HP Jetdirect Print Server
620n Setup Guide

Setup Guide

HP Jetdirect Print Server

Model 620n (EIO)

Applicable Products:

J7934G

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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.

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Introduction

HP Jetdirect EIO internal print servers are network interface cards for HP Enhanced Input/Output (EIO) printers and MFP (multifunction peripheral) products. With an HP Jetdirect print server, you can connect and share your printer anywhere on your network and print at network speeds.

HP Jetdirect EIO print servers support connection to Fast Ethernet (IEEE 802.3/802.3u 10/100Base-TX) networks. The print server provides a single RJ-45 connector port for a network connection using an unshielded, twisted-pair network cable. See Figure 1-1.

Figure 1-1   HP Jetdirect EIO Print Server
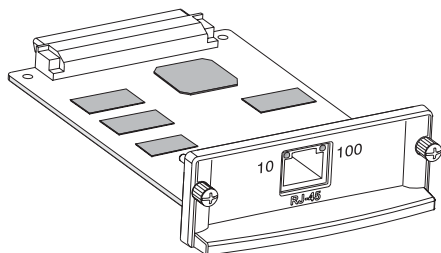
When connected and powered on, the print server autonegotiates with your network to operate with a link speed of either 10 or 100 Mbps, and to communicate using full- or half-duplex mode. However, you can manually configure the link using the printer control panel, or other configuration tools once network communications is established.

A typical network using an HP Jetdirect EIO print server is illustrated in Figure 1-2.

Figure 1-2 Typical HP Jetdirect Print Server Installation
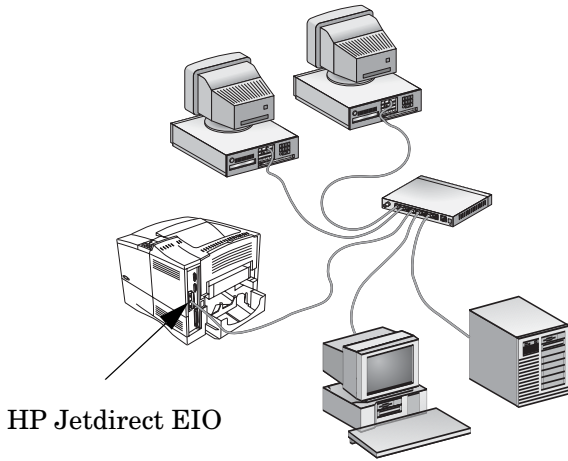
HP Jetdirect EIO

Using the HP Jetdirect print server, setting up your network printer is easy.

● Install the HP Jetdirect print server hardware and connect the printer to your network.

● Use network installation software to configure the print server for network communications, and to add the printer on each computer system that will send print jobs directly to the printer.

For detailed instructions, see Chapter 2.

What You Need

- HP printer with an available EIO slot.

  We assume that you have an HP EIO printer that is operating properly. Use the documentation supplied with your printer to assemble and test the printer.

- A working network with an available network connection, and network cables with RJ-45 connectors.

  We assume that you have a working network and an available network connection for your printer. A working network consists of multiple computers that can share files and other resources with each other over the network cables.

- For Windows systems, go to http://www.hp.com/go/inpw_sw.

- For other systems, see the software installation tools summary in Appendix B.

For Help...

Go to http://www.hp.com/support/net_printing and select your
JetDirect model for more information.

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 email to: accessibility@hp.com

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Installation Procedures

CAUTION   **HP Jetdirect cards contain electronic components that can be damaged by static electricity through electrostatic discharge (ESD).** To prevent ESD damage, maintain frequent contact with any bare sheet metal surface on the printer. A grounding wrist strap (or similar device) is useful for this purpose. Handle the card carefully at all times. Avoid touching electronic components or circuit paths.

Verify Printer Operation

To verify that your printer is working properly, print a Printer Configuration page. The Printer Configuration page will display the operating status of the printer.

The steps to print a Printer Configuration page varies with each printer model. For most printers with a control panel, a menu map is provided to navigate the control panel menus. To print a Printer Configuration page, see your printer documentation for specific instructions.

Note   The name of the Printer Configuration page may also vary by printer model. For example, HP DesignJet printers provide a "Service Configuration print" that displays status information.

