

Intel® NetportExpress™ Print Server

Setup Guide

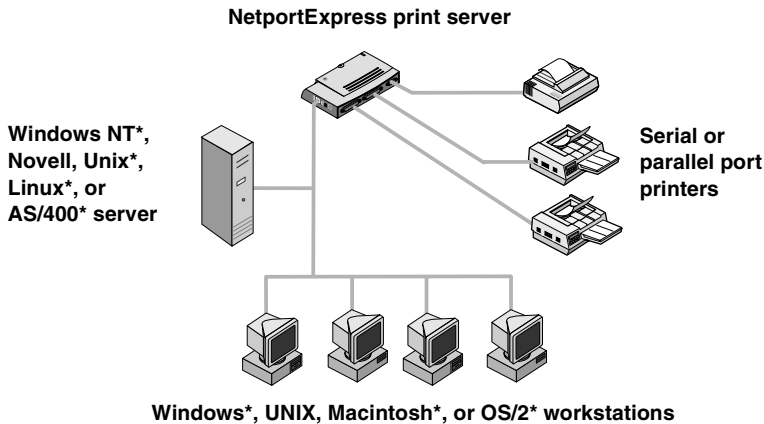


intel®

About Intel® NetportExpress™ Print Servers

Intel® NetportExpress™ print servers provide high performance printing and centralized management for printers on multiprotocol networks. With NetportExpress print servers, you can locate printers anywhere on a Local Area Network (LAN).

NetportExpress print servers support most makes and models of printers on networks running IPX/SPX*, NetBEUI, TCP/IP, and AppleTalk* protocols.



Printing support

NetportExpress print servers support:

- *Windows:* Windows NT, Windows 2000, Windows 98, or Windows 95
- *Novell NetWare*:* Novell Directory Services (NDS*), Novell Distributed Print Services* (NDPS), bindery print server, or remote printer
- *TCP/IP:* Line Printer Remote (LPR) or File Transfer Protocol (FTP)
- *Macintosh:* AppleTalk

Where do I find more information?

The NetportExpress print server Online Guide contains detailed information about configuring, using, and troubleshooting your print server. To access the Online Guide, go to:

- The Start menu, click Programs, select Intel NetportExpress Print Server, and click Online Guide.
- The NetportExpress Print Server CD and open *guide/index.htm*.

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Quick Start

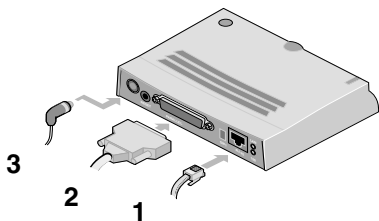
for Hardware

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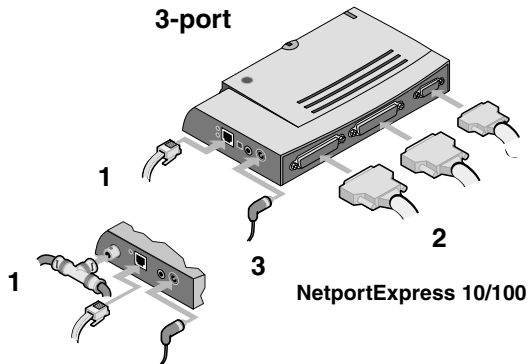
Install NetportExpress 10 or 10/100 Print Server

- 1 Connect the network cable to the RJ-45 or BNC connector. If you are using an RJ-45 jack, use Category 5 cable.
- 2 Connect the printer cable to the printer and the print server.
- 3 Plug the power cable into the print server.

Single-port



3-port



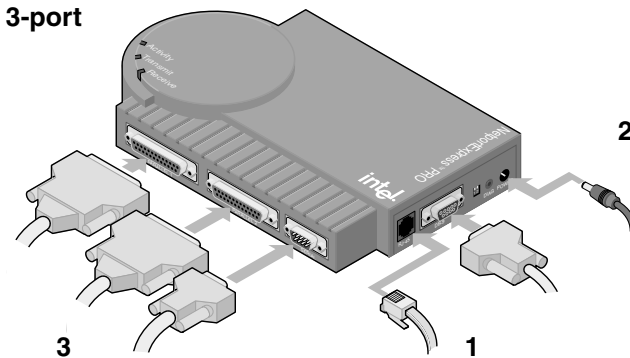
NetportExpress 10

NetportExpress 10/100

After connecting the power cable, wait one minute. When the activity light is solid green, the NetportExpress print server is ready to be configured. Press the Test Page button to send a test page from the print server to any connected printer. The test page includes the print server's Device ID, IP address, and other configuration information. If you cannot print a test page, see *Can't print a test page* on page 26.

Install NetportExpress PRO token ring print server

- 1 Connect the network cable to the RJ-45 or DB-9 connector. If you are using an RJ-45 jack, use Type 3 cable.
- 2 Plug the power cable into the print server.
- 3 Connect the printer cable to the printer and the print server.



After connecting the power cable, wait one minute. When the activity light is solid green, the NetportExpress print server is ready to be configured. Press the Test Page button to send a test page to the printer connected to parallel port 1. The test page includes the print server's Device ID, IP address, and other configuration information. If you cannot print a test page, see *Can't print a test page* on page 26.

Quick Start

for Software

2 Install Netport[®] Manager

- 1 Insert the NetportExpress Print Server CD into a Windows PC. If the program doesn't automatically start, run *setup.exe* from the CD. From the Start menu, click Run and browse to the CD drive.
- 2 Click Install Netport[®] Manager.

Note: If you are using UNIX and do not have a Windows computer, see *Configuring the print server* on page 14.



