLC, ECP2/1284.3, 1284.3, ECP2/1284.4 or 1284.4 indicates a bidirectional parallel connection (IEEE-1284) that supports an enhanced capabilities port.
MFG ID:	The manufacturing identification code.
DATE MANUFACTURED	Identifies the date of manufacture of the HP Jetdirect print server.
PORT SELECT:	Specifies the LAN port on the print server that has been detected for use: RJ-45. If NONE or DISCONNECTED is displayed, verify that the network cable has been properly attached to the desired port.
WEBJA SERVER xxx.xxx.xxx.xxx	If displayed, identifies the IP address or domain name of the server that the HP Jetdirect print server uses for Web Jetadmin services.

Table 6.2 General HP Jetdirect Messages (1 of 13)

Message	Description
ARP DUPLICATE IP ADDRESS	The ARP layer has detected another node on the network using the same IP address as the HP Jetdirect print server. Extended error information below this message shows the hardware address of the other node.
BABBLE ERROR	Run the power-on self-test: turn the print server off, then on again. If the error persists, replace the HP Jetdirect print server. For information on replacing your HP Jetdirect print server, see the warranty service information.
BAD BOOTP REPLY	An error was detected in the BOOTP reply that the HP Jetdirect print server received. The BOOTP reply either had insufficient data in the UDP datagram to contain the minimum BOOTP header of 236 bytes, had an operation field that was not BOOTPREPLY(0X02), had a header field that did not match the print servers hardware address, or had a UDP source port that was not the BOOTP server port (67/udp).
BAD BOOTP TAG SIZE	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.
BOOTP/DHCP IN PROGRESS	The HP Jetdirect print server is currently in the process of obtaining its basic IP configuration information through BOOTP/DHCP, and has not detected any errors.
CF ERR - ACCESS LIST EXCEEDED	The TFTP configuration file specified too many access list entries using the “allow:” keyword.
CF ERR - FILE INCOMPLETE	The TFTP configuration file contained an incomplete last line that did not end in a newline character.
CF ERR - INVALID PARAM	A line in the TFTP configuration file contained an invalid value for one of the parameters on that line.
CF ERR - LINE TOO LONG	A line being processed in the TFTP configuration file was longer than the HP Jetdirect print server could accept.

Table 6.2 General HP Jetdirect Messages (2 of 13)

Message	Description
CF ERR - MISSING PARAM	A line in the TFTP configuration file was missing a required parameter.
CF ERR - TRAP LIST EXCEEDED	The TFTP configuration file specified too many trap destination list entries using the “trap-destination:” keyword.
CF ERR - UNKNOWN KEYWORD	A TFTP configuration file line contained an unknown keyword.
CONFIGURATION ERROR	The configuration information for the NetWare functions is not stored correctly on the HP Jetdirect print server. Reconfigure the print server. If this error persists, there may be a problem with the HP Jetdirect print server.
CRC ERROR	Check the network topology and verify all cable segments. Check for damaged cables.
DHCP NACK	After several attempts, the DHCP server has failed to acknowledge the configuration. The Jetdirect print server will restart the configuration process.
DISCONNECTED	The Novell NetWare protocol is disconnected. Check the server and the print server.
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 offline, is in an error state, or is servicing another I/O port or another network protocol.
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.

Table 6.2 General HP Jetdirect Messages (3 of 13)

Message	Description
ERR NEGOTIATING BUFFER SIZE	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.
FAIL RESERVING PRINTER NUM	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.
FRAMING ERROR	Check the network topology and verify all cable segments. Check for damaged cables.
INITIALIZING 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 the connection is established or another status message appears.
INVALID GATEWAY ADDRESS	The default gateway IP address specified for the HP Jetdirect print server (through BOOTP or NOVRAM) is an invalid IP address for specifying a single node.
INVALID IP ADDRESS	The IP address specified for the HP Jetdirect print server (through BOOTP or NOVRAM) is an invalid IP address for specifying a single node.
INVALID SERVER ADDRESS	The TFTP server IP address specified for the HP Jetdirect print server (through BOOTP) is an invalid IP address for specifying a single node.
INVALID SUBNET MASK	The IP subnet mask specified for the HP Jetdirect print server (through BOOTP or NOVRAM) is an invalid subnet mask.