Remove Power to Printer, Install the Hardware

Figure 2-1   Remove Power, Install and Connect the Card

RJ-45
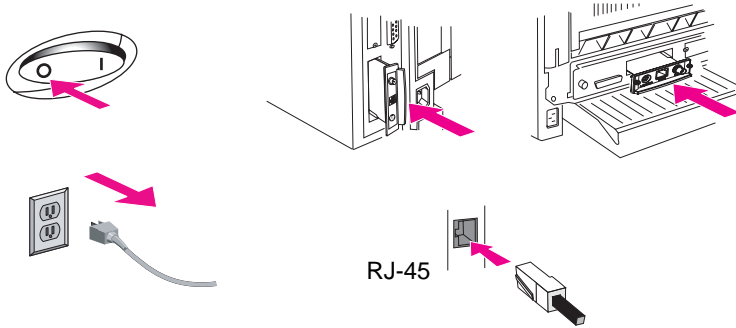
1. Turn off the printer and remove the printer's power cord.

2. Identify an available HP Enhanced I/O (EIO) slot (typically, in the back of the printer).

Note   For printers with multiple EIO slots, you can install the print server into any EIO slot in the HP printer.

3. If the slot has a cover plate, remove it.

4. Insert the print server card. Align the card with the guide rails in the slot.

5. Press the card into the slot until firmly seated and tighten each retaining screw a little at a time until both screws are secure.

6. Connect the network cable to the card using the RJ-45 connector port.

7. Turn on the printer.

Verify Jetdirect Print Server Operation

1. Print a Jetdirect Configuration page and check for status messages.

   In most printers, a Jetdirect Configuration page will automatically print when you print a Printer Configuration page. See your printer documentation for instructions.

   In HP Designjet printers, Jetdirect configuration information will be included on the Service Configuration print.

2. In the first section of the Jetdirect Configuration Page, look for the status message "I/O CARD READY". See Figure 2-2.

   This section of the configuration page also contains product-specific information, such as:

   - HP Jetdirect product number
   - Firmware revision number
   - LAN Hardware (MAC) address
   - Manufacturing identification number

3. If I/O CARD READY appears, the card has been installed successfully. Proceed to If Required, Configure Jetdirect With Your Network Settings.

   If I/O CARD READY does not appear, check that you have:

   - Installed the print server correctly and properly connected the print server to the network

   - Verified that the network is operating properly

   You can turn the printer off and then on again to reinitialize the print server and try again.

Note   See <u>Chapter 3</u> in this guide for link configuration and troubleshooting information.

Figure 2-2   Example of HP Jetdirect Configuration Page

If Required, Configure Jetdirect 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.

However, in most cases, you can skip this section. Instead, you can proceed directly to <u>Add the Printer to Your Network Server or System</u>. Use network installation software to both configure basic network settings on the print server, and add the printer to your system configuration.

Configuration Tools

(Recommended) Use your network-ready printer CD-ROM.

● This software will allow you to both configure the print server for operation on your network *and* add the printer to your system. See <u>Add the Printer to Your Network Server or System</u>.

Note   When using your printer CD-ROM, see your printer documentation for supported networks.

● 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.
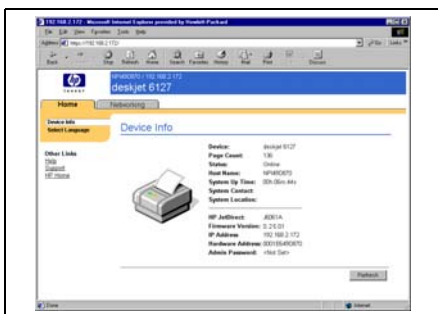
● Use the printer's control
panel (for printers with a
supported control panel)
to configure basic network
parameters on the print
server. See Appendix C for
more information.
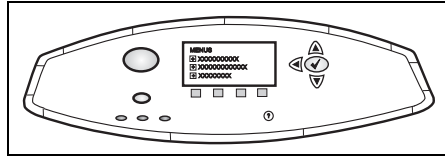
● For TCP/IP networks, use an
advanced configuration method,
such as BootP, DHCP, Telnet, or
the "arp" and "ping" commands.
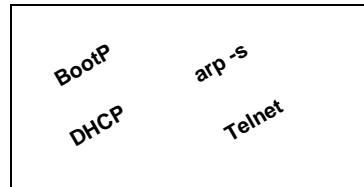
● Use HP printer management software (such as *HP Web Jetadmin*) or other network utilities to configure network parameters. HP printer setup and management software can be downloaded from HP's online support at:

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

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

Add the Printer to Your Network Server or System

Once the printer is configured for proper 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 for your system. For a summary of HP installation software, see Appendix B.