3 Configure the print server

- 1 Start Netport Manager and select the print server. Match the Device ID in Netport Manager with the Device ID located on the bottom of the print server. If the device is not listed, see *Troubleshooting* on page 21.
- 2 Click the Config Wizard button and follow the instructions in the wizard.



Set up workstations to print

Microsoft direct printing

- 1 Insert the NetportExpress Print Server CD in a Windows PC. If the setup program doesn't automatically start, run *setup.exe* from the CD.
- 2 Click Add Printer.

Microsoft shared printing with a server

- 1 Set up a Windows 2000 or Windows NT 4.0 server to print using the Add Printer option on the NetportExpress CD.
- 2 Share a printer from the server.
- 3 Set up each PC to print to the shared printer using the Windows Add Printer Wizard.

Novell

Set up a network printer, selecting the print queue that you configured on the previous page.

UNIX*

For information about setting up UNIX workstations to print, see page 15.

AppleTalk*

For information about setting up Macintosh workstations to print, see page 13.

Windows NT 3.51, Windows for Workgroups, and OS/2*

For information about setting up a Windows NT 3.51, Windows for Workgroups, or OS/2 workstation to print, see the Online Guide index.

Microsoft Printing

To set up printing, first configure the print server and then set up each PC to print. To configure the print server, use the Config Wizard in Netport Manager. Then run the NetportExpress Add Printer Wizard on each PC to set up printing to the print server. The NetportExpress Add Printer Wizard installs software that enhances Windows' retry mechanisms for network printers and sets up the PC to print.

For information about setting up printing with Windows NT 3.51, Windows for Workgroups, OS/2, LAN Server*, or LAN Manager*, see the NetportExpress print server Online Guide.

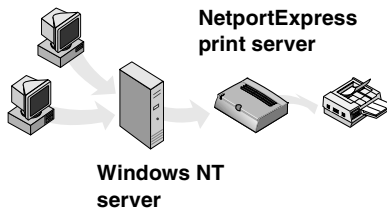
Direct printing

Direct printing allows workstations on the network to send print jobs directly to a print server without going through an intermediate server. Run the NetportExpress Add Printer Wizard on each Windows PC in order to facilitate direct printing to the NetportExpress print server.



Shared printing with a server

Each user prints to a shared printer on a single system. The computer spools the print jobs and sends them to the NetportExpress print server. To set up shared printing with a Windows 2000 or Windows NT 4.0 server, run the NetportExpress Add Printer Wizard on the server, and share the printer with other Windows PCs. The server spools the print jobs and sends them to the NetportExpress print server.



Can my printer be networked?

As a general rule, the following printers and printer drivers can be networked:

- Windows printer drivers that are listed in the Windows Add Printer Wizard.
- Printers that can be added with the Windows Add Printer Wizard by using the Have Disk function to load a driver from a disk or CD.
- Some printers require you to run the printer's setup program. When you run the printer setup program, set up the printer to print to a local port on your computer (for example LPT1). Then run the NetportExpress Add Printer Wizard. When you select the printer driver, click Installed Printers and then click the driver.

Some printers designed for use with Windows 95 or Windows 98 do not use standard Windows printer drivers. These printers print directly to a hardware port on the computer and cannot be used to print on a network. See the *tested printers list* at <http://support.intel.com/support/netport/printers.htm>.

Configuring the print server

- 1 Start Netport Manager and select the print server. Match the Device ID in Netport Manager with the Device ID located on the bottom of the print server. If the device is not listed, see *Troubleshooting* on page 21.
- 2 Click the Config Wizard button.
- 3 Follow the directions in the wizard for Microsoft printing. If you are setting up Windows 2000 or Windows NT for LPR printing, follow the directions in the wizard for setting a manual IP address.

Setting up direct printing

To set up direct printing, run the NetportExpress Add Printer Wizard and set up each PC to print to the print server.

Set up a PC to print directly to the print server

- 1 Insert the NetportExpress Print Server CD in the selected Windows PC. If the setup program doesn't automatically start, run *setup.exe* from the CD.
- 2 Click Add Printer. Follow the directions in the wizard.

Automatic Printer Setup

Automatic Printer Setup is an advanced feature that you can use to create an executable file for adding a printer to a Windows PC. You can then use this executable file in login scripts or shared directories to make it easier for your users to print to a new printer. For more information, see *Automatic Printer Setup* in the Online Guide index.

Setting up shared printing

To set up shared printing with a Windows 2000 or Windows NT 4.0 server, set up the server to print, share the printer, and set up each PC to print to the shared printer.

Set up Windows 2000 or Windows NT server to print

- 1 Insert the NetportExpress Print Server CD in the selected Windows PC. If the setup program doesn't automatically start, run *setup.exe* from the CD.
- 2 Click Add Printer. Follow the directions in the wizard.
Note: You can also set up the server to print using LPR printing. Before sharing a printer, see *Setting up LPR printing* on page 9.

Share a printer from Windows 2000 or Windows NT server

- 1 From the Printers folder, right-click on the new printer and then click Properties.
- 2 Click the Sharing tab.
- 3 Select Shared and specify a share name.

Set up a PC to use the shared printer

- 1 From Network Neighborhood, browse to the file server sharing the printer, and double-click the share name defined above.
- 2 Complete the Windows Add Printer Wizard.

Setting up LPR printing

You can print in Windows 2000 or Windows NT 4.0 using LPR. First, configure the NetportExpress print server with a manual TCP/IP address. Second, confirm that the TCP/IP printing service is installed. Third, set up an LPR port on the server. Finally, set up each PC to print to the server.