Table 6.2 General HP Jetdirect Messages (4 of 13)

Message	Description
INVALID SYSLOG ADDRESS	The syslog server IP address specified for the HP Jetdirect print server (through BOOTP) is an invalid IP address for specifying a single node.
INVALID TRAP DEST ADDRESS	One of the SNMP trap (Trap PDU) destination IP addresses specified for the HP Jetdirect print server (through TFTP) is an invalid IP address for specifying a single node.
I/O CARD INITIALIZING (INIT)	The HP Jetdirect print server is initializing the network protocols. For more information, see the network protocol status lines on the configuration page.
I/O CARD NOT READY	There is a problem with the print server or its configuration. Following the I/O CARD NOT READY message is a status message. See this table for a detailed explanation of all status messages.
I/O CARD READY	The HP Jetdirect print server is connected and awaiting data.
LAN ERROR-AUTO REMOVAL	Run the power-on self-test: turn the print server off, then on again. If this message reappears on another configuration page, you may have a problem with one of the HP Jetdirect print servers on your network. Check all the print servers on the network for proper operation.
LAN ERROR-BABBLE	Check the network connections. If the connections are intact, run the power-on self-test: turn the print server off, then on again. If the error persists, replace the HP Jetdirect print server. For replacement instructions, see the warranty service information.
LAN ERROR-CONTROLLER CHIP	Check the network connections. If the connections are intact, run the power-on self-test: turn the print server off, then on again. If the error persists, replace the HP Jetdirect print server.

Table 6.2 General HP Jetdirect Messages (5 of 13)

Message	Description
LAN ERROR-EXTERNAL LOOPBACK	The HP Jetdirect print server is incorrectly connected to your network or is defective. Make sure your HP Jetdirect print server is correctly attached to your network. In addition, check the cabling and connectors.
LAN ERROR-INFINITE DEFERRAL	There is a network congestion problem. Check network cables. **Note:** If the print server is not connected to the network, this error cannot occur.
LAN ERROR-INTERNAL LOOPBACK	Check all network connections.
LAN ERROR-LOSS OF CARRIER	Check the network connections. If the connections are intact, run the power-on self-test: turn the print server off, then on again. If the error persists, replace the HP Jetdirect print server.
LAN ERROR-NO LINKBEAT	This message is displayed if Link Beat is not sensed. Check the network cable, and verify that the concentrator/hub is providing Link Beat.
LAN ERROR-NO SQE	Check the network connections. If the connections are intact, run the power-on self-test: turn the print server off, then on again. If the error persists, replace the HP Jetdirect print server.
LAN ERROR-RECEIVER OFF	There may be a problem with your network cabling or the HP Jetdirect 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: turn the print server off, then on again. If the error persists after the printer is turned on again, there is a problem with the HP Jetdirect print server.
LAN ERROR-REMOVE RECEIVE	Run the power-on self-test: turn the print server off, then on again. If this message reappears on the resulting configuration page, you may have a problem with one of the HP Jetdirect print servers on your network. Check all the HP Jetdirect print servers on the network for proper operation.

Table 6.2 General HP Jetdirect Messages (6 of 13)

Message	Description
LAN ERROR-RETRY FAULTS	There is a problem with your network cabling or external network configuration. Check the network cables and connections. Verify operation of the hub or switch port.
LAN ERROR-TRANSMITTER OFF	There may be a problem with your network cabling or the HP Jetdirect 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: turn the print server off, then on again. If the error persists, there is a problem with the HP Jetdirect print server.
LAN ERROR-UNDERFLOW	There may be a problem with your network cabling or the HP Jetdirect 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: turn the print server off, then on again. If the error persists, there is a problem with the HP Jetdirect print server.
LAN ERROR-WIRE FAULT	There is a problem with the network cabling. Check the cabling between the printer and the network.
LATE COLLISION ERROR	Check the network topology, verify all cable segments, and make sure no segment is too long.
LOSS OF CARRIER ERROR	Check the network connections. If the connections are intact, run the power-on self-test: turn the print server off, then on again. If the error persists, replace the HP Jetdirect print server.
MEMORY ERROR	Run the power-on self-test: turn the print server off, then on again. If the error persists, replace the HP Jetdirect print server.
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.
NDS CONNECTION STATE ERROR	The HP Jetdirect print server cannot change the NDS connection state. Check licenses on the spooling server.