Figure 2-3   Adding a Printer to Your System Configuration
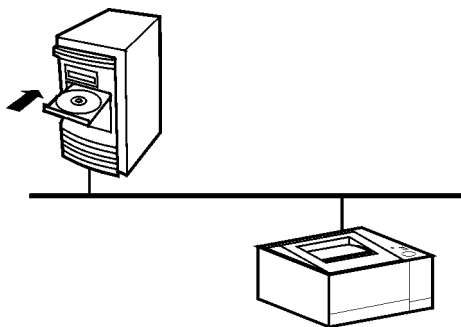
For Windows systems, go to http://www.hp.com/go/inpw_sw.

Client-Server Networks

After you have set up 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 network operating system.

For example, if the printer was installed and shared on a Microsoft server, each Windows client can use Add Printer or Network Neighborhood utilities to access the printer.

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

UNIX Networks

HP Jetdirect print servers support operation with UNIX/Linux systems over a network. Use your system utilities to install the device. For more help, visit http://www.hp.com/support/net_printing.

Apple Mac OS Networks

HP Jetdirect print servers support operation with Apple Mac OS systems over a network. Use your system utilities to install the device, or the HP software supplied with the printer/MFP CD-ROM.

3

Troubleshooting Tools

HP Jetdirect Configuration Page

As illustrated in Chapter 2, the Jetdirect Configuration page provides comprehensive print server status. It is an important diagnostic tool, especially if network communications with the print server is not available.

In most HP LaserJet printers, a Jetdirect Configuration page will automatically print when you print a Printer Configuration page. In HP DesignJet printers, Jetdirect configuration information will be included on the Service Configuration print. Refer to your printer documentation to print configuration pages for your printer.

10/100Base-TX Link Configuration

HP Jetdirect 10/100Base-TX print servers support 10 or 100 Mbps network link speeds using full-duplex or half-duplex transmission channels. By default, the print server will attempt to autonegotiate its link operation with the network.
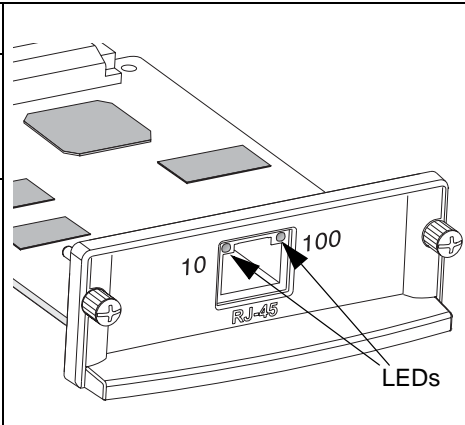
When connecting to network hubs and switches that do not support autonegotiation, the print server will configure itself for *10-Mbps* or *100-Mbps half-duplex* operation. For example, when connected to a non-negotiating 10 Mbps hub, the print server card will automatically set itself to operate at *10-Mbps half-duplex*.

If the print server is not able to connect to the network through autonegotiation, you can manually set the link operating mode using one of the following methods:

- the printer's control panel (if it has one). See <u>Appendix C</u> for more information.

- the embedded Web server running on the Jetdirect print server.

- accessing the Telnet interface on the Jetdirect print server.

- using a TFTP (Trivial File Transfer Protocol) configuration file that is downloaded, for example, from a BootP or DHCP server.

Link-Speed LEDs

The HP Jetdirect print server provides 2 light-emitting diodes (LEDs) near the RJ-45 connector. These LEDs indicate the operating link speed (10 Mbps or 100 Mbps) of the print server.

LED State	Description	
Off	Not linked	
On	Link established at indicated speed (10 or 100 Mbps)	

Link Troubleshooting

If the HP Jetdirect print server does not successfully connect to the network:

- both link speed LEDs (10 and 100) will be off

- a "LOSS OF CARRIER ERROR" will be indicated on the Jetdirect Configuration Page.

Note   The HP Jetdirect 10/100Base-TX print server may require up to *10 seconds* to establish a connection on the network.

Try the following troubleshooting procedures:

● Verify cabling connections.

● Configure the print server's 10/100TX link setting directly (for example, using the EIO menu on the printer's control panel). Verify that the configuration of the connecting network device (such as a network switch) matches. For example, if you set the print server for 100Base-TX Full-Duplex operation, the port on the network switch must also be set to 100Base-TX Full-Duplex operation. Power-cycle the printer to reinitialize the setting.

