

Intel NetportExpress™ Print Server

Setup Guide

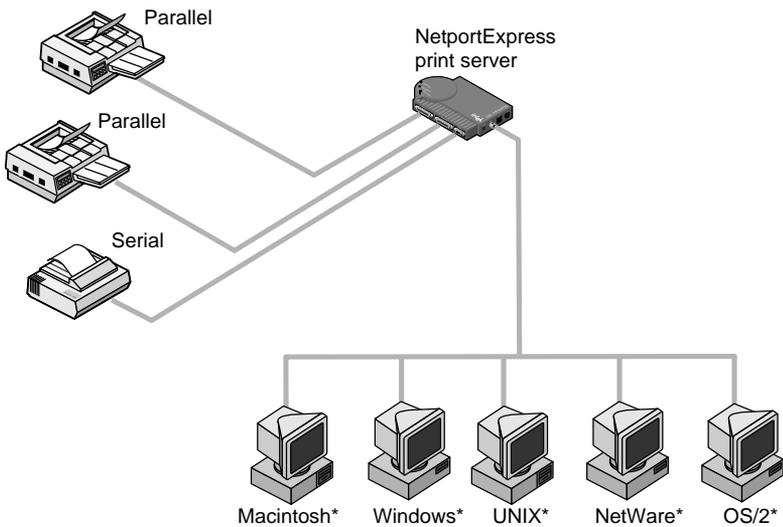


intel®

About NetportExpress™ PRO and PRO/100 print servers

Intel NetportExpress™ PRO and PRO/100 print servers provide high performance and centralized management for printers on multiprotocol networks. With NetportExpress print servers, you can locate printers anywhere on the LAN (Local Area Network).

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



PC-3782

Copyright © 1997 Intel Corporation. All rights reserved.
First edition, August 1997 P/N 679939-001

Intel Corporation
5200 N.E. Elam Young Parkway
Hillsboro, Oregon 97124-6497

Intel Corporation assumes no responsibility for errors or omissions in this guide. Nor does Intel make any commitment to update the information contained herein.

*Other product and corporate names may be trademarks of other companies and are used only for explanation and to the owners' benefit, without intent to infringe.

Contents

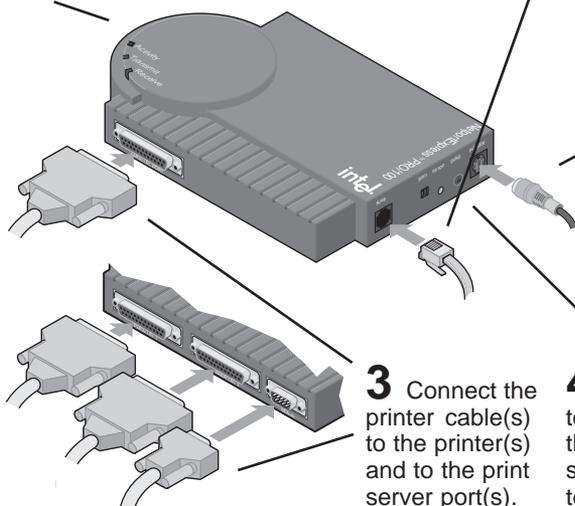
| | |
|---|----|
| Hardware Installation | 2 |
| PRO/100, external and internal PRO print servers | |
| Software Installation | 6 |
| Installing the CD-ROM and running setup | |
| Novell NetWare* NDS Configuration | 8 |
| Print server mode, Remote printer mode | |
| Novell NetWare Bindery Configuration | 10 |
| Print server mode, Remote printer mode | |
| Microsoft Network Printing | 12 |
| Windows* 95, Windows NT*, Windows for Workgroups, IP address | |
| LAN Manager*/LAN Server Configuration | 16 |
| Printing using netuse | |
| AppleTalk* Configuration | 18 |
| Printer connectivity | |
| UNIX* Configuration | 19 |
| IP address, proprint, lpr/lpd printing, firmware updates using tftp | |
| AIX* Configuration | 27 |
| lpr/lpd printing | |
| Managing the NetportExpress™ Print Server | 30 |
| Changing configurations, firmware updates, advanced settings | |
| Troubleshooting | 33 |
| Hardware, software, printing solutions | |
| Limited Warranty/Compliance Statements | 40 |
| Product information | |
| Customer Support | 42 |
| Numbers to call for help, World Wide Web access | |
| Index | 43 |

Hardware Installation

NetportExpress PRO/100 Single-port and 3-port print servers (Ethernet only)

Device ID and Network address (located on bottom)

Activity light



1 Connect the network cable to the RJ-45 connector. Use Category 5 cable to connect to a 100Mbps network. Use Category 3 or 5 cable to connect to a 10Mbps network.

2 Plug the power cable into the print server.

3 Connect the printer cable(s) to the printer(s) and to the print server port(s).

4 Press the "diag" button to send a test page from the NetportExpress print server to your printer. The test page includes the Device ID and other configuration information.

Continue with Software Installation, page 6 . . .

Tips for installing the PRO/100 print server

- When the activity light is solid green, the NetportExpress print server is ready. The other two lights may blink, indicating communication with the network. If the Activity light flashes red, see the troubleshooting section of this manual.
- The PRO/100 automatically senses the speed your Ethernet network is running: 10Mbps or 100Mbps.
- The print server also senses the Novell NetWare frame type: 802.2, 802.3, Ethernet II, or SNAP.

CAUTION When connecting the power cable, use the power supply that comes with your PRO/100. Another power supply could cause your PRO/100 to malfunction.

External NetportExpress PRO print servers (Ethernet and Token Ring)

Device ID and Network address (located on bottom)

Activity light

1 Connect the network cable (Category 3 or 5). The PRO Ethernet uses a BNC or an RJ-45 connector. The PRO token ring uses an RJ-45 or DB-9 connector.

2 Plug the power cable into the print server.

3 Connect the printer cable(s) to the printer(s) and to the print server port(s).

Ethernet connectors

Token Ring connectors

Switches

4 Press the "diag" button to send a test page from the NetportExpress print server to your printer. The test page includes the Device ID and other configuration information.

Continue with Software Installation, page 6 . . .

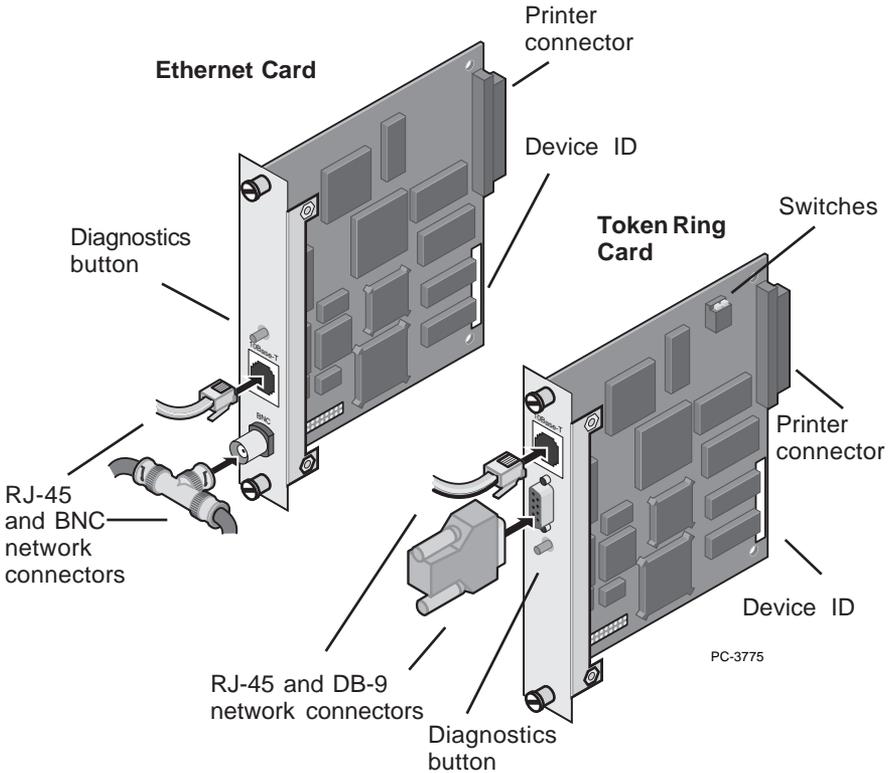
Tips for installing the External PRO print server

- When the activity light is solid green, the NetportExpress print server is ready. The other two lights may blink, indicating communication with the network. If the Activity light flashes red, see the troubleshooting section of this manual.
- The PRO senses the Novell NetWare frame type: 802.2, 802.3, Ethernet II, or SNAP.
- The token ring version autosenses data rate speeds when both switches are in the default UP position. (See page 34 for list of settings.)