Table 6.2 General HP Jetdirect Messages (7 of 13)

Message	Description
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.
NDS ERR: CHANGE PSSWD FAILED	Cannot modify the print server password to the value expected by the HP Jetdirect print server.
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.
NDS ERR: INVALID SRVR VERS	The current version of the NetWare file server is not supported.
NDS ERR: MAX PRINT OBJECTS	Too many printer objects are assigned to the print server object. Reduce the number of printer objects assigned to the print server using NWADMIN.
NDS ERR: MAX QUEUE OBJECTS	Too many print queue objects are assigned to the printer. Reduce the number of queues assigned.
NDS ERR: NO PRINTER OBJECTS	No printer objects are assigned to the print server object configured to this HP Jetdirect print server.
NDS ERR: NO QUEUE OBJECTS	No print queue objects are assigned to the printer objects located in the NDS directory.
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.
NDS ERR: UNABLE TO FIND TREE	The NDS tree cannot be located. The message may be caused because the file server is not running or because a network communications problem exists.
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.
NDS ERR: UNRESOLVD PRNTR OBJ	The printer object cannot be located in the NDS directory.

Table 6.2 General HP Jetdirect Messages (8 of 13)

Message	Description
NDS ERR: UNRESOLVED QUEUE	The print queue object cannot be located in the specified NDS context.
NDS PRINT OBJ QUEUE LIST ERROR	The list of print queues assigned to the printer objects cannot be located.
NDS PRINT SERVER NAME ERROR	The print server object cannot be located in the specified NDS context.
NDS PRINTER OBJ NOTIFY ERR	The list of notification objects assigned to the printer object cannot be located.
NDS PRNT SRVR PUBLIC KEY ERR	Print Server Object Name mismatch. Verify object names.
NDS PS PRINTER LIST ERROR	Cannot locate a list of printers objects that should be assigned to the print server object.
NDS SRVER PUBLIC KEY ERR	Print Server Object Name mismatch. Verify object names.
NO QUEUE ASSIGNED	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.
NOT CONFIGURED	The HP Jetdirect print server has not been configured for NetWare.
NOVRAM ERROR	The HP Jetdirect print server cannot read the contents of its NOVRAM.
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.
OVERFLOW ERROR	Run the power-on self-test: turn the print server off, then on again.

Table 6.2 General HP Jetdirect Messages (9 of 13)

Message	Description
PASSWORD ERROR	The HP Jetdirect print server detected that the password for the NetWare print server object is wrong. Use the PCONSOLE utility 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.
POSTSCRIPT MODE NOT SELECTED or POSTSCRIPT UPDATE NEEDED	The printer does not support the EtherTalk extensions. It may be a printer which does not support AppleTalk. When this message is displayed, the other AppleTalk messages (ADDRESS, APPLETALK NAME, ZONE NAME) are not displayed.
PRINT SERVER NOT DEFINED	The file server does not have a print server object that corresponds to the specified NetWare node name. Use appropriate NetWare tools 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.
PRINTER NUMBER IN USE	The 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.
PRINTER NUMBER NOT DEFINED	The printer number you assigned to the remote printer has not been defined. Assign a valid printer number using appropriate NetWare tools.
PSERVER CLOSED CONNECTION	The network server requested a termination of the connection with the HP Jetdirect print server. No error exists or is indicated. Make sure the print server is running, and restart it if necessary.