● On the Jetdirect Configuration Page, compare your configuration for the following parameters:

Parameter	Expected Messages for 10/100TX Cards
PORT SELECT:	RJ-45
PORT CONFIG:	100TX HALF, 100TX FULL, 10BASE-T HALF, 10BASE-T FULL
AUTONEGOTIATION:	ON (Autonegotiation is enabled), or
	OFF (Autonegotiation is disabled, 10/100TX configuration has been manually set)

Resetting to Factory Defaults

You can restore default values by performing a cold reset on your printer (see your printer documentation for instructions).

● To perform a cold reset on some older HP LaserJet printers, turn off the printer and then press and hold the **Go**, **Start**, or **Pause/Resume** button as you turn the printer back on.

● To perform a cold reset on many recent HP LaserJet printers and MFPs, you must interrupt the printer's power-on sequence to enter the printer service menu, and then select **Cold Reset**.

A document that describes how to perform a cold reset on many HP printers is available on HP's Web site. To view the document, visit HP online support at:

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

and search for document file **hpj02300.html**.

CAUTION	**A cold reset restores both your printer and Jetdirect configuration to their factory default values.**

Controlling Network Protocols

The HP Jetdirect print server can simultaneously support multiple network communication protocols. This allows network computers that may be using different protocols to communicate with the same printer.

Each protocol used on the print server may require some configuration before the printer can communicate on the network. For some protocols, required parameters are automatically sensed and user-specified settings are not needed. However, for other protocols, there may be many parameters to configure.

Enabling or Disabling Network Protocols

When you first install the Jetdirect print server from the factory, all supported network protocols are enabled (or turned on) whenever you turn the printer on.

If a network protocol is enabled, the card may actively transmit on the network even when there are no computers on the network that use the protocol. This may increase network traffic. To eliminate unnecessary traffic, you can disable unused protocols. Disabling unused protocols lets you:

● reduce network traffic by eliminating broadcast messages from unused protocols (for example, IPX/SPX and TCP/IP).

● provide better control over who prints to the printer by eliminating users from other networks who might accidentally route print jobs to this printer.

● eliminate unnecessary information on the Jetdirect Configuration Page, which displays status information for all enabled protocols.

● display protocol-specific error conditions on the printer's control panel for enabled protocols only.

Protocols can be enabled or disabled on the print server through a variety of tools, such as Telnet, Web browser access to the embedded Web server, the printer control panel, and HP Web Jetadmin management software.

A

Introduction to Network Printing

Network Printing Configurations

Networks consist of computers connected together to share information and resources, such as printers. On a "client-server" network, client computers send print jobs to dedicated server computers that control the use of each printer. On a "peer-to-peer" network, dedicated servers are not used. Instead, each computer is configured to send print jobs to the printer directly.

Figure A-1   Basic Network Printing Configurations
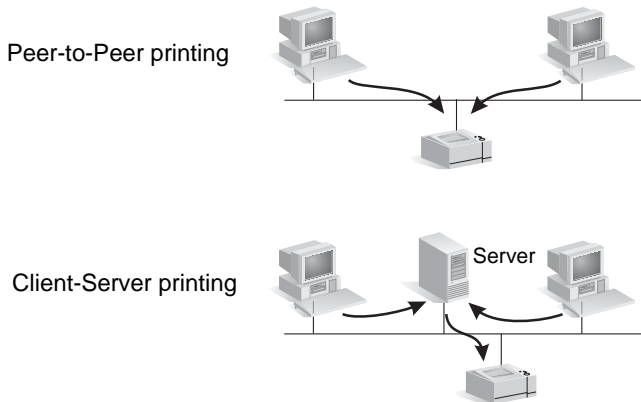
Client-server printing is typically used in medium to large networks where dedicated servers are used to manage printing needs of many users. Client-server networks use network operating systems (NOS) such as Novell NetWare and Microsoft Windows .

Peer-to-peer printing is more suitable for smaller networks. On peer-to-peer networks, each user configures his Microsoft system to print directly to the printer.

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

Network Protocols

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 print server supports these and other popular network protocols.

Network Addresses

Each device, such as a printer, on a network must be identified by a unique address. Networks with devices that have the same address will cause communication failures. If your network is small, preventing duplicate addresses is relatively easy. But for large networks, a significant effort must be made to prevent duplicate addresses.

Network addresses are typically stored on the device. The way addresses are assigned to each device depends on the network protocols used on the network:

● If the device supports operation on an IPX network, assigning an address is relatively easy – it's done automatically.