Set up an LPR port in Windows NT 4.0

Before you begin, make sure the TCP/IP printing service is running. To check, right-click Network Neighborhood and click Properties. Click the Services tab. If Microsoft TCP/IP Printing isn't listed, click Add, select Microsoft TCP/IP Printing, and click OK.

- 1 Open the Printers folder, and start the Windows Add Printer Wizard.
- 2 Click My Computer and then click Next.
- 3 Click Add Port, select LPR Port, and click New Port.
- 4 In "Name or address of server providing lpd", type the IP address of the NetportExpress print server.
- 5 In "Name or printer of print queue on the server", type one of the following: LPT1_PASSTHRU, LPT2_PASSTHRU, or COM1_PASSTHRU.
- 6 Click OK and then click Close.
- 7 Complete the Add Printer Wizard.

Set up an LPR port in Windows 2000

- 1 Open the Printers folder, and start the Windows Add Printer Wizard.
- 2 Click Next, select Local Printer, and click Next.
- 3 Click Add a new port, select LPR Port, and click Next.
- 4 In "Name or address of server providing lpd", type the IP address of the NetportExpress print server.
- 5 In "Name or printer of print queue on the server", type one of the following: LPT1_PASSTHRU, LPT2_PASSTHRU, or COM1_PASSTHRU.
- 6 Click OK and then click Close.
- 7 Complete the Add Printer Wizard.

Novell Printing

NetportExpress print server supports printing with NDPS, bindery print server mode, or remote printer mode.

NDPS

In TCP/IP environments, NetportExpress print servers support NDPS 2.0 and higher through LPR. NDPS is bundled with NetWare 5.0 or is available as an add-on product from Novell for NetWare 4.11 as NetWare Enterprise Print Services (NEPS). To print NDPS using IPX* (queue-based printing), see the Online Guide.

Novell print server

The NetportExpress print server performs the function of the Novell print server and polls the Novell file server queue for print jobs. This is a fast printing mode that requires one NetWare user license per print server. Netport Manager creates any queues or print servers you need for your NetWare setup. You don't have to create these objects in NWADMIN or PCONSOLE.

Novell remote printer

If you are already using PSERVER.NLM, you can set up a NetportExpress print server as a remote printer. For information on remote printer configuration, see *Novell remote printer* in the Online Guide index. For best performance, use Novell print server mode, NDPS, or LPR printing.

Setting up to print with Novell print server

To set up printing with NDS or bindery print server, configure the NetportExpress print server and then set up each PC to print to the print queue you assigned.

Configure the NetportExpress print server

- 1 Log in to Novell as Admin, Supervisor, or the equivalent at the workstation where you installed Netport Manager.
- 2 Start Netport Manager and select the print server. Match the Device ID in Netport Manager with the Device ID located on the bottom of the print server. If the device is not listed, see *Troubleshooting* on page 21.
- 3 Click the Config Wizard button.
- 4 Follow the directions in the wizard for Novell NDS or bindery print server.

Set up PCs to print

Windows NT 4.0, Windows 2000, Windows 98, or Windows 95: Run the Windows Add Printer Wizard and set up a network printer, selecting the print queue.

Windows NT 3.51, Windows 3.1x, or DOS: Redirect printing to the print queue. For more information, see *Novell printing* in the Online Guide index.

Setting up to print with NDPS

To set up printing with NDPS, you need to configure the NetportExpress print server and create an NDPS Broker, an NDPS Manager, and NDPS Printer Agents.

Important: For proper printing with NetWare 5, apply Novell's Support Pack 2 or newer, available from Novell's Web site (<http://support.novell.com>).

Configure the NetportExpress print server

- 1 Start Netport Manager and select the print server. Match the Device ID in Netport Manager with the Device ID located on the bottom of the print server. If the device is not listed, see *Troubleshooting* on page 21.
- 2 Click the Config Wizard button.
- 3 Follow the directions in the wizard to set an IP address.

Create an NDPS Broker

- 1 Open NetWare Administrator (NWAdmin) and select the appropriate container for the new NDPS Broker object.
- 2 Choose Object and then choose Create.
- 3 Choose NDPS Broker.
- 4 Type a Broker name.
- 5 Browse to select a volume for the NDPS Resource database.
- 6 Click Create.

Note: Typically you need only one NDPS Broker, one NDPS Manager for each file server, and as many NDPS Printer Agents as there are actual printers attached to the network. You must create an NDPS Manager for each file server.

Create an NDPS Manager

- 1 In NWAdmin, select the appropriate container for the new NDPS Manager object.
- 2 Choose Object and then choose Create.
- 3 Choose NDPS Manager.
- 4 Type a NDPS Manager Name.
- 5 Browse to select a server and volume to store NDPS data.
- 6 Click Create.

Create Printer Agents

- 1 Open NWAdmin and select the appropriate container for the new NDPS Printer Agent object.
- 2 Choose New Object and then choose Create.
- 3 Choose NDPS Printer and fill in the NDPS Printer name.
- 4 Choose Create a New Printer Agent and then choose the NDPS Manager.
- 5 Specify Novell Printer Gateway and click OK.
- 6 Select a printer model and Novell Port Handler.
- 7 Select the connection type as Remote LPR on IP.
- 8 Type the host address (print server IP) and printer name.
(For example, LPT1_PASSTHRU, LPT2_PASSTHRU, COM1_PASSTHRU).
- 9 Select the printer driver for each client operating system.

AppleTalk Printing

The NetportExpress print server supports AppleTalk. Printing requires an AppleTalk zone and router.