Table 6.2 General HP Jetdirect Messages (10 of 13)

Message	Description
READY	The HP Jetdirect print server has successfully connected to the server and is awaiting data.
RECEIVE BUFFER ERROR	Run the power-on self-test: turn the print server off, then on again. If the error persists, replace the HP Jetdirect print server.
RETRY ERROR	Check the Ethernet cable. Make sure your HP Jetdirect print server is correctly attached to your network.
SQE ERROR	Run the power-on self-test: turn the print server off, then on again. If the error persists, replace the HP Jetdirect print server.
TFTP IN PROGRESS	The HP Jetdirect print server is currently in the process of obtaining its basic IP configuration information through TFTP and has not detected any errors.
TFTP LOCAL ERROR	The TFTP transfer of the configuration file from the host to the HP Jetdirect print server failed due to some form of inactivity timeout, or excessive retransmissions.
TFTP REMOTE ERROR	The TFTP transfer of the configuration file from the host to the HP Jetdirect print server failed with the remote host sending a TFTP ERROR packet to the print server.
TFTP RETRIES EXCEEDED	The overall retrying of the TFTP transfer of the configuration file from the host to the HP Jetdirect print server has exceeded a retry limit.
TRANSMIT ERROR	Check the network topology and verify all cable segments.
TRYING TO CONNECT TO SERVER	The HP Jetdirect print server is trying to connect to the print server or NetWare file server after being configured. Wait for the print server to establish a connection with the print or file server.

Table 6.2 General HP Jetdirect Messages (11 of 13)

Message	Description
TURN PRINTER OFF/ ON	This message may appear after you upgrade to a new version of firmware. When this message appears, turn the print server off, then back on to enable any new functionality that was recently downloaded.
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.
UNABLE TO CONNECT TO SERVER	**Remote Printer mode:** The HP Jetdirect print server was unable to establish an SPX connection with the print server. Make sure that the print server is running and that all cables and routers are functioning correctly. **Queue Server mode:** 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.

Table 6.2 General HP Jetdirect Messages (12 of 13)

Message	Description
UNABLE TO FIND SERVER	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.
UNABLE TO GET NDS SRVR ADDR	The NDS server address cannot be located or accessed.
UNABLE TO LOGIN	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 because of 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.
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.

Table 6.2 General HP Jetdirect Messages (13 of 13)

Message	Description
UNABLE TO SET PASSWORD	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.
UNDERFLOW ERROR	Check the cabling and connectors. If the error persists, run the power-on self-test: turn the print server off, then on again. If the error persists, replace the HP Jetdirect print server.
UNEXPECTED PSERVER DATA RCVD	The HP Jetdirect print server received data without providing permission to do so. This indicates a possible software problem.
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.

Table 6.3 Network Statistics (1 of 2)

Message	Description
UNICAST PACKETS RCVD:	Number of frames specifically addressed to this HP Jetdirect print server. This does not include broadcasts or multicasts.

Table 6.3 Network Statistics (2 of 2)

Message	Description
TOTAL PACKETS RCVD:	Total number of frames (packets) received by the HP Jetdirect 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.
BAD PACKETS RCVD:	Total number of frames (packets) received by the HP Jetdirect print server with errors.
FRAMING ERRORS RCVD:	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.
PACKETS TRANSMITTED:	Total number of frames (packets) transmitted without error.
UNSENDABLE PACKETS:	Total number of frames (packets) not successfully transmitted because of errors.
XMIT COLLISIONS:	Number of frames not transmitted because of repeated collisions.
XMIT LATE COLLISIONS:	Total number of frames not transmitted because a late collision occurred. A large number may indicate a cabling problem on the network.
IPX/SPX RETRANS:	Number of retransmissions necessary because a remote node did not acknowledge receipt of a frame sent to it. Excessive retransmissions may degrade performance or indicate developing network hardware or congestion problems.