● If the device supports operation on an IP network, assigning an address may be more complex, especially for large networks where communications with other networks is desired. In addition, there may be many additional IP parameters that need to be assigned and stored on the device.

Setting Up Your Network Printer

Note   If you are on a large, enterprise TCP/IP network, check with your network administrator for a valid IP address and other required parameters.

For a small, private TCP/IP network, a link-local IP address (in the form 169.254.x.x) may be automatically assigned.

Check your Jetdirect Configuration page to determine current network settings.

B

HP Jetdirect Solutions Summary

Tools Overview

Table B-1.   Tools Overview

HP Jetdirect Network Configuration and Management
● Embedded HP Jetdirect services: ■ BootP or DHCP ■ TFTP ■ SNMP ■ Telnet ■ Embedded Web Server, HTTP (TCP port 80) ■ Embedded Web Server, HTTPS (TCP port 443) ● HP management and support software: ■ HP Web Jetadmin software (TCP/IP and IPX/SPX networks) ■ HP Jetdirect Download Manager (HP Jetdirect firmware upgrades)
HP Jetdirect Printing Support
● Embedded HP Jetdirect services: ■ LPD printing (TCP port 515) ■ IPP printing (TCP port 631) ■ FTP printing (TCP ports 20, 21) ■ Raw IP printing (HP-proprietary TCP ports 9100, 9101, 9102)
For additional information, see the *HP Jetdirect Print Server Administrator's Guide* for your particular model number. HP software solutions may be downloaded from HP online support at: http://www.hp.com/support/net_printing

Supported Network Protocols

Table B-2.   Supported Network Protocols

Network Protocols	Network Printing Environments
TCP/IP	Microsoft Windows 2000, XP-32/64 (Direct Mode), Server 2003, Windows Vista
	Novell NetWare** 5, 6
	Apple Mac OS X
	UNIX and Linux, including:
	HP-UX
	Solaris (SPARCsystems only)
	RedHat Linux
	SuSE Linux
	MPE/iX**
	Operating systems that support LPR/LPD (line printer daemon)
	Operating systems that support FTP (File Transfer Protocol) printing
	Internet printing over IPP (Internet Printing Protocol), Windows 2000**
IPX/SPX and compatible	Novell NetWare**
	Microsoft Windows** 2000, XP-32 (Direct Mode), Server 2003
EtherTalk	AppleTalk (Mac OS)
DLC/LLC	Legacy systems**
**Contact your network system vendor for software, documentation, and connectivity support.	

HP Installation Software

For a summary of HP solutions to setup network printing, see
Table B-3 below. For more information on these and other HP
solutions, visit HP online support at:

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

Table B-3.   HP Software Solutions

HP Web Jetadmin (Internet access required)
Supported Networks (TCP/IP, IPX/SPX):

- Supported Networks (TCP/IP, IPX/SPX):
    - Windows 2000, XP, Server 2003
    - HP-UX*
    - Solaris*
    - Linux
    - NetWare*

    *Note: Supports queue creation and peripheral management from HP Web Jetadmin hosted on Windows 2000, XP, Server 2003. For the latest information on supported hosts, visit http://www.hp.com/go/webjetadmin.

- Browser-based management through TCP/IP to the Web Jetadmin host

- HP's preferred solution for ongoing management and installation of multiple printers-anywhere on your intranet

- Remote installation, configuration, and management of HP Jetdirect-connected print servers, non-HP printers that support the standard MIBs, and printers with embedded web servers

- Alerts and consumables management

- Remote firmware upgrades for HP Jetdirect print servers

- Asset tracking and utilization analysis

HP Jetdirect Solutions Summary 34

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HP Jetdirect EIO Control Panel Menus

Introduction

When supported by the printer, the HP Jetdirect EIO internal print server contains a configuration menu that can be accessed from the printer's control panel. The keystrokes to access this menu depend on the printer. Refer to the printer manuals for more information.

The HP Jetdirect internal print servers support the following printer control panels:

● Classic Control Panel display with menu and parameter selection buttons

● Graphical Control Panel display with navigation and numeric keypads (available on newer HP LaserJet printer models)

Classic Control Panel

Classic control panels can typically display two lines of 16 characters each.