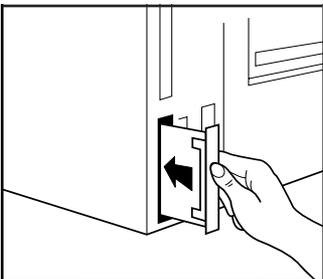
CAUTION When connecting the power cable, use the power supply that comes with your PRO. Another power supply could cause your PRO to malfunction.

Hardware Installation

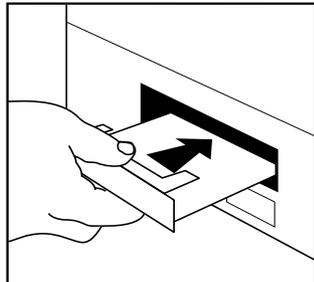
Internal NetportExpress PRO print server (Ethernet and Token Ring)



Examples of inserting NetportExpress PRO print server cards in printers. Your printer may look different from those shown. Make sure the printer connector on the card is fully seated into the printer slot connector.



PC-3124



PC-3126

To install the internal PRO print server card in your printer

- 1 Power down the printer and disconnect the printer power cable.
- 2 If necessary, remove the cover plate from the printer MIO (Modular Input/Output) slot.
- 3 Record the NetportExpress print server device ID so you can refer to it later.
- 4 Check the back of the MIO slot to see where the connector is.
- 5 Insert the print server card, making sure you align the connector on the card with the connector at the back of the MIO slot. When correctly seated, the face plate on the card should rest flat against the printer frame.
- 6 Secure the print server card by tightening the screws. Alternate tightening them to keep the card stable in the slot.
- 7 Attach the network cable for your type of network.
- 8 Plug in the printer power cable and power on the printer.
- 9 Press the diagnostics button on the NetportExpress print server card to print a test page. The test page includes the Device ID and other configuration information.

Continue with Software Installation, page 6. . .

Tips for installing the internal print server

- The PRO internal print server card connects to MIO printer slots.
- To get a complete list of all supported printers, see Intel's automated customer support services information at the back of this manual.
- The HP LaserJet* 4Si and 5Si printers have two MIO slots. Install the NetportExpress PRO print server card into the lower slot. For instructions, install the Netport Manager software on any networked Windows workstation and refer to online Help, or see Intel's online support documents.
- The token ring card autosenses data rate speeds when both switches are in the default UP position. (See page 34 for list of settings.)

Software Installation



UNIX and AIX software installation

Turn to the NOS Configuration section in this manual for UNIX or AIX systems.

Novell and Microsoft networks software installation

Installing Netport Manager software on one Windows-based workstation lets you manage all of your NetportExpress print servers. You can run Netport Manager on Windows 3.1x, Windows for Workgroups 3.11, Windows 95, and Windows NT 3.51 or 4.0 systems.

To install Netport Manager

- 1 Insert the CD-ROM in the selected Windows system.
 - *Windows 95 or Windows NT 4.0 systems.* The setup program should automatically appear. If it does not, choose Start and Run and browse to the CD-ROM drive.
 - *Windows 3.1x or Windows NT 3.51.* From Program Manager, click the File menu and then click Run. Browse to the CD-ROM drive.
- 2 Run `setup.exe` from the root directory.
- 3 Install Netport Manager, then turn to the appropriate NOS section to configure the NetportExpress print server for your system.

Note: If only the IP protocol is running on the system where you install Netport Manager, the NetportExpress print server must have an IP address to communicate with Netport Manager. To see if the print server has an IP address, print a test page. To assign an IP address, see page 15.



To configure the print server for your NOS, turn to . . .

| | |
|--|---------|
| Novell NetWare NDS Configuration | page 8 |
| Novell NetWare Bindery Configuration | page 10 |
| Microsoft Network Printing | page 12 |
| LAN Manager/LAN Server Configuration | page 16 |
| AppleTalk Configuration | page 18 |
| UNIX Configuration | page 19 |
| AIX Configuration | page 27 |

Note: You can configure each port on the NetportExpress print server for multiple protocols.

Netport Manager Main Window

Click **Properties** button to set the Netport Name and hardware settings

Click **Configure** button to configure the NetportExpress print server

| Group Name | Name | Device ID | Type | Version |
|----------------|-----------------|-----------|--------------|----------|
| All Netports | PVT BLOCHETTE | PI320540 | Pto External | V04.21.e |
| PROD JOB | PVT CNDY/AFPD | PI139408 | Pto External | V04.20.e |
| PROD | PVT COLLUM/AFPD | PI347855 | Pto Internal | V04.00.e |
| Internal Cards | PVT CONP/PI-APD | PI320557 | Pto External | V04.20.e |
| ICL | PVT DUT/AFPD | PI320554 | Pto External | V04.21.e |
| | PVT DOBE/AFPD | PI320552 | Pto External | V04.00.e |
| | PVT DRG/AFPD | PI347891 | Pto External | V04.19.e |

Making installation diskettes

You can make installation diskettes for the following:

- Netport Manager
- Port Monitor (for Microsoft Network printing)

Making installation disks lets you install these programs on any system that has a 3-1/2 inch diskette drive. To make the diskettes, insert the CD-ROM into a CD-ROM drive. When the setup screen appears, click Make Setup Disks.



Web Netport Manager

If you do not have a Windows-based workstation on your network for running Netport Manager, you can set up your NetportExpress print server using your Web browser. The print server contains a Web server that lets you view and change settings on the print server from your Web browser. This method requires an IP address for the NetportExpress print server.

- To find out if the print server has an IP address, print a test page by pressing the “diag” button on the print server.
- To set an IP address, see “Setting an IP address” on pages 15 and 20.
- To access Web Netport Manager, see “Using Web Netport Manager” on page 31.

Novell NetWare NDS Print Server Mode Configuration

In this mode, the NetportExpress print server replaces the NetWare print server program. The NetportExpress print server polls the NetWare file server queue for print jobs, then sends each job directly to the printer. This speeds up the printing process. Print server mode is recommended because it provides the best printing performance. It requires one NetWare user license for each print server (including multi-port print servers).



To set up the print server for NDS print server mode

Note: Netport Manager will create any queues or print servers you need for your NetWare setup. You don't have to create these objects in NWADMIN or PCONSOLE.

- 1 Log in as Admin at the workstation where you installed Netport Manager.
- 2 Start Netport Manager.
- 3 Select the print server whose Device ID matches the number of the NetportExpress print server you installed.
- 4 Click the Configure button.
- 5 Select Novell NDS Print Server.
- 6 Select a context for the print server. The context is the container where the print server object will be created.
- 7 For each printer connected to the print server, click a Port tab and assign an existing queue or add a new queue.
 - To assign an existing queue, double-click the queue to add it to the Assigned Queues list.
 - To add a new queue, click New Queues and create the queue.
- 8 Click OK and exit Netport Manager.



To set up a workstation to print

At each workstation that will print to this printer, use the capture command or the workstation's print utility to redirect printing to the NetWare queue you set up. For instructions see the NetportExpress Help section on NetWare printing.

Tip for NDS print server mode

For advanced setup parameters such as LIP (Large Internet Packets), see "Managing the NetportExpress Print Server," page 30.

Novell NetWare NDS Remote Printer Mode Configuration

In this mode, PSERVER.NLM polls the NetWare file server queue for waiting print jobs, then sends the print job to the Netport print server, which then sends the data to the printer. This mode does not require a NetWare user license for each NetportExpress print server, but is not recommended because it is much slower than print server mode.



To set up the print server for Novell NetWare NDS remote printer mode

- 1 Log in as Admin at the workstation where you installed Netport Manager.
- 2 If a print server does not already exist, create a print server using NWADMIN or PCONSOLE.
- 3 Start Netport Manager.
- 4 Select the print server whose Device ID matches the number of the NetportExpress print server you installed.
- 5 Click the Configure button.
- 6 Select Novell NDS Remote Printer.
- 7 Select a context for the print server. The context is the container where the print server object was created.
- 8 Select the Novell NDS print server you created in NWADMIN or PCONSOLE.
- 9 For each printer connected to the print server, click a Port tab and assign an existing queue or add a new queue.
 - To assign an existing queue, double-click the queue to add it to the Assigned Queues list.
 - To add a new queue, click New Queues and create the queue.
- 10 Click OK and close Netport Manager.
- 11 Unload and then reload PSERVER.NLM to enable the changes.



To set up a workstation to print

At each workstation that will print to this printer, use the capture command or the workstation's print utility to redirect printing to the NetWare queue you set up. For instructions see the NetportExpress Help section on NetWare printing.