Table 6.4 IPX/SPX (NetWare) Configuration Messages (1 of 2)

Message	Description
IPX/SPX STATUS:	Indicates the current IPX/SPX protocol status. DISABLED indicates that IPX/SPX was manually disabled. READY indicates the HP Jetdirect print server is awaiting data. INITIALIZING indicates that the print server is registering the node address or name. See Table 6.2 for other general messages displayed.
MODE:	The mode used by the print server. QUEUE SERVER indicates that the print server receives data directly from the queue; REMOTE PRINTER, with the printer number following it, indicates that the print server emulates a Novell remote printer. If the printer is not configured, this field displays QUEUE SERVER.
NODE NAME:	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 are the last six digits of the LAN Hardware address. Remote Printer Mode: The name you gave the network printer when you configured the network printer. The default name is NPIXXXXXX.

Table 6.4 IPX/SPX (NetWare) Configuration Messages (2 of 2)

Message	Description
NETWORK XXXXXX FRAME TYPE XXXXX RCVD XXXX	The first column (NETWORK) indicates the network number associated with the protocol frame type for communication between server and printer. Unless a specific frame type has been manually configured, the print server automatically determines the protocol frame type by listening to the NetWare data being transferred over the network. If UNKNOWN is listed, the HP Jetdirect print server is still trying to determine which network number to use. If the network number is DISABLED, a specific frame type has been manually configured. In the second column, the Frame Type value can be EN_8023, EN_8022, EN_II, or EN_SNAP. The RCVD count indicates how many packets have been received for each frame type.

Table 6.5 DLC/LLC Configuration Messages

Message	Description
DLC/LLC STATUS:	Current DLC/LLC status: DISABLED: Indicates that DLC/LLC was manually disabled through the printer's control panel (if available). DISABLED: Indicates that LAN Server was manually disabled through the printer's control panel (if available). READY: Indicates the HP Jetdirect print server is awaiting data. NOT IN USE: Code is in the middle of a download. See Table 6.2 for other general messages displayed.

Table 6.6 TCP/IP Configuration Messages (1 of 2)

Message	Description
TCP STATUS:	Current TCP status. DISABLED: Indicates that TCP/IP was manually disabled. READY: Indicates the HP Jetdirect print server is awaiting data. INITIALIZING: Indicates that the print server is searching for the BOOTP server, or trying to get the configuration file through TFTP. NOT IN USE: Code is in the middle of a download. See Table 6.2 for other general messages displayed.
HOST NAME:	The host name configured on the print server. It may be truncated. NOT SPECIFIED indicates that no host name was specified in the BOOTP configuration information, or TFTP configuration file (using a “name:” entry).
CONFIG BY	The location from which the print server is obtaining or has obtained its IP configuration information. The options are BOOTP, RARP, default IP, BOOTP/TFTP, DHCP, DHCP/TFTP, or USER SPECIFIED (Telnet, printer’s control panel, HP Web Jetadmin, or other).
IP ADDRESS:	The Internet Protocol (IP) address assigned to the HP Jetdirect print server. This is a required entry for operation of the print server.
SUBNET MASK:	The IP subnet mask configured on the HP Jetdirect print server. NOT SPECIFIED is indicated if no subnet mask has been configured, or if the subnet mask is zero.
DEF. GATEWAY:	The IP address of the gateway used when sending packets off the local network. Only one default gateway may be configured.

Table 6.6 TCP/IP Configuration Messages (2 of 2)

Message	Description
SYSLOG SERVER:	Marks the IP address of the syslog server configured on the print server. NOT SPECIFIED indicates no syslog server has been configured, or the syslog server IP address is zero.
IDLE TIMEOUT:	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. A value of zero turns off the timeout mechanism.
BOOTP SERVER	The IP address of the system that responds to the print server's BOOTP request with configuration data. This parameter is omitted when the print server is not configured using BOOTP. NOT SPECIFIED indicates that the server's IP address field in the BOOTP reply packet was zero.
DHCP SERVER	The IP address of the system that responds to the print server's DHCP request with configuration data. This parameter is omitted when the print server is not configured using DHCP.
CONFIG FILE:	The name of the HP Jetdirect configuration file. The file pathname may be truncated to fit on two lines. This parameter is omitted when the print server is configured from the printer's control panel. NOT SPECIFIED indicates that a file was not specified in the BOOTP reply from the host.