Configuring the print server from Windows

- 1 On a Windows PC, start Netport Manager.
- 2 Select the print server. Match the Device ID in Netport Manager with the Device ID located on the bottom of the print server. If the device is not listed, see *Troubleshooting* on page 21.
- 3 Click the Config Wizard button.
- 4 Follow the directions in the wizard for AppleTalk.

Configuring the print server from Web Netport Manager

Note: If the NetportExpress print server has an IP address, you can use your Web browser to configure the print server. If you have a DHCP server on your network, the print server will automatically get an IP address from the DHCP server. If you don't have a DHCP server, install Netport Manager on a Windows PC and run the Config Wizard to set an IP address.

- 1 In your Web browser, type the NetportExpress print server's IP address in the Address or Location box and press Enter.
- 2 Click Configure and click AppleTalk.
- 3 Enter the name of the AppleTalk zone you want the NetportExpressä print server to use.
- 4 Select a port by selecting the Enable checkbox.
- 5 Use the default settings for Chooser Name, Printer Type, and Font Group.
- 6 Click Submit.

Setting up a workstation to print

- 1 At a Macintosh workstation, from the Apple menu, select Chooser.
- 2 Select the printer driver for the printer connected to the NetportExpress print server. If you're using a PostScript* printer, select the LaserWriter* icon for your printer.
- 3 The Chooser window displays an AppleTalk zone list. Select the zone you specified when you configured the print server.
- 4 Select the Chooser name for the NetportExpress print server you want the Macintosh workstation to use.
- 5 Close the Chooser window.

UNIX Printing

The NetportExpress print server supports UNIX, Linux, and AIX* printing using LPR. To print from your UNIX workstation:

- Configure the NetportExpress print server by setting an IP address on the print server. By default, the print server tries to obtain an IP address using BOOTP, RARP, and DHCP. If the NetportExpress 10 or 10/100 fails to get an IP address by these methods, it automatically selects an IP address in the 169.254.x.x range.
- Configure your workstation to print.

Configuring the print server

The easiest way to configure the NetportExpress print server is with Windows Netport Manager. Select the print server in Netport Manager, click the Config Wizard button, and follow the steps to set an IP address and the port settings. If you set the IP address using the Config Wizard, you can go to *Configuring your workstation to print* on page 15.

Before you begin

To see the current IP address, press the Test Page or Diag button on the print server and print a test page. If the print server has an IP address that is correct for your network, skip to *Configuring your workstation to print*. If the print server has no IP address or has an IP address beginning with 169.254, continue with the following steps to manually set an IP address.

Manually set an IP address

To manually set an IP address from a UNIX workstation, the print server and workstation must be connected to the same subnet and not be separated by routers.

- 1 Log in to a UNIX workstation as root.
- 2 Register the print server on your workstation by typing:

System	Register instructions (type on one line)
AIX (Ethernet)	<code>arp -s ether ip_address network_address temp</code>
AIX (token ring)	<code>arp -s token ip_address network_address temp</code>
Other systems	<code>arp -s ip_address network_address temp</code>

where

ip_address is the IP address you want to assign to the print server.
network_address is the NetportExpress print server Network Address printed on the test page or on the label on the bottom of the print server device. Enter this address in two-digit pairs separated by colons, for example: 00:90:27:1E:5D:B8.

- 3 Set the NetportExpress print server IP address by typing
`ping ip_address`
where *ip_address* is the IP address used in the ARP command above.

Configuring a workstation to print

The Proinstall utility on the NetportExpress Print Server CD configures UNIX systems to print with LPR or the Intel Proprint utility. To set up systems manually, see *UNIX manual setup* in the Online Guide index.

Install and run the software

- 1 Log in to a UNIX workstation as root.
- 2 Make sure the CD mounting directory exists. To check, type
`ls -l /cdrom/npcdrom`
If necessary, create the directory by typing
`mkdir -p /cdrom/npcdrom`
- 3 Insert the CD into the drive. If the CD does not automatically mount, follow these instructions:

System	Mount Instructions
<i>HP-UX*</i>	<code>mount -t cdfs -o ro /dev/dsk/cqdl1s0 /cdrom/npcdrom</code>
<i>Linux</i>	<code>mount -t iso9660 -r /dev/hdb /cdrom/npcdrom</code>
<i>SCO*</i>	<code>mount -f ISO9660 -o ro,lower /dev/cd0 /cdrom/npcdrom</code>
<i>Solaris* 2.x</i>	<code>mount -F hsfs -r /dev/dsk/c0t6d0s2 /cdrom/npcdrom</code>
<i>Sun*OS 4.1.3</i>	<code>mount -t hsfs -o ro /dev/sr0 /cdrom/npcdrom</code>
<i>UnixWare*</i>	<code>mount -F cdfs -r /dev/cdrom/c0b0t210 /cdrom/npcdrom</code>
<i>AIX</i>	<code>mount -v cdrfs -o ro /dev/cd0 /cdrom/npcdrom</code>

Note: You may have to substitute the appropriate device file name of your system's CD-ROM drive for the italicized items in this table.

- 4 Type
`cd /cdrom/npcdrom/unix`
The final UNIX directory may be in uppercase.

- 5 From the NetportExpress Print Server CD, run the prosetup script. Type
`sh ./prosetup.sh`
Prosetup extracts the Proinstall utility and the associated files to the */usr/intl* directory.
- 6 At the UNIX workstation command line, type
`cd /usr/intl`
- 7 Type
`./proinstall`
- 8 At the Proinstall Main Menu, choose option 1 to use Telnet to configure the print server TCP/IP and port settings.
- 9 Return to Proinstall, and follow the instructions to set up the workstation to print using LPR printing.
Note: For more information about *manual configuration* and *queue names*, see the Online Guide index.