Novell NetWare Bindery Print Server Mode Configuration

In this mode, the NetportExpress print server replaces the NetWare print server program. The NetportExpress print server polls the NetWare file server queue for print jobs, then sends each job directly to the printer. This speeds up the printing process. Print server mode is recommended because it provides the best printing performance. It requires one NetWare user license for each print server (including multi-port print servers).



To set up the print server for bindery print server mode

Note: Netport Manager will create any queues or print servers you need for your NetWare setup. You don't have to create these objects in NWADMIN or PCONSOLE.

- 1 Log in as Supervisor at the workstation where you installed Netport Manager.
- 2 Start Netport Manager.
- 3 Select the print server whose Device ID matches the number of the NetportExpress print server you installed.
- 4 Click the Configure button.
- 5 Select Novell Bindery Print Server.
- 6 Select the file server where the print server will be created.
- 7 For each printer connected to the print server, click a Port tab and assign an existing queue or add a new queue.
 - To assign an existing queue, double-click the queue to add it to the Assigned Queues list.
 - To add a new queue, click New Queues and create the queue.
- 8 Click OK and exit Netport Manager.



To set up a workstation to print

At each workstation that will print to this printer, use the capture command or the workstation's print utility to redirect printing to the NetWare queue you set up. For instructions see the NetportExpress Help section on NetWare printing.

Tip for bindery print server mode

For advanced setup parameters such as LIP (Large Internet Packets), see "Managing the NetportExpress Print Server," page 30.

Novell NetWare Bindery Remote Printer Mode Configuration

In this mode, PSERVER.NLM polls the NetWare file server queue for waiting print jobs, then sends the print job to the NetportExpress print server, which then sends the data to the printer. This mode does not require a NetWare user license for each NetportExpress print server, but is not recommended because it is much slower than print server mode.



To set up the print server for bindery remote printer mode

- 1 Log in as Supervisor at the workstation where you installed Netport Manager.
- 2 If a print server does not already exist, create a print server using NWADMIN or PCONSOLE.
- 3 Start Netport Manager.
- 4 Select the print server whose Device ID matches the number of the NetportExpress print server you installed.
- 5 Click the Configure button.
- 6 Select Novell Bindery Remote Printer.
- 7 Choose the file server where the Novell bindery print server is located. (This is the file server where PSERVER is running.)
- 8 Select the PSERVER you want to use from the Novell bindery print server list.
- 9 For each printer connected to the print server, click a Port tab and assign an existing queue or add a new queue.
 - To assign an existing queue, double-click the queue to add it to the Assigned Queues list.
 - To add a new queue, click New Queues and create the queue.
- 10 Click OK and close Netport Manager.
- 11 Unload and then reload PSERVER.NLM at the file server chosen in step 7 to enable the changes.



To set up a workstation to print

At each workstation that will print to this printer, use the capture command or the workstation's print utility to redirect printing to the NetWare queue you set up. For instructions see the NetportExpress Help section on NetWare printing.

Microsoft Network Printing

The NetportExpress print server can print jobs from networked workstations running Windows* 95, Windows NT*, or Windows for Workgroups*. Using NetportExpress Port Monitor with a Windows 95 or Windows NT workstation, you can also share printing with other systems, including Windows for Workgroups and LAN Manager or LAN Server.



To set up the print server for Microsoft network printing

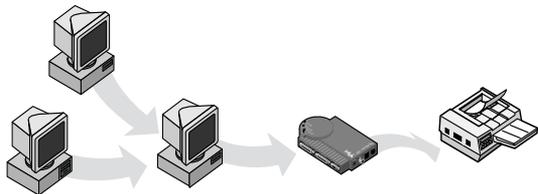
- 1 Start Netport Manager.
- 2 Select a NetportExpress print server in the Netport Manager window.
- 3 Click the Configure button.
- 4 Click Microsoft Network Printing.
- 5 Specify a Name and Domain for the print server.
- 6 For each printer connected to the print server, click a Port tab and specify a port name for the printer connected to that port.

Setting up Workstations to print

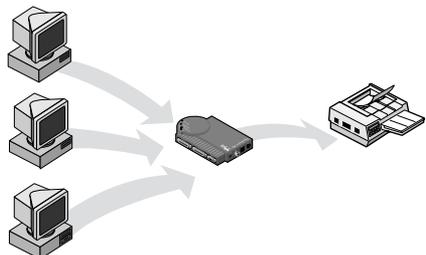
To print from Windows 95 and Windows NT systems, install the Intel NetportExpress Port Monitor. The Port Monitor installs on the system as a local port that you can share with other systems.

Printing Options

- **Print sharing:** Install the NetportExpress Port Monitor on one Windows system and share the port with other Windows systems. The system with the Port Monitor spools print jobs and sends them to the NetportExpress print server.



- **Direct printing:** Install the NetportExpress Port Monitor on each Windows system and print directly to the NetportExpress print server.



Setting up a system to print directly or to share printing



To set up a Windows 95 workstation

- 1 Insert the NetportExpress Print Server CD into the CD-ROM drive.
- 2 If Setup doesn't run automatically, run setup.exe from the CD.
- 3 In Setup, click the NetportExpress Port Monitor button. When setup is finished, you can set up printing on the workstation.
- 4 From My Computer, double-click the Printers folder.
- 5 Double-click Add Printer and follow the steps to set up a temporary **local printer** on LPT1. Do *not* print a test page.
- 6 After you finish the Add Printer Wizard, right-click the new printer and click Properties.
- 7 Click Details and then click Add Port.
- 8 Click Other, select Intel NetportExpress Network Port, and then click OK.
- 9 Click Browse to select the Domain, the Netport print server, and Port where your printer is connected to the NetportExpress print server.

- 10 **To share the printer:** in Properties, click the Sharing tab. Select Shared As and specify a Share Name.



To set up a Windows NT 4.0 system

- 1 Insert the NetportExpress Print Server CD into the CD-ROM drive.
- 2 If Setup doesn't run automatically, run setup.exe from the CD.
- 3 In Setup, click the NetportExpress Port Monitor button. When setup is finished, you are ready to set up printing on the system.
- 4 From My Computer, double-click the Printers folder.
- 5 Double-click Add Printer and select **My Computer**.
- 6 Follow the steps to set up a temporary **local printer** on LPT1. Do *not* print a test page.
- 7 After you finish the Add Printer Wizard, right-click on the new printer and click Properties.
- 8 Click Ports and then click Add Port.
- 9 Select Intel NetportExpress Network Port and click New Port.
- 10 Click Browse to select the Domain, Netport print server, and Port where your printer is connected to the NetportExpress print server.
- 11 **To share the printer:** in Properties, click the Sharing tab. Select Shared and specify a Share Name.



To set up a Windows NT 3.51 system

- 1 Insert the NetportExpress Print Server CD into the CD-ROM drive.
- 2 Run setup.exe from the CD.
- 3 In Setup, click the NetportExpress Port Monitor button. When setup is finished, you are ready to set up printing on the system.
- 4 Start Print Manager.
- 5 From the Printer menu, click Create Printer.
- 6 In the Create Printer window, type a printer name.
- 7 Select a driver for the printer.
- 8 In the Print to list, select Other.
- 9 Select Intel NetportExpress Network Port and click OK.
- 10 Click Browse to select the domain, NetportExpress print server, and port where your printer is connected to the print server.
- 11 **To share the printer:** in Print Manager, select the printer. From the Printer menu, select Properties. Click Share This Printer on the Network and specify a Share Name.

Setting up systems to print to a shared printer



To set up a Windows 95 or Windows NT 4.0 workstation to print to a shared printer

- 1 From My computer, open the Printers folder.
- 2 Open Add Printer to start the Add Printer Wizard.
- 3 Select **Network Printer** and specify the Share Name you set up on the system where you installed the NetportExpress Port Monitor.



To set up a Windows NT 3.51 workstation to print to a shared printer

- 1 Start Print Manager and click the Printer menu.
- 2 Choose Connect to Printer.
- 3 Select the new printer in the Shared Printers list and specify the Share Name you set up on the system where you installed the NetportExpress Port Monitor.

Printing with Windows for Workgroups

Note: Windows for Workgroups cannot run the NetportExpress Port Monitor. However, you can share printing with a Windows 95 or Windows NT system that is running NetportExpress Port Monitor. See pages 12-13.



To set up a Windows for Workgroups workstation to print to a shared printer

- 1 From Print Manager, click the Printer menu, and then click Connect to Printer.
- 2 In the Connect to Printer window, select the Share Name for the printer you set up on the Windows 95 or Windows NT system where you installed the NetportExpress Port Monitor.