Table 6.7 SNMP Messages

Message	Description
SNMP SET CMTY NAME: NONE or SPECIFIED	Indicates whether or not an IP SNMP set community name has been configured for the print server. This parameter is omitted when the print server is configured from the printer's control panel. NONE indicates that the print server will not accept any SNMP community names for SetRequests. SPECIFIED indicates that a specific SNMP set community name is configured.
SNMP GET CMTY NAME: ALL or SPECIFIED	Indicates whether or not an IP SNMP get community name has been configured for the print server. This parameter is omitted when the print server is configured from the printer's control panel. ALL indicates that the print server will accept all SNMP community names for GetRequests. SPECIFIED indicates that a specific SNMP get community name is configured.

A

Specifications and Regulatory Statements

Specifications

Supported Networks

HP J3258G Jetdirect 170X Print Server supports Ethernet or IEEE 802.3 Type 10Base-T networks using unshielded twisted-pair cable and RJ-45 connectors. It requires a 10Base-T network hub or concentrator that supports link beat (link test pulse) signals.

Supported network protocols include TCP/IP, IPX/SPX, and DLC/LLC.

Hardware

Physical Specifications

Product Number	Width	Height	Depth*	Weight
J3258G	180 mm (7.09 in.)	33 mm (1.3 in.)	115 mm (4.53 in.)	224 g (0.49 lbs.)
*Measurement includes any protrusions, such as connectors.				

Connections

Network Port*	RJ-45 connector. Complies with Ethernet/IEEE 802.3 Type 10Base-T standards. Four pairs of unshielded twisted-pair Category 3, 4, or 5 cable may be used.
Parallel Port	DB25 female connector. Complies with IEEE 1284 bidirectional parallel port standard for connection to printers, plotters and HP All-in-One peripherals.
*The HP 170X requires connection to a network port (such as a LAN hub or concentrator port) that supports 10Base-T link beat (link test pulse) signals.	

Power Modules

Location	Power Adapter*	Power Cord Assembly**
USA and Canada, Latin America 110-120 Vac (except as noted below)	0957-2228	None
	0957-2229	8121-1023
Latin America 220-240 Vac (except as noted below), Continental Europe (except as noted below), South Korea	0957-2229	8121-1015
Denmark	0957-2229	8121-1011
Chile	0957-2229	8121-1012
India	0957-2229	8121-1013
Brazil, Thailand, Philippines	0957-2229	8121-1014
Australia and New Zealand	0957-2229	8121-1016
United Kingdom, Ireland, Hong Kong SAR, Singapore	0957-2229	8121-1017
Japan	0957-2229	8121-1018
China	0957-2229	8121-1019
Taiwan	0957-2229	8121-1020
Argentina	0957-2229	8121-1021
Switzerland	0957-2229	8121-1022
South Africa	0957-2229	8121-1028
Israel	0957-2229	8121-1032
Malaysia	0957-2234	8121-1017

* 0957-2228 Power adapter, AC-DC, 15W, USA Wall Adapter.
0957-2229 and 0957-2234 Power adapter, AC-DC, 15W, Universal In-Line Adapter.

** 3-conductor, 0.5 Meter power cords. For optional power cord lengths, contact HP Support.

Japanese Power Cord Statement

製品には、同梱された電源コードをお使い下さい。
同梱された電源コードは、他の製品では使用出来ません。

Environmental

Parameter	170X Operating	170X Non-Operating
Temperature	0 ℃ to 55 ℃ (32 ℉ to 131 ℉)	-40 ℃ to 70 ℃ (-6 ℉ to 158 ℉)
Relative Humidity	15% to 95% at 40 ℃ (104 ℉) non-condensing	90% at 65 ℃ (149 ℉)
Altitude	4.6 km	4.6 km

Acoustic Noise: Not Applicable

Electromagnetic Emissions

FCC part 15 Class A (U.S.A.), ICES-003 (Canada), VCCI Class A (in Japan), CISPR-22/EN55022 Class A, CNS 13438 (Taiwan), AS/NZS 3548 (Australia/New Zealand), GOST 29216 (Russia)

Safety

Product complies with:

EN60950:2000

NOM-019-SCFI-1994 and NOM-001-SCFI-1993

Accessories

This product requires a parallel cable compatible with IEEE 1284. Optional cables available from HP are listed below.