Managing the NetportExpress Print Server

You can manage the NetportExpress print server using Windows Netport Manager, Web Netport Manager, Web Enterprise Netport Manager, Intel Device View, SNMP, JetAdmin, Web JetAdmin, or Telnet.

Netport Manager

Netport Manager is a Windows application that allows you to fully configure and manage your NetportExpress print server. From Netport Manager you can configure your print server using the Config Wizard, get status from the printer and print server, and update your print server.

Web Netport Manager

Web Netport Manager is an HTML interface that resides on the print server. You can use your Web browser to change the print server configuration, view the print server's status, and update the print server.

Web Enterprise Netport Manager

Web Enterprise Netport Manager is a Java* application that searches the network for NetportExpress print servers and allows browsing to any NetportExpress print server on the network. You also can export the list of print servers and groups to a set of HTML files.

Other Management tools

You can also use Intel Device View, JetAdmin, Web JetAdmin, SNMP, and Telnet to manage your print server. For more information, see page 19.

Which tool should I use?

- The Netport Manager Config Wizard is the easiest way to set up your print server.
- Web Netport Manager is the easiest way to check or change the print server configuration from anywhere on your network without installing any software on a workstation.
- To configure for Novell bindery print server or remote printer modes, use the Netport Manager Config Wizard. Netport Manager creates the queues and other Novell objects.

Using Netport Manager

View status

Select a NetportExpress print server and then click the Status button.

Change the configuration

Right-click a print server and then click Configure Print Services.

Change port settings for your printer

Select a print server. Click the Configure button, click Device Properties, and click a Port tab.

Set an IP address

Right-click the print server, and click TCP/IP and SNMP.

Reset a NetportExpress print server to factory defaults

Right-click the NetportExpress print server and click Factory Defaults.

Update a print server

Select the print server and click the Update button. To select multiple print servers, press and hold down the CTRL key.

Change a password

Select the print server. Click the Options menu and click Passwords. If you forget your password, see *passwords* in the Online Guide index.

Using Web Netport Manager

To access Web Netport Manager, your browser must be set up to browse your network, and the NetportExpress print server must have an IP address.

Browse to a NetportExpress print server

- To find out if the print server has an IP address, print a test or diag page by pressing the Test Page or Diag button on the print server. If the print server has an IP address, the IP address is listed on the test page.
- To assign an IP address, see *Set an IP address* in the previous section.
- To browse to a print server, open your Web browser, type the NetportExpress print server IP address in the Internet address box, and press Enter.

Using Web Enterprise Netport Manager

To use Web Enterprise Netport Manager, your network must run TCP/IP and SNMP. Web Enterprise Netport Manager requires a browser that supports Java Development Kit (JDK) 1.1, such as Netscape Navigator* (version 4.06 or newer) or Microsoft Internet Explorer* (version 4.01 or newer).

Install Web Enterprise Netport Manager

Windows: Insert the NetportExpress Print Server CD into the selected Windows PC. If the setup program doesn't automatically start, run *setup.exe* from the CD. Click Install Web Software and follow the on-screen instructions.

UNIX: The *wenm.tar* file in the UNIX directory on the CD contains the Web application. Create a directory where you want to install the application and change to that directory. To extract the files from *wenm.tar*, type

```
tar xvf filename
```

where

filename is the path to *wenm.tar*.

OS/2: Copy the files from the WENM directory on the CD to your computer, network directory, or Web server.

Start Web Enterprise Netport Manager

Windows: From the Intel NetportExpress Print Server program group, click Web Enterprise Netport Manager.

UNIX and OS/2: Open your Web browser, browse to the directory where you installed the files, and open *index.htm*.

Using Intel Device View

Intel Device View is a device management tool for managing SNMP-enabled Intel networking devices including hubs, switches, routers and print servers. You can use Device View to browse to the NetportExpress print servers on your network.

Using JetAdmin and Web JetAdmin

If you already use JetAdmin or Web JetAdmin to manage other print servers, you can use these tools to manage and configure NetportExpress 10/100 and 10 print servers. For complete print server management capability, use Netport Manager. For more information, see *JetAdmin* in the Online Guide index.

Using SNMP

NetportExpress print servers can be managed from SNMP consoles such as HP OpenView*. For more information, see *SNMP* in the Online Guide index.

Using Telnet

You can use Telnet to check the print server status and change settings on the NetportExpress print server. You also can use Telnet to change port and IP settings if you don't have a Web browser. For advanced tasks, use Netport Manager or Web Netport Manager.

Display the Telnet main menu

- 1 From a DOS or UNIX prompt of a workstation running TCP/IP, type
`telnet netport_ip_address`
where
`netport_ip_address` is the IP address of the NetportExpress print server.
- 2 Log in as root using the password you set on the NetportExpress print server, or press Enter if you have not set a password.

Security

You can set passwords to limit who can configure the print server and to restrict printing access to individual printers. For example, if you have a color printer, then you can restrict access to that printer. To set passwords, go to Passwords on the Options menu in Netport Manager or Web Netport Manager.

About IP addresses

By default, the print server tries to get an IP address using RARP, BOOTP, and DHCP. If a 10 or 10/100 print server fails to obtain an IP address by one of these methods, it automatically assigns itself an IP address in the 169.254.x.x range.

Press the Test Page or Diag button on the print server to see if an IP address has been set on the print server. The easiest way to set an IP address is to use Netport Manager. If you are setting up to print with LPR, assign a static IP address to the print server. For information on manually setting an IP address, see *IP Address, setting manually* in the Online Guide index.