To set up a Windows for Workgroups workstation to print directly to a printer

- 1 Start Print Manager on the Windows for Workgroups system.
- 2 Open Printers.
- 3 From the Printers menu, choose Connect to Printer.
- 4 Select the new printer in the Show Shared Printers list. The NetportExpress print server will appear in the domain you configured in Netport Manager.

Printing in Windows NT using LPR

You can print in Windows NT using lpr. This topic is covered in the NetportExpress Help. The NetportExpress print server must have an assigned IP address to print using lpr.

Setting an IP address in Windows NT using ARP (Address Resolution Protocol)

- 1 Make sure you are in the same network segment as the NetportExpress print server.
- 2 From a Windows NT or Windows 95 workstation, go to the command prompt.
- 3 Type: **arp -s *ip_address network_address***
where
ip_address is the IP address you want to assign to the NetportExpress print server.
network_address is the 12-character network address printed on the bottom of the NetportExpress print server. For Windows NT, the address must be typed in this format: xx-xx-xx-xx-xx-xx.
Example: 00-A0-C9-12-34-56
- 4 Set the IP address on the print server by typing
ping *ip_address*
where ip_address is the address you used in step 3.

LAN Manager/LAN Server Configuration

In Microsoft LAN Manager and IBM LAN Server printing, the workstation sends a print job to a printing process, and the job is put in a print queue and sent to the NetportExpress print server. The print server then routes the job to the printer through one of its connected ports.

If you have a Windows 95 or Windows NT workstation on the network, you can also print using Microsoft network printing. See pages 12-15.



To set up the NetportExpress print server

Note: Netport Manager runs only on a Windows-based workstation. If you have only OS/2* workstations on your network, you can use Web Netport Manager to configure your NetportExpress print server. See "Using Web Netport Manager" on page 31.

- 1 Start Netport Manager.
- 2 Select the print server whose Device ID matches that of the NetportExpress print server you installed.
- 3 Click the Configure button.
- 4 Select Microsoft Network Printing (for LAN Manager) or select LANServer.
- 5 Choose the Domain where you want the NetportExpress print server to reside.
- 6 For each printer connected to the print server, click a Port tab and specify a port name for the printer connected to that port.



To set up printing on an OS/2 workstation for Microsoft LAN Manager

- 1 At the OS/2 command prompt on the LAN Manager server, redirect printing to the NetportExpress print server by typing on one line:

```
NET USE LPT2: \\NETPORT\PORT
```

where

LPT2 is the Device ID.

NETPORT is the name you've given the print server.

PORT is the port name you used for the shared printer.

- 2 Click Print Manager on the same server, choose Configure/Queue from the menu, and click Add.
- 3 Set the Name, Description, Queue and other entries you want, then click Add.
- 4 Click OK.
- 5 Return to the OS/2 command prompt and type: **NET ADMIN**

- 6 From the main menu, choose View/Share the Resource, then click Add.
- 7 From the list box, choose Printer, then click Add.
- 8 Set the Queue name by using the name of the queue you set up in the steps above.
- 9 Input the Share Name and other required settings, then click OK.
- 10 Click Finish. Set the required entry for the next screen, then click OK/Finish.
- 11 From the main menu, click View/Exit and return to the command prompt.
- 12 At the command prompt, confirm the settings by typing:

NET SHARE

Note: To stop redirection, use a command such as

NET USE LPT2: /DELETE



To set up printing on an OS/2 workstation for IBM LAN Server

- 1 At the OS/2 command prompt on the LAN Server server, redirect printing to the NetportExpress print server by typing on one line:
NET USE LPT2: \\NETPORT\PORT
where
LPT2 is the Device ID.
NETPORT is the name you've given the print server.
PORT is the port name you used for the shared printer.
- 2 On the OS/2 desktop, open Templates.
- 3 Drag and drop the printer template to a folder on the desktop.
- 4 In the Create a Printer window, type the printer name you want.
- 5 Choose LPT1.
- 6 From the driver list, choose Corresponding Printer Drivers.
- 7 Click Create.
- 8 Click OK.
- 9 Indicate whether you want the system to install an equivalent WIN-OS2 printer configuration, and share the printer you created.

Note: To stop redirection, use a command such as

NET USE LPT2: /DELETE

To share the printer you created

Click the top-left corner of the printer icon. When a drop-down menu appears, choose Share Printer to share the printer on the network.

AppleTalk Configuration

The NetportExpress print server can service print jobs submitted by Macintosh* workstations connected to an Ethernet or token ring network.

To print using LocalTalk*, connect the print server through a router to an Ethernet segment.



To configure the NetportExpress print server for AppleTalk

- 1 At the Windows workstation where you installed Netport Manager, start that program.
- 2 Select the print server whose Device ID matches the number of the NetportExpress print server you have installed.
- 3 Click the Configure button.
- 4 Select AppleTalk.
- 5 Select a zone name for the NetportExpress print server in the AppleTalk Zone field.
- 6 Click on a Port tab.
- 7 Type a Chooser Name so the printer will appear in the Chooser on Macintosh workstations.
- 8 Identify the Printer Type where the print server is connected. This must match the printer driver name shown in the Chooser. The default LaserWriter* will work for any PostScript* printer.
- 9 Select the Font Group that resides on the printer. Default is 35.
Note: If your printer supports bi-directional communication capability, the default will be “automatically set by printer.”
- 10 Click OK to complete the set up.



To set up a workstation to print

- 1 At an Apple workstation, open Chooser.
- 2 Select the printer driver for the printer connected to the NetportExpress print server. If you're using a PostScript printer, you can select either LaserWriter or the PostScript printer icon for your printer.
- 3 If the Chooser window displays an AppleTalk Zone list, select the zone you specified when setting up 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 Configuration

The NetportExpress print server accommodates numerous UNIX system configurations by providing alternate ways to print. The recommended print method uses *proprint*, which lets you view the status of print jobs through log files. You can also print using *lpr/lpd* and *ftp*. (FTP printing is documented in Web NetportExpress Help.)

Installing the *proinstall* software for UNIX gives you the files necessary to use *proprint*. The software also includes the UNIX readme files.



To install the software (AIX users, turn to page 27)

Note: Install the software if you're using *proprint* or want the readme files.

- 1 Log in to a UNIX workstation as root.
- 2 Type: `ls -l /cdrom/npcdrom` to determine if the mounting directory exists.
If necessary, create the directory by typing `mkdir -p /cdrom/npcdrom`
- 3 Insert the CD-ROM into a UNIX workstation. If the CD-ROM does not automatically mount, follow the directions below to mount the CD for your system.

| System | Mount Instructions (type on one line) |
|-------------|---|
| HP-UX | <code>mount -t cdfs -o ro /dev/dsk/c1d1s0 /cdrom/npcdrom</code> |
| SCO | <code>mount -f IS09660 -o ro,lower /dev/cd0 /cdrom/npcdrom</code> |
| Solaris 2.x | <code>mount -F hsfs -r /dev/dsk/c0t6d0s2 /cdrom/npcdrom</code> |
| SunOS 4.1.3 | <code>mount -t hsfs -o ro /dev/sr0 /cdrom/npcdrom</code> |
| UnixWare | <code>mount -F cdfs -r /dev/cdrom/c0b0t2l0 /cdrom/npcdrom</code> |

- 4 Extract *proinstall* from the CD-ROM to your UNIX host workstation. To do this, type on one line:

```
tar xvf /cdrom/npcdrom/unix/prounix.tar
/usr/intl/proinstall
```

- 5 Extract *proprint* and the operating system files. To do this, type on one line:

```
tar xvf /cdrom/npcdrom/unix/prounix.tar
/usr/intl/subdirectory
```

where *subdirectory* is one of the following:

| | | |
|--------------------------|-----------------------------|------|
| solx86 (Solaris 2.x x86) | solaris (solaris 2.x SPARC) | sco |
| sun (SunOS 4.1.x) | unixware | hpux |

Setting an IP Address in UNIX

The NetportExpress print server must have an assigned IP address to print with UNIX. The print server by default tries to get an IP address using RARP, BOOTP, and DHCP. The print server and workstation or server running the commands must be connected to the same subnet and not separated by routers.



To manually set an IP address for UNIX using ARP

- 1 Log in to a UNIX workstation as root.
- 2 Use a UNIX editor like vi to add the Netport IP address and host name to the `/etc/hosts` file.
- 3 Register the print server on your workstation by typing on one line:

```
arp -s netportexpress network_address temp  
where
```

netportexpress is the IP address or the host name of the NetportExpress print server in the `/etc/hosts` file.

network_address is the NetportExpress network address from the test page or the bottom of the print server device. For UNIX this address must be entered in two-digit segments separated by colons. Example: 00:AA:00:1E:5D:B8

Note: To get an IP address that you can use for the NetportExpress print server, see your network administrator.