As described in <u>Table C-1</u>, the HP Jetdirect EIO control panel menu allows you to enable or disable network protocols, and configure selected network parameters. On the control panel display, an asterisk (*) is used to identify the selected value.
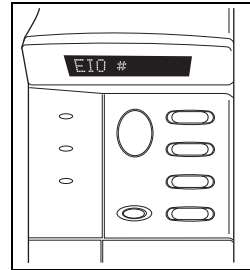
Table C-1.   EIO Classic Control Panel Menu (1 of 3)

Menu Item	Description
CFG NETWORK=	Selects whether or not you want to access the Jetdirect menu. ● NO (default): Bypass the HP Jetdirect menu. ● YES: Access the HP Jetdirect menu. You must change this to YES* each time you want to access the menu.
TCP/IP= IPX/SPX= DLC/LLC= ATALK/ETALK=	Identifies whether the protocol stack is enabled or disabled. ● ON (default). The protocol is enabled. ● OFF: The protocol is disabled.

Table C-1.   EIO Classic Control Panel Menu (2 of 3)

Menu Item	Description
CFG TCP/IP=	Selects whether you want to access the TCP/IP menu and set TCP/IP protocol parameters.
	NO (default): Bypass the TCP/IP menu items.
	YES: Access the TCP/IP menu items.
	TCP/IP menus depend on your print server model.
	● BOOTP=YES* enables configuration by a BootP server.
	● DHCP=YES* enables configuration by a DHCP server. If DHCP=YES* and the print server has acquired a DHCP lease, you can choose to configure the following DHCP settings:
	■ RELEASE: Choose YES to release, or NO to save, the current DHCP lease.
	■ RENEW: Choose YES to renew the current DHCP lease, or NO not to renew the DHCP lease.
	● AUTO IP=YES* will configure a link-local address. In these cases, manual configuration is turned off.
	If you specify BOOTP=NO, DHCP=NO, you can choose AUTO IP=YES to have a link-local address 169.254.x.x assigned automatically.
	If BOOTP, DHCP and AUTO IP are disabled, you can manually set the following TCP/IP parameters from the control panel:
	■ Each byte of the IP address (IP)
	■ Subnet Mask (SM)
	■ Syslog Server (LG)
	■ Default Gateway (GW)
	■ Idle Timeout period (default is 270 seconds, 0 disables the timeout)
	● CFG DNS 1=YES* will allow you to specify the IP address of a primary DNS server, one byte at a time.
	● CFG DNS 2=YES* will allow you to specify the IP address of a secondary DNS server, one byte at a time.
	Print a Jetdirect configuration page to verify your settings. However, note that the print server may overwrite selected parameters with values that ensure proper operation.

Table C-1. EIO Classic Control Panel Menu (3 of 3)

Menu Item	Description
CFG IPX/SPX=	Selects whether you want to access the IPX/SPX menu and set IPX/SPX protocol parameters. ● NO (default): Bypass the IPX/SPX menu items. ● YES: Access the IPX/SPX menu items. In the IPX/SPX menu, you can specify the *Frame Type* parameter used on your network. ■ AUTO (default) will automatically set and limit the frame type to the first one detected. ■ For Ethernet cards, frame type selections include EN_8023, EN_II, EN_8022, EN_SNAP.
CFG LINK=	Selects whether you want to manually configure the HP Jetdirect print server's network link. ● NO (default): Bypass the link configuration menu items. ● YES: Access the link configuration menu items. One of the following link configurations can be set: ■ AUTO (default): The print server will automatically configure itself to match the network's link speed and communication mode. If it fails, 10T HALF or 100T HALF is set. ■ 10T HALF: 10 Mbps, half-duplex operation. ■ 10T FULL: 10 Mbps, full-duplex operation. ■ 100T HALF: 100 Mbps, half-duplex operation ■ 100T FULL: 100 Mbps, full-duplex operation
WEB=	For configuration management, specify whether the embedded Web server will accept communications using HTTPS (Secure HTTP) only, or both HTTP and HTTPS. ● HTTPS: For secure, encrypted communications, only HTTPS access is accepted. The print server will appear as a secure site. ● HTTP/HTTPS: Access using either HTTP or HTTPS is permitted.
SECURITY=	Specify whether the current security settings on the print server will be saved or reset to factory defaults. ● KEEP (default): The current security settings are maintained. ● RESET: Security settings are reset to factory defaults.

Graphical Control Panel

Graphical control panels
typically display 18 characters
on a line, and as many as four
lines at a time. In addition,
scrolling may be supported to
allow display of additional
lines.
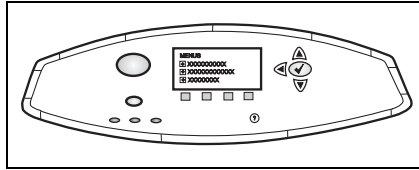
On graphical control panels, a numeric keypad and navigation
buttons are used to access HP Jetdirect EIO menu items. For a
description of menu items and options, see .