Troubleshooting

This section lists the most common causes for top technical problems.

You also can check the following resources:

- *Troubleshooting* in the Online Guide contents (HTML version on the CD, or Windows version in the Intel NetportExpress Print Server program group).
- *Customer Support*, see page 29 for more information.

Print server hardware problems

Blinking red activity light on print server

- On NetportExpress 10/100 or 10 print servers only, reset the print server by pressing the Reset button. On NetportExpress PRO print servers, disconnect and reconnect the print server's power source.
- If the activity light continues to blink red, use the chart below to interpret the blinks. For some errors, the lights will blink in a three-digit pattern. If this happens, record the pattern, and contact your vendor or Intel customer support.

Blinks	Cause
<i>Solid or 1</i>	Unit failure. Contact your vendor or Intel customer support.
2	Firmware failure. Initiate an emergency firmware update. See <i>firmware</i> in the Online Guide index.
3-6	Unit failure. Contact your vendor or Intel Customer Support.
7	Network interface failure. Replace the network cable or attach the print server to a different network location.

Activity light is off

There is no power to the unit. Check the power source and cable connections.

What does the LAN light on the print server mean?

NetportExpress 10/100 and 10 print servers only: The LAN light (on the back of the single-port models and the side of the three-port models) is solid when the print server is connected to the network and blinks while transmitting and receiving. For NetportExpress 10/100 print servers, the 100 light is on when the print server is connected to a 100Mbps network.

Netport Manager problems

Netport Manager won't launch

- The PC may not have the appropriate protocols installed. Try running Netport Manager from a different PC.
- One or more files may not be installed correctly. Uninstall, then reinstall Netport Manager.
- The PC may need to be restarted. If you have just installed Netport Manager and have not yet restarted your PC, restart now.
- Windows NT may not have Service Pack 3 or higher installed.

NetportExpress print server is not listed in Netport Manager

- The PC may need to be restarted. If you have just installed Netport Manager and have not restarted your PC, restart your PC.
- Check the activity light on the NetportExpress print server. If the light blinks red in a pattern, the NetportExpress print server won't appear in the list of print servers. Check the network connection or reset the print server. For more information, see *Blinking red activity light on print server* on page 21.
- Make sure the IP address assigned to the NetportExpress print server is valid for your network. To check this, print a test page by pressing the Test Page or Diag button on the print server.
- To update the list of print servers, click the Find button in Netport Manager.
- In the NetportExpress print server Group list, select the group for the model of the missing print server or select All.
- Reset the print server. Wait 60 seconds and then click the Find button in Netport Manager.
- If the print server is on a different subnet, make sure the appropriate subnet is in the discovery list. Open Netport Manager, click Options, click Netport Manager Communications, and click the IP Discovery tab.

For Microsoft networks

- Make sure the Discovery Options are enabled. From the Netport Manager Options menu, click Netport Manager and then click the Protocols tab. Make sure all search options are enabled in the Communications tab.
- Make sure your workstation has NetBEUI or the TCP/IP client for Microsoft networks installed and enabled.

For Novell networks

- Make sure the IPX/SPX protocol is running on the workstation.
- Make sure the IPX/SPX protocol is enabled in Netport Manager. From the Netport Manager Options menu, click Netport Manager Communications, and click the Protocols tab. Also, click the IPX Discovery tab and make sure the search options are enabled.
- Make sure the Reply to Get Nearest Server function is set to ON on at least one local server.
- Make sure you have the latest client from Novell running on the workstation.

For token ring networks

- Check the data rate switch on the NetportExpress print server. Also, try connecting the print server to the same logical ring as your workstation. If you leave the Source Routing option blank (or click None) for the print server, it doesn't send traffic across a source-routing bridge.
- Do a serial update with a null modem cable. See *serial update* in the Online Guide index.

Basic printing problems

Can't print or jobs are corrupted

- Check the parallel port settings in Netport Manager or Web Netport Manager by clicking Configure and then Device Properties. The parallel port speed must match the printer speed. If the Extended Capabilities Port (ECP) is enabled, try disabling it. If bidirectional communication is enabled, try disabling it. To set the port speed, click Configure in Netport Manager or Web Netport Manager, and choose Device Properties.
- Make sure the NetportExpress print server's serial port parameters match the settings for your serial printer. Check your printer documentation for the correct serial port parameters.
- Check the activity light on the NetportExpress print server. To check the print server's configuration, print a test or diag page by pressing the Test Page or Diag button on the print server.
- For best results, use a printer cable that is six feet or less in length. If you suspect something is wrong with the cable, replace it with a known good parallel cable that is marked "IEEE 1284-compliant."
- Try a different RS-232 cable for your serial port.
- The wrong printer driver may be installed on the workstation. Check your printer or operating system documentation for more information.

- Make sure your printer can be networked, see *Can my printer be networked?* on page 7. For a list of tested printers, see <http://support.intel.com/support/netport/printers.htm>.
- Make sure that a printer password has not been set or changed on the print server. See *passwords* in the Online Guide index. If a printer password has been set, you must to reconfigure the computer to print using that password. See the instructions in this guide for configuring Windows or UNIX systems to print. Printer passwords do not affect Novell print server, Novell remote printer, or AppleTalk printing.

Can't access the print server

- Try using a different management utility, such as Netport Manager or Web Netport Manager.
- Reset the print server to factory defaults (NetportExpress 10/100 and 10 print servers only). This resets all configuration information on the print server. Unplug the print server and then hold down the Test Page button while plugging in the print server. After about 20 seconds, the Activity light will rapidly flash amber. Release the Test Page button. Press the Test Page button again.