- 4 Set the NetportExpress IP address by typing

```
ping netportexpress
```

where *Netportexpress* is the IP address or the host name of the NetportExpress print server in the `/etc/hosts` file.

To use telnet to set parameters such as subnet mask and default gateway

- 1 From the UNIX workstation, use telnet to access the print server.
Type: **telnet** *ip_address*
where *ip_address* is the IP address of the NetportExpress print server.
- 2 Log in as root.
- 3 Type the NetportExpress print server password, or press Enter if there is no password.
- 4 From the Main menu, choose TCP/IP Configuration.
- 5 Choose the option you want to change and press Enter.
- 6 Define the parameters you want to set and press Enter.
- 7 Exit telnet.

Setting up a UNIX workstation to print

The NetportExpress print server offers two methods for printing: using *proprint* or using lpr/lpd. The *proprint* program, which comes with your NetportExpress print server, enables you to view the status of print jobs through log files. As the following table shows, most systems can use *proprint*. Directions are provided for both *proprint* and lpd/lpr printing setup.

| Operating System | Prints with <i>proprint</i> | Prints with lpr/lpd |
|-------------------------------------|-----------------------------|---------------------|
| HP-UX | X | X |
| SCO | X | X |
| Solaris | X | X |
| SunOS | X | X |
| UnixWare | X | X |
| Other BSD systems | | X |
| Most System V, Release 4 systems | | X |



To set up the workstation to print with *proprint* (HP-UX, SCO, Solaris, SunOS, UnixWare)

- 1 Make sure you have already installed the software and are logged into the UNIX workstation as root.
- 2 At the UNIX workstation command line, type
cd /usr/intl
- 3 Type **./proinstall**
- 4 Choose the UNIX platform you want.
- 5 From the *proinstall* main menu, choose option 2.
- 6 Follow the directions on the screen for entering the IP address of the NetportExpress print server.
- 7 Choose the print mode. PostScript mode is used for PostScript, most applications, and PCL (Printer Command Language) printing. Choose text only if you're printing UNIX text files.
- 8 Follow the instructions on the screen to enter a printer name.
- 9 Follow the instructions on the screen to complete the installation.
- 10 Print a test file to confirm your UNIX host configuration.



To set up the workstation to print with lpr/lpd on Solaris, UnixWare, and other System V, Release 4-based systems

- 1 Log in to your UNIX workstation as root.
- 2 In the `/etc/hosts` file, add a unique host name and IP address for each NetportExpress print server you want to configure.
- 3 Set up the print queue and remote printer. You can use the native System Administration utility to add a remote printer of type BSD, or you can add it from a command line by typing one of the following sets of entries.
 - a Type: `lpsystem -t bsd host`
where host is the host name from step 2.
 - b Type the printer entry.
 - For printing PostScript or PCL files, type on one line:
`lpadmin -p printer -s host!port -I postscript,simple`
 - For printing standard UNIX text files, type on one line:
`lpadmin -p printer -s host!port -I simple`

where:

printer is the name of the printer queue.

host is the name of the print server from step 2 above.

port defines a remote printer attached to the NetportExpress print server. It can be

 - LPT1_PASSTHRU or LPT1_TEXT (parallel port 1 or the internal card)
 - LPT2_PASSTHRU or LPT1_TEXT (for parallel port 2)
 - COM1_PASSTHRU or COM1_TEXT (for the serial port)

Note: Use PASSTHRU for PCL, PostScript, or application files and TEXT for standard UNIX text files.
- c Type:
`accept printer`
`enable printer`

where:

printer is the name of the printer queue.

- 4 Test the configuration. At the command line, type:

```
ping host  
lp -d printer file
```

where:

host is the name of the NetportExpress print server from step 2 above.

printer is the name of the printer queue.

file is the name of a file.



To set up a workstation to print with lpr/lpd on HP-UX

- 1 Log in to your HP-UX workstation as root.
- 2 In the `/etc/hosts` file, add a unique host name and IP address for each NetportExpress print server you want to configure.
- 3 Set up the print queue and remote printer.

- 4 Type: **lpshut**

- 5 Type on one line:

```
lpadmin -pprinter -v/dev/null -ormhost orpport  
-ob3
```

where

printer is the print queue on the local system.

host is the NetportExpress print server.

port defines the remote printer attached to the NetportExpress print server. It can be

LPT1_PASSTHRU or LPT1_TEXT (for parallel port 1 or the internal card)

LPT2_PASSTHRU or LPT2_TEXT (for parallel port 2)

COM1_PASSTHRU or COM1_TEXT (for the serial port)

Note: Use PASSTHRU for PCL, PostScript, or application files and TEXT for standard UNIX text files.

- 6 Type:

```
accept printer
```

```
enable printer
```

```
lpsched
```

where

printer is the name of the printer queue on the local system.



To set up the workstation to print with lpr/lpd on SunOS and other BSD-based systems

- 1 Log in to your UNIX workstation as root.
- 2 Add the NetportExpress print server's IP address and host name to the `/etc/hosts` file on the BSD host.
- 3 Add the following entries for the printer to the bottom of the `/etc/printcap` file.

```
printer_name|alternate_name|comment:\
:lp=:\
:rm=host:\
:rp=port:\
:mx#0:\
:lf=/usr/spool/lpd/errorlog:\
:sd=/usr/spool/lpd/printer_name:
```

IMPORTANT: The last entry must end with a colon (:)
not with a backslash (\).

where:

printer_name/*alternate_name* is a printer name and alternate printer name. Example: `lj3ps|LaserJet_IIIsi`

comment is an optional comment. Example:

`printer_on_port_1`

`:lp` is a required field.

host defines a host name. Use either the NetportExpress print server IP address or the print server name as entered in the `/etc/hosts` file.

port is a remote printer attached to the NetportExpress print server. It can be one of the following:

LPT1_PASSTHRU or LPT1_TEXT (for parallel port 1 or the internal card)

LPT2_PASSTHRU or LPT2_TEXT (for parallel port 2)

COM1_PASSTHRU or COM1_TEXT (for the serial port)

Note: Use PASSTHRU for PCL, PostScript, or application files and TEXT for standard UNIX text files.

`mx#0` provides unlimited buffer space.

`/usr/spool/lpd/errorlog` defines the location of the error log file.

`/usr/spool/lpd/printer_name` defines the directory for spooled files.

- 4 Go to the shell prompt and create a spool directory for the printer, if the directory doesn't already exist. To do this, type the following commands:

```
mkdir spool_directory  
chown daemon spool_directory  
chgrp daemon spool_directory  
chmod 775 spool_directory
```

where:

spool_directory is specified in the `/etc/printcap` file by the `sd=` option.

(Example: `/usr/spool/lpd/lj3ps`)

- 5 Enable queuing for the printer by typing the following command:

```
lpc enable printer
```

where:

printer is the local printer specified in the `/etc/printcap` file (for example: `lj3ps`)

- 6 Enable printing by typing the following command:

```
lpc start printer
```

where:

`PRINTER` is the local printer specified in the `/etc/printcap` file (`lj3ps` in the `printcap` sample)

- 7 Test the configuration by typing:

```
ping host
```

```
lpr -P printer file
```

where:

host is the name of the NetportExpress print server as it appears in the `/etc/hosts` file.

printer is the name of the printer queue.

file is the name of a file.

Upgrading firmware using TFTP

When you get a product upgrade, you can use TFTP (Trivial File Transfer Protocol) to install it. You must have access to a UNIX host running the TFTP daemon containing the update files.



To upgrade the firmware using TFTP

Follow steps 1-4 to initialize the TFTP daemon. If it's already running, skip to step 5.

- 1 Edit the `/etc/inetd.conf` file. From your workstation, type an entry for your TFTP daemon. Example: (for Solaris users) type on one line:

```
tftp dgram upd wait root /usr/sbin/in.tftpd  
in.tftpd -s /usr/local/tftpboot
```

where `/usr/local/tftpboot` is the TFTP home directory.

- 2 Save the `inetd.conf` file.
- 3 Use `grep` to get the `inetd` daemon process ID. You'll need this to reinitialize the `inet` daemon. Type

```
ps -ef | grep -v grep | grep inetd
```

output example:

```
root 104 1 80 Dec 13 ? 0:01 /usr/sbin/  
inetd -s
```

where `104` is the `inetd` daemon process ID.