Table C-2.   EIO Graphical Control Panel Menu (1 of 5)

Menu Item	Options	Description of settings
TCP/IP	ENABLE	● ON: Enable the TCP/IP protocol. ● OFF: Disable the TCP/IP protocol.
	HOST NAME	Specifies an alphanumeric string, up to 32 characters, used to identify the device. This name is listed on the Jetdirect configuration page. The default host name is NPIxxxxxx, where xxxxxx is the last six digits of the LAN hardware (MAC) address.

Table C-2. EIO Graphical Control Panel Menu (2 of 5)

Menu Item	Options	Description of settings
	CONFIG METHOD	Specifies the method that TCP/IP parameters will be configured on the Jetdirect print server. ● BOOTP: Use BootP (Bootstrap Protocol) for automatic configuration from a BootP server. ● DHCP: Use DHCP (Dynamic Host Configuration Protocol) for automatic configuration from a DHCP server. If selected and a DHCP lease exists, DHCP RELEASE and DHCP RENEW menus will be available to set DHCP lease options. ● AUTO IP: Use automatic link-local IP addressing. An address in the form 169.254.x.x will be automatically assigned. ● MANUAL: Use the Manual Settings option to configure TCP/IP parameters.
	DHCP RELEASE	This menu appears if CONFIG METHOD was set to DHCP and a DHCP lease for the print server exists. ● NO (default): The current DHCP lease is saved. ● YES: The current DHCP lease along with the leased IP address are released.
	DHCP RENEW	This menu appears if CONFIG METHOD was set to DHCP and a DHCP lease for the print server exists. ● NO (default): The print server does not request to renew the DHCP lease. ● YES: The print server requests to renew the current DHCP lease.

Table C-2.   EIO Graphical Control Panel Menu (3 of 5)

Menu Item	Options	Description of settings
	MANUAL SETTINGS	(Available only if CONFIG METHOD is set to MANUAL) Configure parameters directly from the printer control panel: ● IP ADDRESS n.n.n.n: The unique IP address of the printer, where n is a value from 0 to 255. ● SUBNET MASK m.m.m.m: The subnet mask for the printer, where m is a value from 0 to 255. ● SYSLOG SERVER n.n.n.n: The IP address of the syslog server used to receive and log syslog messages. ● DEFAULT GATEWAY n.n.n.n: The IP address of the gateway or router used for communications with other networks. ● IDLE TIMEOUT: The time period, in seconds, after which an idle TCP print data connection is closed (default is 270 seconds, 0 disables the timeout).
	DEFAULT IP	Specify the IP address to default to when the print server is unable to obtain an IP address from the network during a forced TCP/IP reconfiguration (for example, when manually configured to use BOOTP or DHCP). ● AUTO IP: A link-local IP address 169.254.x.x will be set. ● LEGACY: The address 192.0.0.192 will be set consistent with older Jetdirect products.
	PRIMARY DNS	Specify the IP address (n.n.n.n) of a Primary DNS Server.
	SECONDARY DNS	Specify the IP address (n.n.n.n) of the Secondary Domain Name System (DNS) Server.

Table C-2. EIO Graphical Control Panel Menu (4 of 5)

Menu Item	Options	Description of settings
	PROXY SERVER	Specifies the proxy server to be used by embedded applications in your printer/MFP. A proxy server is typically used by network clients for Internet access. It caches Web pages, and provides a degree of Internet security, for those clients.
		To specify a proxy server, enter its IP address or fully-qualified domain name. The name can be up to 255 octets.
		For some networks, you may need to contact your Independent Service Provider (ISP) for the proxy server address.
	PROXY PORT	Enter the port number used by the proxy server for client support. The port number identifies the port reserved for proxy activity on your network, and can be a value from 0 to 65535.
IPX/SPX	ENABLE	● ON: Enable the IPX/SPX protocol. ● OFF: Disable the IPX/SPX protocol.
	FRAME TYPE	Selects the frame type setting for your network. ● AUTO: (Default) automatically sets and limits the frame type to the first one detected. ● EN_8023, EN_II, EN_8022, EN_SNAP are frame type selections for Ethernet networks.
APPLTALK	ENABLE	● ON: Enable the AppleTalk protocol. ● OFF: Disable the AppleTalk protocol.
DLC/LLC	ENABLE	● ON: Enable the DLC/LLC protocol. ● OFF: Disable the DLC/LLC protocol.