Can't print with Microsoft printing

- Make sure you haven't disabled protocols on the print server. Microsoft Printing must be enabled. To check in Netport Manager or Web Netport Manager, click Options and then click Protocol Enable/Disable.
- If you have set a printer password on the print server, run the NetportExpress Add Printer Wizard and set up the computer to print using the password.

Can't print with Novell

Make sure you haven't disabled protocols on the print server. Novell Printing must be enabled. To check in Netport Manager or Web Netport Manager, click Options, and then click Protocol Enable/Disable. For Novell printing over TCP/IP, make sure TCP/IP printing is enabled.

Can't print with UNIX, TCP/IP, or LPR

- Make sure the NetportExpress print server's IP address is valid. To check the IP address, press the Test Page or Diag button. The IP address is printed on the test page.
- Make sure TCP/IP printing is enabled. In Netport Manager or Web Netport Manager, click Options and then click Protocol Enable/Disable.
- The NetportExpress print server may not be connected to the network. Use ping from a UNIX workstation or DOS prompt to check IP connectivity to the NetportExpress print server.
- If you are using *proprint*, verify that *proprint* is located in the appropriate directory, for example, */usr/intl/hpux*. Run the following command line test from that directory:

```
./proprint IP_address job=2 port /etc/hosts  
where
```

IP_address is the IP address of the NetportExpress print server and *port* is 3001 for Parallel Port 1, 3002 for Parallel Port 2, and 2501 for the Serial Port.

If this does not work, bypass the *printcap* file and run *proprint* alone. Type on one line

```
./proprint IP_address job=2 port -pc /etc/hosts  
where
```

IP_address is the IP address of the NetportExpress print server and *port* is 3001 for Parallel Port 1, 3002 for Parallel Port 2, and 2501 for the Serial Port.

- If you are using LPR remote printing and printing binary or PostScript files, you may be using the wrong queue name on the print server. Make sure the queue name is one of the following: LPT1_PASSTHRU, LPT2_PASSTHRU, or COM1_PASSTHRU. For ASCII files and text, make sure the queue name is one of the following: LPT1_TEXT, LPT2_TEXT, or COM1_TEXT. If PASSTHRU is not working for PostScript files, then try LPT1_PS, LPT2_PS, or COM1_PS. If you have set a printer password on the print server, see *passwords* in the Online Guide index.

Can't print with AppleTalk

- Make sure that AppleTalk printing is configured and enabled on the print server. Check Status in Netport Manager or Web Netport Manager.
- The router's configuration of zone names may be incomplete. If the Chooser does not show the zone name of the NetportExpress print server, check your router's configuration of zone names. You must have a router and valid zone name to print with AppleTalk.
- The zone name selected in the Chooser may not be the same as the zone name configured on the print server.
- AppleTalk may not be enabled on the Macintosh workstation. Make sure there are zones visible in the Chooser.
- The wrong printer type might be entered on the print server. Try setting LaserWriter as the printer type in Netport Manager or Web Netport Manager.

Can't print a test page

- Make sure your printer can be networked, see *Can my printer be networked?* on page 7.
- The parallel port speed must match the printer speed. For more information, see *parallel port settings* in the Online Guide index.
- Check the printer to see if it is out of paper or jammed. Print a self-test page to make sure the printer is operational.
- Make sure the printer cable is stamped "IEEE 1284 compliant" or does not exceed six feet in length. If you suspect something is wrong with the cable, replace it with a known good cable.
- Make sure your printer is capable of printing ASCII or PostScript text. For NetportExpress PRO print servers, the printer must be able to print ASCII text.
Note: To print the test page or diag page from the print server, only PostScript or ASCII supported printing is required. Windows is not effected.

Technical Specifications

Specifications for NetportExpress 10 and 10/100 print servers

Network topology support

- 10BASE-T or 100BASE-TX (10/100 models), 10BASE-T (10 single-port), 10BASE-T and 10BASE2 (10 3-port)
- Connector: RJ-45 (plus BNC on 10 3-port)
- 10/100 model automatically negotiates 10 Mbps and 100 Mbps

Protocols

- NetBEUI: SMB-NBF
- IPX/SPX: auto-senses the IPX frame type (802.2, 802.3, Type II, or SNAP)
- NCP packet signatures: level 0-3 support (auto-selected)
- TCP/IP: BOOTP, RARP, DHCP, WINS, HTTP, SNMP, LPR, FTP
- AppleTalk: EtherTalk* or TokenTalk* (AppleTalk zone and router required)

Port specifications

- 1 or 2 bidirectional parallel ports
- 25-pin female connectors (IEEE 1284-compliant)
- Maximum throughput over 900 KBps (10/100 models only)
- Three-port version: 1 RS-232C serial port, 9-pin male connector

Hardware

- Dimensions
Single-port: 5.31 x 4.27 x 1.22 inches (13.48 x 10.84 x 3.09 cm)
3-port: 6.625 x 4.375 x 1.25 inches (16.84 x 11.12 x 3.17 cm)
- Weight
Single-port: 6 ounces (170 grams)
3-port: 10 ounces (283 grams)
- Power supply: 100-250VAC input. 5VDC, 1.5A output
- Emissions: FCC and CISPR-22 class A

Management options

Windows Netport Manager, Web Netport Manager, Web Enterprise Netport Manager, Intel Device View, Telnet, SNMP, JetAdmin, and Web JetAdmin