- 4 Reinitialize the `inet` daemon. Type

```
kill -HUP process_ID
```

where `process_ID` is the process ID of the `inetd` daemon obtained in step 3 above (104 in the example).
- 5 Copy `npro.upd` (network update file) into the home directory of your TFTP daemon.
- 6 Type `telnet netportexpress_ip_address` to connect to the print server.
- 7 From `telnet`'s main menu, choose Utilities, then choose Network Update.
- 8 Enter the `tftp` server IP address and the path and filename of the network update file.
- 9 Choose `yes` to continue the network update. Network Update closes the `telnet` connection.
- 10 When Network Update is complete, you'll be able to type

```
telnet netportexpress_ip_address
```

to communicate with the NetportExpress print server.

AIX Configuration

Intel's NetportExpress print server can print with AIX using lpr/lpd. To configure AIX for printing, use SMIT (System Management Interface Tool) . For both versions (4.1 and 3.2.5) complete these sections:

- To install the software
- To set the IP address

Then see the printing section for your AIX version to complete setup.



To install the software

- 1 Log in to an AIX workstation with root privileges.
- 2 Mount the CD-ROM to /cdrom/npcdrom by typing
Mount -v cdrfs -o ro /dev/cd0 /cdrom/npcdrom
where
/dev/cd0 is the device special file for the CD-ROM drive. This is system-dependent; check your system documentation for the exact file name.
- 3 Extract *proflash* and other operating system files by typing on one line:
tar xvf /cdrom/npcdrom/unix/prounix.tar /usr/intl/aix
- 4 Print a test page by pressing the “diag” button on the NetportExpress print server.



To set the IP address

- 1 Log in to your AIX workstation as root.
- 2 Add an entry to the host table by typing
smit mkhostent
- 3 Go to the command line and type on one line:
arp -s ether *ip_address* *netport_address* temp
where
ip_address is the IP address of the NetportExpress print server.
netport_address is the print server network address from the bottom of the print server device.
 - To get an IP address to use for the NetportExpress print server address, see your network administrator.
 - To get the print server network address, see the bottom of the print server device or the test page.

- 4 Type the NetportExpress IP address in the internet address field and the NetportExpress host name in the Host Name field (Host Name is any valid UNIX host name you choose).
- 5 Press F12 to exit smit.
- 6 Connect to the NetportExpress print server by typing:
`telnet NetportExpress_IP_address`
- 7 Log in as root.
- 8 From the telnet main menu, choose the TCP/IP Configuration option, such as subnet mask or Gateway address, that you want to configure and press Enter.
- 9 Define the parameters for each option you want to configure and press Enter.
- 10 Exit the telnet screen.
- 11 Test your network setup and connection by typing
`ping NetportExpress_host_name`



To set up printing on AIX 4.1

- 1 Log in as root and type
`smit mkrque`
- 2 From the Attachment Type field, choose remote.
- 3 Type an entry for the option you want to configure for remote printing.
 - **Name of queue to add.** Type the name of the local print queue.
 - **HOSTNAME of remote server.** Type the HOSTNAME of the PRO/100 you added to the host table.
 - **Name of QUEUE on remote server.** Valid queue names are:
LPT1_PASSTHRU or LPT1_TEXT (for parallel port 1 or the internal card)
LPT2_PASSTHRU or LPT2_TEXT (for parallel port 2)
COM1_PASSTHRU or COM1_TEXT (for the serial port)
Note: Use PASSTHRU for PCL, PostScript, or application files and TEXT for standard AIX text files.
 - **Type of print spooler on remote server.** Click list, then click BSD, the printing protocol of the NetportExpress print server.
- 4 Click OK, then click Done to save your configuration.
- 5 Click Cancel to exit smit.
- 6 Test AIX printing with the NetportExpress print server. From the AIX workstation, type

```
lpr -P local_print_queue /etc/hosts
```

where *local_print_queue* is the name you assigned in the Name of queue to add field.



To set up printing on AIX 3.2.5

- 1 When logged in as root, type
smit mkrque
- 2 Type an entry for each option you want to configure to make a remote printer queue.
 - **Name of queue to add.** Type the name of the queue you want to add.
 - **Activate the queue?** Click list, then click yes or no.
 - **Destination Host for remote jobs.** Type the name of the host you added to the host table.
 - **Pathname of the Short Form Filter for queue status output.** Click list to choose the pathname of the Short Form Filter you want to add.
 - **Pathname of the Long Form Filter for queue status output.** Click list to choose the pathname of the Long Form Filter you want to add.
 - **Name of queue on remote printer.** Valid queue names are:
LPT1_PASSTHRU or LPT1_TEXT, LPT2_PASSTHRU or LPT2_TEXT, COM1_PASSTHRU or COM1_TEXT
Note: Use PASSTHRU for PCL, PostScript, and application files and TEXT for standard UNIX text files.
 - **Name of device to add.** Type the name of the printer you want to add.
 - **Backend Program pathname.** Type
/usr/lpd/rembak
- 3 Click Do, then press F12 to exit smit.
- 4 Test AIX printing with the NetportExpress print server. From the AIX workstation type
lpr -P *local_print_queue* /etc/hosts
where
local_print_queue is the name you assigned in the Name of queue to add field.

Managing the NetportExpress Print Server

The NetportExpress print server supports several network and printer management tools. The Windows-based Netport Manager application provides print server configuration, status, and management for all supported network operating systems.

You also can access telnet and a web-based interface, Web Netport Manager, which provides additional methods for managing the NetportExpress print server. These two services require an IP address for the NetportExpress print server.



Using Netport Manager



To view status

Select a NetportExpress print server and click the status button.

To change parallel port speed

Select a NetportExpress print server. Click the Properties button, and click a parallel port tab.

To change configuration

Right-click a NetportExpress print server and choose Configure print services from the pop-up menu.

To reset a NetportExpress print server to factory defaults

Right-click the NetportExpress print server and choose Factory Defaults from the pop-up menu.

To update a print server using flash technology

Select the NetportExpress print servers you want to update. (Holding down the shift key will let you select more than one print server. The selected print servers must be in the same network segment.) Click the Update button.

To change communications parameters (such as LIP for NetWare)

Select a NetportExpress print server and choose Communications from the Options menu.

To change a password

Select a NetportExpress print server and click the Properties button. Click the password tab.

To set the IP address

Select a NetportExpress print server and click the Configure button. Select TCP/IP. If the IP address does not display, you can assign an address. If you need to request an IP address, see your Network Administrator.



Using Web Netport Manager

You can also manage your print servers using your web browser to connect to the Web server running on the NetportExpress print server.

To run Web Netport Manager you will need Netscape* or Microsoft Internet Explorer*, versions 3.0 or later.

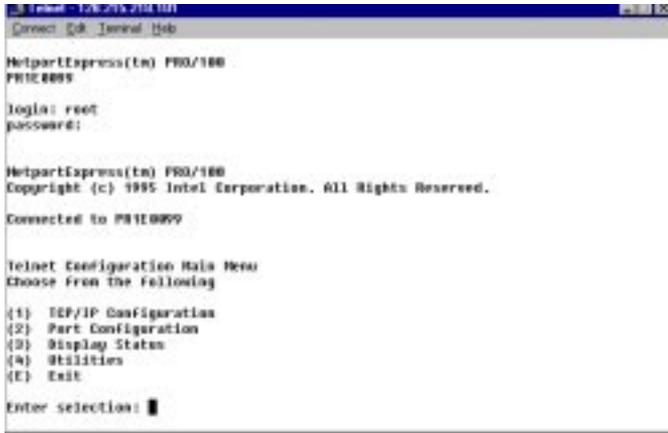


To access Web Netport Manager

- 1 Open your web browser.
- 2 Type the NetportExpress print server IP address in the Location box and press Enter. The Web Netport Manager home page will appear.

Note: To find out if the NetportExpress print server has an IP address, print a test page by pressing the “diag” button on the print server. To set an IP address, see “Setting an IP Address” on pages 15 and 20.

Using telnet



```
Connect to: intel.com
NetportExpress(tm) PRO/100
PRTE0009

login: root
password:

NetportExpress(tm) PRO/100
Copyright (c) 1995 Intel Corporation. All Rights Reserved.

Connected to PRTE0009

Telnet Configuration Main Menu
Choose From The Following

(1) TCP/IP Configuration
(2) Port Configuration
(3) Display Status
(4) Utilities
(E) Exit

Enter selection: █
```

To display the telnet main menu

- 1 From 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.
- 3 Choose the task you want to perform from the main menu.

Additional Management Support

The NetportExpress print server supports these network management tools:

- Intel Device View for Web® 1.0 (www.intel.com/network)
- Intel LANDesk® Management Suite
- DMI* (Desktop Management Interface)
- SNMP (Simple Network Management Protocol)

See NetportExpress Help for more information about these tools.