HP parallel cables (IEEE 1284 compatible)	2.0 meter parallel cable (36-pin Centronics male to DB25 male)	C2950A
	3.0 meter parallel cable (36-pin Centronics male to DB25 male)	C2951A

Regulatory Statements

FCC Statement (U.S.A)

Caution Pursuant to Part 15.21 of the FCC Rules, any changes or modifications to this equipment not expressly approved by the Hewlett-Packard Company, may cause harmful interference and void the FCC authorization to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause interference to radio communications. Operation of this equipment in a residential area is likely to cause interference in which case the user will be required to correct the interference at their own expense.

Attaching this product in an FCC Level B product results in an FCC Level A Composite System as defined in the FCC Rules and Regulations.

The Federal Communications Commission has prepared a booklet titled Interference Handbook (1986), which may be helpful to you. This booklet (stock number 004-000-004505-7) may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

For further information, contact:

Manager of Corporate Product Regulations
Hewlett-Packard Company
3000 Hanover Street
Palo Alto, California 94304
(650) 857-1501

Regulatory Model Identification Number

For regulatory identification purposes, this product is assigned a Regulatory Model Number. The Regulatory Model Number for your product is RSVLD-0605. This regulatory number should not be confused with the marketing name (HP Jetdirect 170X) or product number (J3258G).

European Community

This equipment complies with CISPR22/EN55022 Class A. This is a Class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

Canada

This Class A digital apparatus complies with Canadian ICES-003.

Cet appereil numerique de la classe A est conforme a la norme NMB-003 du Canada.

Japan VCCI Class A

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Ａ情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

China Class A

此为A级产品，在生活环境中，该产品可能会造成无线电干扰。在这种情况下，可能需要用户对其干扰采取切实可行的措施。

Korea RRL

사용자 안내문 : A 급기기

이기기는 업무용으로 전자파 적합등록을 받은 기기이오니, 판매자 또는 사용자는 이점을 주의하시기 바라며, 만약 잘못 구입하셨을 때에는 구입한 곳에서 비업무용으로 교환하시기 바랍니다.

Taiwan Class A

警告使用者：這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

Warranty Service

HEWLETT-PACKARD LIMITED WARRANTY STATEMENT

HP PRODUCT	DURATION OF LIMITED WARRANTY
HP Jetdirect 170X Print Server (J3258G)	1 year

1. HP warrants to you, the original end-user customer, that HP hardware and accessories will be free from defects in materials and workmanship after the original 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. If the original end-user customer transfers the HP hardware and accessories to another user, warranty service is available to that user only for the remainder of the original warranty period. This Limited Warranty applies only to authentic HP-branded hardware products sold by or leased from Hewlett-Packard Company, its worldwide subsidiaries, affiliates, authorized resellers, or authorized country/region distributors.

2. HP warrants to you that HP software will not fail to execute its programming instructions after the date of purchase, for a period specified above, due to defects in material and workmanship when properly installed and used. If HP receives notice of such defects during the warranty 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. 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/regions, 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/region to country/region,

state to state, or province to province.

7. HP's limited warranty is valid in any country/region 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/region for which it was never intended to function for legal or regulatory reasons.

8. 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/regions, 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.

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.

During the warranty period, HP will replace the unit at no charge provided the defective unit is returned. You may return the unit to your HP Authorized Dealer or your local HP Sales and Service Office representative. *Be sure to include a copy of your purchase receipt.*

For warranty service on HP Jetdirect products, call HP support. When calling, please have the following information ready:

- HP Jetdirect product you are calling about.
- Model number of the product.
- Serial number of the product.
- Complete description of the problem.
- Proof of purchase of your product.
- Your shipping address.