Specifications for NetportExpress PRO token ring print servers

Network topology support

- Autosenses between token ring STP Type 1 and UTP Type 3 connectors
- Supports both 4 Mbps and 16 Mbps ring speeds
- Supports source routing
- Supports Locally Administered Addresses (LAA)

Protocols

- NetBEUI: SMB-NBF
- IPX/SPX: auto-senses the IPX frame type (802.2, 802.3, Type II, or SNAP)
- TCP/IP: BOOTP, RARP, DHCP, HTTP, SNMP, LPR, FTP
- AppleTalk: EtherTalk or TokenTalk (AppleTalk zone and router required)

Port specifications

- 2 bidirectional parallel ports
- 25-pin female connector (IEEE 1284-compliant)
- 1 RS-232C serial port, 9-pin male connector

Hardware

- Dimensions: 7.25 x 5.13 x 1.25 inches (18.4 x 13.02 x 3.17 cm)
- Weight: 13 ounces (370 grams)
- Power supply: 110VAC or 240VAC input. 14VAC, 700 mA output
- Emissions: FCC and CISPR-22 class A

Management options

Windows Netport Manager, Web Netport Manager, Web Enterprise Netport Manager, Intel Device View, Telnet, and SNMP (MIB-II)

Customer Support

Troubleshooting

See *troubleshooting* in the Online Guide contents (HTML version on the Intel NetportExpress Print Server CD, or Windows version in the Intel NetportExpress Print Server program group).

Web and Internet sites

<i>Corporate information</i>	http://www.intel.com
<i>Customer support</i>	http://support.intel.com/support/netport
<i>News</i>	http://support.intel.com/newsgroups/netport.htm
<i>Print server products</i>	http://www.intel.com/network/go/print
<i>Tested printers list</i>	http://support.intel.com/support/netport/printers.htm
<i>Troubleshooting Assistant</i>	http://support.intel.com/support/netport/10100
<i>FTP</i>	ftp://download.intel.com

Customer support technicians

<i>US and Canada</i>	(916) 377-7000 (7:00 - 17:00 Pacific M - F)
<i>England</i>	+44 (0) 870 607 2439 (8:30 - 16:00 M - F)
<i>France</i>	+33 (0) 1 41 91 85 29 (9:30 - 17:00 M - F)
<i>Germany</i>	+49 (0) 69 9509 6099 (9:30 - 17:00 M - F)
<i>Italy</i>	+39 (0) 2 696 33276 (9:30 - 17:00 M - F)
<i>Australia</i>	+62-1-800-649-931 (7:00 - 17:00 Eastern M - F)
<i>Hong Kong</i>	+852-2-844-4456 (5:00 - 15:00 M - F)
<i>Korea</i>	+822-767-2595 (6:00 - 16:00 M - F)
<i>Singapore</i>	+65-831-1311 (5:00 - 15:00 M - F)
<i>Taiwan</i>	+886-2-718-9915 (5:00 - 15:00 M - F)
<i>Worldwide</i>	+1(916) 377-7000

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Country	Number	Language
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Germany	+49 (0) 69 9509 6099	German
Italy	+39 (0) 2 696 33276	Italian
UK	+44 (0) 870 607 2439	English

If the Customer Support Group verifies that the product is defective, they will have the Return Material Authorization Department issue you an RMA number to place on the outer package of the product. Intel cannot accept any product without an RMA number on the package.

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The compliance asserted by the following is applicable only to products that bear the mark or text required for each of these compliances.

FCC Compliance Statement

This product 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 harmful interference when the equipment is operated in a commercial environment.

This product generates, uses, and can radiate frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning this equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Change the direction of the radio or TV antenna.

To the extent possible, relocate the radio, TV, or other receiver away from the product.

Plug the product into a different electrical outlet so that the product and the receiver are on different branch circuits.

If these suggestions don't help, consult your dealer or an experienced radio/TV repair technician for more suggestions.

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

Caution: If you make any modification to the equipment not expressly approved by Intel, you could void your authority to operate the equipment.

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CE Compliance Statement

This product complies with the EU Directive, 89/336/EEC, using the EMC standards EN55022 (Class A) and EN55024. This product also meets or exceeds EN60950 safety requirements.

This product has been tested and verified to meet CISPR 22 Class A requirements.

Canada

Cet appareil numérique respecte les limites bruits radioélectriques applicables aux appareils numériques de Classe A prescrites dans la norme sur le matériel brouilleur: "Appareils Numériques", NMB-003 édictée par le Ministre Canadien des Communications.

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the interference-causing equipment standard entitled: "Digital Apparatus," ICES-003 of the Canadian Department of Communications.

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See the *Manuals* directory on the Intel® NetportExpress™ Print Server CD for an electronic copy of this manual in English, French, German, Italian, Spanish, Portuguese, and Simplified Chinese.

Une copie électronique de ce manuel est disponible en français dans le répertoire *Manuals* du CD-ROM Intel® NetportExpress™ Print Server.

Im Verzeichnis *Manuals* auf der Intel® NetportExpress™ Druckserver-CD finden Sie eine elektronische Kopie dieses Handbuchs auf Deutsch.

Consultare la directory *Manuals (Manuali)* sul CD di Intel® NetportExpress™ Print Server per una copia elettronica in italiano di questo manuale.

Consulte el directorio *Manuals (Manuales)* en el CD Intel® NetportExpress™ Print Server si desea ver una copia en español de este manual.

Acesse o diretório *Manuals* no CD do Intel® NetportExpress™ Print Server para obter uma cópia eletrônica deste manual em português.

要获得本手册的中文电子副本，请参阅 Intel (R) NetportExpress (TM) Print Server CD 中的手册目录。