Troubleshooting the NetportExpress Print Server

The key to successfully troubleshooting printing problems is to have a systematic approach and to know where to look for help. This section lists the most likely causes for some common printing problems.

Along with this troubleshooting section, you can check these resources:

- Netport Manager Help
- Troubleshooting Help (Click the Troubleshooting icon in the Netport Manager window.)
- Web help (located on the CD-ROM)
- Intel's automated customer support pages and Intel's online customer support (see page 43).



Hardware problems

No lights on NetportExpress print server

- There is no power to unit. Check power sources.
- Cables are not securely seated in connectors. Check connections.
- You're trying to run a PRO/100 on a 100Mbps network but the hub doesn't support 100Mbps. Check the hub.
- Network cable is not connected. Check the connection.

Blinking red activity light on print server

*Number
of blinks*

Cause

1- 4, 8

Unit failure. Contact your vendor or Intel's Customer Support

5

Serial port failure. Disconnect all devices from the print server. Disconnect, then reconnect the print server power cable.

6

Parallel port failure. Disconnect all devices from the print server. Disconnect, then reconnect the print server power cable.

7

Network interface failure. Replace the network cable or attach the print server to a different network location.

What does the light by the diag button mean?

- This light, which is green when lit, is located next to the diag button on the PRO/100 device. It should be OFF for 10 Mbps systems and ON for 100 Mbps systems.

How should switches be set?

- For Token Ring PRO print servers only

| Network speed | Switch 1 | Switch 2 |
|-----------------|----------|----------|
| Autosense speed | Up | Up |
| Set for 4 Mbps | Down | Down |
| Set for 16 Mbps | Down | Up |

- For Ethernet PRO and PRO/100 print servers

Doesn't apply. Switches are reserved for future use.



Printing problems

Can't print (start here for most problems)

- Parallel port speed may be incorrect. Parallel port speed should match the printer speed. See the following table.

Parallel Port

Speed

Type of printer using that speed

| | |
|----------|--|
| Low | HP LaserJet 3* or lower, dot matrix, or inkjet printers |
| Medium | Default setting. HP LaserJet 4* or equivalent, most other printers |
| High | HP LaserJet 5si* (24 ppm) or faster printers |
| Software | Use only if no other speed works. |

To set port speed:

- In Netport Manager, click the Properties button.
 - Using telnet, access the Telnet main menu and choose Port Configuration.
 - From your web browser, enter the IP address of your NetportExpress print server and choose Properties.
- Printer is off or is offline. Make sure the printer is operational. Print a self-test page to make sure.
 - NetportExpress print server may not be configured correctly. Check Status in Netport Manager.

- ❑ Print server is offline or is not functioning. Check that the lights on the NetportExpress print server are on. Press the diag button on the device to print a test page to check its configuration.
- ❑ Printer cable is too long or may be bad. Check that the printer cable is six feet or less in length. If you suspect something is wrong with the cable, replace it with a known good cable.

Can't print in AppleTalk

- ❑ The network may be set up incorrectly. Check the control panel to make sure the network is LocalTalk*, EtherTalk*, or TokenTalk*, as appropriate.

If the network is running EtherTalk, make sure it is EtherTalk Phase 2. To print using Phase 1, connect the Macintosh to the network with a router, such as Apple Internet Router* or Liaison Internet Router*, that routes Phase 1 to Phase 2.

- ❑ NetportExpress print server may not be configured for AppleTalk printing. Check the print server configuration.
- ❑ The selected printer may not match the Printer Type specified in Netport Manager. Check that the name is exactly the same, including upper and lower case and spaces.

Can't print in LAN Manager or LAN Server

- ❑ Queues may have been created on a system that isn't running LAN Manager or LAN Server. Check queue locations.
- ❑ Queues may have been mapped to the wrong port. Make sure the queues are mapped to LPT1, LPT2, or LPT3 on the system running LAN Manager or LAN Server.
- ❑ Queues may be set up wrong. Make sure queues are set up so that *one* logical LPT port is associated with *one* physical LPT port. Queues must not all map to the logical device LPT1.

Can't print in UNIX

- ❑ You may have typed the tar command used to extract the *proinstall* files incorrectly. Check the manual.
- ❑ Your print setting may be incorrect. Most applications use the PASSTHRU setting to print. This command is used for PCL and PostScript printer languages. Use TEXT only if you are printing a UNIX text file.

- ❑ The network may not be connected to the print server. Use ping from a UNIX workstation to check IP connectivity to the Netport print server's TCP/IP task.
- ❑ If using *proprint* on an SCO, Solaris, UnixWare, or HP-UX host, the complete path may need to be defined to *proprint*.
Make sure the *lp_script1* file specifies the correct and complete path to the *proprint* utility. Also make sure the job number is specified. The next-to-last line of *lp_script1* must read: (shell commands ...) |
usr/intl/hupx/proprint `basename \$0` job=1 exit \$?
- ❑ If using *proprint*, program may not be working. Check it by printing a job from the command line without using the spooling system.
- ❑ If using *lpd* without *proprint* and printing binary or PostScript files, you may be using the wrong queue name. Make sure the queue name is LPT1_PASSTHRU for ASCII files.

Queues fill up but nothing prints

- ❑ Another print server may be servicing the queue. Select a different queue or change the queue that the other print server is using.
- ❑ The printer may be off line or set for the wrong type of port (parallel or serial). Check the printer and ports.
- ❑ The network may not be connected. Check the network connection. Can you print a test page? If you can, check the network connection between the workstation and the print server. Also check the connection at the hub or switch.
- ❑ If the job appears to print but nothing comes out of the printer, the job may be going to a different printer.
- ❑ The driver parameters may be incorrect. You may be trying to send a PostScript job to a non-PostScript printer or sending a non-PostScript job to a PostScript printer.

Print job doesn't print correctly

- ❑ May be using wrong printer driver. Make sure the printer driver is the right one for the printer.
- ❑ May need to toggle the printer's auto sensing of PostScript print jobs.
- ❑ A Postscript printer may be trying to print a non-PostScript job. Check the job and the printer.
- ❑ If you are copying a graphics (binary) file to LPT1, you may have the wrong parameter setting. Use the /b parameter:

Type: **copy /b filename lpt1**

where

filename is the name of the file you want to print.

- Novell NetWare only. The banner page parameter may be set wrong. Include the NT (no tabs) parameter in the CAPTURE command.

Characters don't print correctly

- AppleTalk only. If the printer doesn't print the correct fonts, make sure the font group specified in Netport Manager is the correct group for the printer.

Note: This applies only if your printer does not have bi-directional capability.

Serial printer prints incorrectly

- The serial port parameters may not match the parameters for your printer. In Netport Manager, open the Device Properties menu and check under serial port to find the baud rate, parity setting, stop bits, etc. Make sure these settings match the settings for your printer. (You can also check by typing your IP address in your web browser to access the print server web pages.)
- The NetportExpress print server may have lost power or have been unplugged. Check the printer to see if the form feed or activity light is on. Reset the printer to clear the unprintable data. You may also need to reset the NetportExpress print server.
- The cable may be defective. Connect the serial cable to a workstation and try to print. If the files won't print from the workstation, replace the cable.

Printer adds space between lines

- Auto Linefeed may need to be turned off. In Netport Manager, select the NetportExpress that has the problem and click Properties. At the port settings, turn off Auto Linefeed. You can also use your web browser or Telnet. *See* Managing your NetportExpress Print Server on page 30.

Can't print now, but could before

- If you change the Netport Name or Share Name of your NetportExpress print server after you have configured it, the new name won't appear in the print servers list and the printer may not recognize the print server. Remove the port configurations, then reassign print servers and queues, as desired.



Netport Manager problems

Netport Manager won't launch

- The problem may be with the workstation. Try running Netport Manager from a different workstation.
- The configuration may still be in process. If you have just configured or reset the NetportExpress print server, wait a few seconds before clicking the print server's icon in the listing.

NetportExpress print server is missing or is listed incorrectly

- The NetportExpress print server may need to be reset. Unplug the power cord, then plug it back in. Wait about 30 seconds, then click the print server's icon in the print servers list. If you still don't see the print server, click the View menu and click Refresh.
- If the activity light blinks in a pattern, there may be a problem with the device. Check the pattern listing at the beginning of the Troubleshooting section. If you suspect a faulty device, try connecting the print server to a different network drop to see if it works there.
- If you have changed the Share Name or Netport Name after configuring the the NetportExpress print server, the print server may not appear in Netport Manager. Re-configure the print server with the new name(s).

Get printed message instead of print job

- If you get a message instead of a print job, you may have bi-directional communications enabled for a printer that does not support this capability. In Netport Manager, go to Properties, select the port, and uncheck the bi-directional box.