The HP support representative will help you with troubleshooting, and advise you on warranty service.

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).

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.

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.

Incompatible Peripherals

Even though they provide a standard parallel port, several kinds of HP printers are not supported for Jetdirect networking on traditional networks due to incompatibility or lack of necessary features.

Graphical Device Interface (GDI) printers, also called host-based printers, are not supported. These printers conform to the Windows GDI standard for representing and transmitting graphical objects, and rely on the computer's processor to rasterize print jobs.

Printer Performance Architecture (PPA) printers, used by some HP Deskjet printers, are not supported. PPA printers handle only basic printer functions, relying on computer printer software for formatting and other functions.

Both GDI and PPA printers do not support the Page Description Languages (PDLs) required for communications with the print server.

Examples of incompatible printers are listed in Table C.1. This list should not be considered complete or current.

Table C.1 Some Incompatible Printers

HP PPA or CGI Printers	HP Deskjet 710c, 712c, 720c, 722c, 820Cxi/820Cse series, 825c, 1000c/1000Cxi/1000Cse series HP Photosmart Original series, P1000/1000/1215/ 1215vm series HP Laserjet 3100, LaserJet 1000 series

Due to the variety of both HP and non-HP printers that support parallel-port connections, the use of HP Jetdirect print servers for network connectivity and access to printer features is not assured. To enhance the chances of success, note the following:

- The printer software and driver must be usable over a network.
- The HP Jetdirect print server must be able to print a Jetdirect Configuration Page when connected to the printer.
- While the print server will automatically attempt to sense and configure the appropriate parallel communication mode to use with the printer, printing may not be successful. You can try to force Centronics mode communications, which is often successful with some HP printers . To set this mode, access the print server's embedded Web server configuration tool. On the **Administration** > **Configuration** page, select **Centronics** in the list of **Preferred Parallel Mode** configuration options.

FTP Printing

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 utility, such as Telnet.

Requirements

FTP printing requires the following:

- HP Jetdirect print servers with firmware version F.08.56 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 online support 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.

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 three 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. Once an FTP session is opened, it remains active until either the client closes the connection or the connection is idle for 900 seconds (15 minutes).

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 only one 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. Although some clients may attempt to autonegotiate a transfer type, the default is ASCII. 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.

If the connection is successful, the HP Jetdirect model and firmware version 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. For an example of a successful login, see “Example of an FTP Session.”

Ending the FTP Session

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

Commands

The following table summarizes commands available to the user during an FTP printing session.

Table D.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.
`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.
`ls`	
`pwd`	Displays the current directory or the current Jetdirect printing port.

Table D.1 User Commands for HP Jetdirect FTP Server

Command	Description
`put <filename>`	`<filename>` specifies the file to send to the selected HP Jetdirect print server port. The complete command is: `put <filename> <port#>` where `<port#>` is port1 and is the default 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.
`rhelp`	Displays the FTP commands supported.

Example of an FTP Session

This is an example of a typical FTP printing session:

```
System> ftp 192.168.10.1
Connected to 192.168.10.1
220 JD FTP Server Ready
Name (192.168.10.1:root): Deke
331 Username OK, send identity (email name) as password.
Password:
230- Hewlett-Packard J3258G FTP Server Version 1.0
Directory:       Description:
-----------------------------
PORT1 (default)   Print to port 1 (HP LaserJet 4000)
Ready to print to PORT1
230 User logged in.
Remote system type is UNIX.
Using binary mode to transfer files.
ftp> pwd
257  "/" is current directory. (default port is PORT1:
HP LaserJet 4000)
ftp> cd port1
250 CWD command successful
ftp>pwd
257  "/PORT1" is current directory. (HP LaserJet 4000)
ftp> bin
200 Type set to I
ftp> put test
200 PORT command successful
150 Opening data connection...
226 Transfer complete.
18 bytes sent in 0.00 seconds (37.40 Kbytes/s)
ftp> quit
221 Goodbye
System>
script done on Mon Apr 12 16:50:24 2006
```

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