Table C-2.   EIO Graphical Control Panel Menu (5 of 5)

Menu Item	Options	Description of settings
SECURE WEB		For configuration management, specify whether the embedded Web server will accept communications using HTTPS (Secure HTTP) only, or both HTTP and HTTPS. ● HTTPS REQUIRED: For secure, encrypted communications, only HTTPS access is accepted. The print server will appear as a secure site. ● HTTPS OPTIONAL: Access using either HTTP or HTTPS is permitted.
RESET SECURITY		Specify whether the current security settings on the print server will be saved or reset to factory defaults. ● NO (default): The current security settings are maintained. ● YES: Security settings are reset to factory defaults.
LINK SPEED		Selects the network link speed and communication mode for the print server. For proper communications, the Jetdirect settings must match the network. ● AUTO (default): The print server will automatically configure itself to match the network's link speed and communication mode. If it fails, 10T HALF or 100T HALF is set. ● 10T HALF: 10 Mbps, half-duplex operation. ● 10T FULL: 10 Mbps, full-duplex operation. ● 100T HALF: 100 Mbps, half-duplex operation ● 100T FULL: 100 Mbps, full-duplex operation

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Specifications and Regulatory Statements

Specifications

HP Jetdirect EIO Internal Print Server

● HP J7934G (620n)	Ethernet/Fast Ethernet, IEEE 802.3 and IEEE 802.3u 10/100Base-TX (RJ-45)

Electrical

1.25 A maximum @ 3.3 V nominal

Environmental

	Operating	Non-Operating
Temperature	0°C to 55°C (32°F to 131°F)	-40°C to 70°C (-40°F to 158°F)
Relative Humidity (non-condensing)	15% to 95% at 40°C (104°F)	15% to 90% at 65°C (149°F)
Maximum altitude	4.6 km (15,000 ft.)	4.6 km (15,000 ft.)

Electromagnetic

J7934G (620n)
● FCC Title 47 CFR Part 15 Class B for Ethernet (USA)
● ICES-003 Class B (Canada)
● VCCI Class B (Japan)
● AS/NZS3548 Class B (Australia, New Zealand)
● CISPR-22 Class B (1997)* for Ethernet (International, Europe)
● CNS 13438 Class B (Taiwan)
● Korean EMI Law, No. 1996-98 Class A (Korea)
*For EU immunity compliance, see .

Safety

● EN60950–1 (2000) First edition
● NOM-019–SCFI-1994 and NOM-001–SCFI-1993

Regulatory Statements

FCC Statements

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 interference and void the FCC authorization to operate this equipment.

General Information. 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.

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.

FCC Class B for HP J7934G Ethernet or IEEE 802.3/802.3u. This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against interference in a *residential* installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/TV technician for help.

For further information, contact:
  Manager of Product Regulations
  Hewlett-Packard Company
  3000 Hanover Street
  Palo Alto, California 94304

  Phone (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-0302. The Regulatory Model Number should not be confused with the HP marketing model number (for example, HP Jetdirect 620n), or the HP product number (J7934G).

European Community

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

Australia

This equipment complies with Australian EMC requirements.

Canada

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

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

VCCI (Japan)

Class B

この装置は、情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスＢ情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると受信障害を引き起こすことがあります。
取り扱い説明書に従って正しい取り扱いをして下さい。

RRL Statement (Korea)

Class B

B급 기기 (가정용 정보통신기기)

이 기기는 가정용으로 전자파적합등록을 한 기기로서
주거지역에서는 물론 모든지역에서 사용할 수 있습니다.

E

Warranty Service

HEWLETT-PACKARD LIMITED WARRANTY STATEMENT

HP PRODUCT	DURATION OF LIMITED WARRANTY
HP Jetdirect 620n Print Servers (J7934G)	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, which 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

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.

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.

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HP Support and Service

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 answers to questions about your
HP Jetdirect print server – 24 hours a day, 7 days a week.

Firmware Upgrades

Hewlett-Packard offers downloadable electronic upgrades for
HP Jetdirect print servers with internal Flash memory. The
electronic upgrades may be installed using several tools including
File Transfer Protocol (FTP), the embedded Web server, and HP
Jetdirect Download Manager (Windows) or HP Web Jetadmin
software. Firmware upgrade files and software tools are available
from the World Wide Web at:

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

HP Support By Phone

Highly trained technicians are ready to take your call.

Note   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.

www.hp.com

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