Scrolling the print server list is slow

- You may have a large number of print servers on your network. You can increase Netport Manager performance by grouping your print servers into groups

Other Problems

Can't share queues in LAN Manager

- ❑ LAN Manager only. When you try to use the NET SHARE command to share a queue that is not yet mapped to the correct printer, you'll see this DOS message:

The destination list provided does not match the destination list of the printer queue.

Use NET ADMIN to check and correct the printer/queue mappings.

- 1 From the OS/2 full screen prompt, type:
NETADMIN
- 2 Click the View menu, and then click Shared Resources.
- 3 From the Shared Resources window, select <Add Share>.
- 4 Choose the Printer option, and click OK.
- 5 From the Share a Printer Queue with the Network window, highlight the desired queue. Click OK.
- 6 View the Shared Resource information to see the queue and printer mappings. Click Done.
- 7 Assign permissions to the users and groups you want to have access to the print queue. Highlight the desired user or group that currently doesn't have access, then select Yes for "permitted access". Choose Permit to add that user or group to the Assigned Permissions list. Click OK.
- 8 Exit NETADMIN.

Forgotten password

- ❑ Perform a serial update to remove the existing password.

If your model of NetportExpress print server does not have a serial port, call Intel's customer support service.

Limited Warranty

Intel warrants to the original owner that the product delivered in this package will be free from defects in material and workmanship for three (3) year(s) following the latter of: (i) the date of purchase only if you register by returning the registration card as indicated thereon with proof of purchase; or (ii) the date of manufacture; or (iii) the registration date if by electronic means provided such registration occurs within 30 days from purchase. This warranty does not cover the product if it is damaged in the process of being installed. Intel recommends that you have the company from whom you purchased this product install the product.

THE ABOVE WARRANTY IS IN LIEU OF ANY OTHER WARRANTY, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, ANY WARRANTY OF INFRINGEMENT OF ANY OTHER PARTY'S INTELLECTUAL PROPERTY RIGHTS, OR ANY WARRANTY ARISING OUT OF ANY PROPOSAL, SPECIFICATION OR SAMPLE.

This warranty does not cover replacement of products damaged by abuse, accident, misuse, neglect, alteration, repair, disaster, improper installation or improper testing. If the product is found to be otherwise defective, Intel, at its option, will replace or repair the product at no charge except as set forth below, provided that you deliver the product along with a return material authorization (RMA) number (see below) either to the company from whom you purchased it or to Intel. If you ship the product, you must assume the risk of damage or loss in transit. You must use the original container (or the equivalent) and pay the shipping charge. Intel may replace or repair the product with either a new or reconditioned product, and the returned product becomes Intel's property. Intel warrants the repaired or replaced product to be free from defects in material and workmanship for a period of the greater of: (i) ninety (90) days from the return shipping date; or (ii) the period of time remaining on the original three (3) year warranty.

This warranty gives you specific legal rights and you may have other rights which vary from state to state. All parts or components contained in this product are covered by Intel's limited warranty for this product. The product may contain fully tested, recycled parts, warranted as if new.

Returning a Defective Product (RMA)

Before returning any product, contact an Intel Customer Support Group and obtain an RMA number by calling: North America only: (916) 377-7000
Other locations: Return the product to the place of purchase.

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.

Limitation of Liability and Remedies

INTEL SHALL HAVE NO LIABILITY FOR ANY INDIRECT OR SPECULATIVE DAMAGES (INCLUDING, WITHOUT LIMITING THE FOREGOING, CONSEQUENTIAL, INCIDENTAL AND SPECIAL DAMAGES) ARISING FROM THE USE OF OR INABILITY TO USE THIS PRODUCT, WHETHER ARISING OUT OF CONTRACT, NEGLIGENCE, TORT, OR UNDER ANY WARRANTY, OR FOR INFRINGEMENT OF ANY OTHER PARTY'S INTELLECTUAL PROPERTY RIGHTS, IRRESPECTIVE OF WHETHER INTEL HAS ADVANCE NOTICE OF THE POSSIBILITY OF ANY SUCH DAMAGES, INCLUDING, BUT NOT LIMITED TO LOSS OF USE, BUSINESS INTERRUPTIONS, AND LOSS OF PROFITS. NOTWITHSTANDING THE FOREGOING, INTEL'S TOTAL LIABILITY FOR ALL CLAIMS UNDER THIS AGREEMENT SHALL NOT EXCEED THE PRICE PAID FOR THE PRODUCT. THESE LIMITATIONS ON POTENTIAL LIABILITIES WERE AN ESSENTIAL ELEMENT IN SETTING THE PRODUCT PRICE. INTEL NEITHER ASSUMES NOR AUTHORIZES ANYONE TO ASSUME FOR IT ANY OTHER LIABILITIES.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you

5/28/97(kc)

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 radio 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.

CE Compliance Statement

This NetportExpress print server complies with the EU Directive, 89/336/EEC, using the EMC standards EN55022 (Class A) and EN50082-1. 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.

VCCI Class 1 (Japan)

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

Intel Corporation, Mailstop JF3-406, 5200 NE Elam Young Parkway
Hillsboro, Oregon 97124-6497 USA

Intel Automated Customer Support

You can reach Intel's automated support services 24 hours a day, every day at no charge. The services contain the most up-to-date information about Intel products. You can access installation instructions, troubleshooting information, and general product information.

| | Intel Help Files | World Wide Web & Internet FTP | Intel Bulletin Board Service (BBS) |
|---------------------|--|---|--|
| | View the online README files for detailed information. | Access Intel's World Wide Web home page or download information using anonymous FTP. | Use Intel's BBS. Dial in by modem at 8-N-1, and up to 14.4 Kbps. |
| Troubleshooting | ✓ | ✓ | |
| Software updates | | ✓ | ✓ |
| Installation notes | ✓ | ✓ | |
| Product information | | ✓ | |
| How to access: | | WWW <i>General:</i> www.intel.com/network/print <i>News:</i> news://cs.intel.com <i>CS:</i> http://support.intel.com FTP <i>Host:</i> download.intel.com <i>Directory:</i> /support | US and Canada 1-503-264-7999 Europe +44-1793-432955 Worldwide +1-503-264-7999 |

Intel Customer Support Technicians

Free support: You can speak with our technical support professionals free of charge.

Worldwide access: Intel has technical support centers worldwide. Many of the centers are staffed by technicians who speak the local languages. For a list of all Intel support centers, the telephone numbers, and the times they are open, download document 9089 from one of the automated services.

If you don't have access to automated services, contact your local dealer or distributor. Or call +1-916-377-7000 from 07:00 to 17:00 Monday through Friday, U.S. Pacific Time.

Index

Symbols

- 10 Megabits per second (Mbps) network speed 2
- 100 Megabits per second (Mbps) network speed 2

A

- Activity light 2, 33
- Advanced configuration parameters 30
- AIX 27
 - printing with AIX 3.2.5 29
 - printing with AIX 4.1 28
- AppleTalk
 - troubleshooting printing problems 35, 37
- AppleTalk Phase 1 35
- AppleTalk printing problems 37
- Autosensing data rate speeds 3

B

- Bindery services
 - configuring remote printer mode 11
 - print server mode 10
- BOOTP (Boot Protocol) 20
- BSD-based systems
 - printing with lpr/lpd 24

C

- Cables
 - Category 3 or 5 2, 3
 - parallel 2, 3
 - printing problems 35
- Cabling
 - power cable 2
- Category 3 or 5 cables 3
- CD-ROM
 - NetportExpress print server software 6
- CE compliance 41
- Chooser 18
- Configuration
 - changing with Netport Manager 30
- Configuration parameters, advanced 30
- Configuring
 - for multiple protocols 6
- Connectors
 - DB-9 3
 - internal print server cards 4
 - RJ-45 3
 - RJ-45 and BNC, for PRO internal Ethernet cards 4

- Context
 - for Novell NDS print server mode 8
- Customer support 42

D

- Data rate speeds
 - token ring 3
- DB-9 connector 3, 4
- Default gateway 20
- Device ID 2, 3, 4
- DHCP (Dynamic Host Configuration Protocol) 20
- DMI (Desktop Management Interface) 32
- Domain 13, 14

F

- Factory defaults
 - resetting to 30
- FCC compliance 41
- Firmware
 - upgrading using TFTP 26
- Flash memory
 - upgrading using TFTP 26
- Flash updates 30
- Frame types
 - Novell NetWare 2, 3
- FTP printing 19

G

- Green light 34

H

- Hardware installation 2
 - instructions for internal card 5
- Help
 - customer support 42
- HP-UX 19
 - printing with lpr/lpd 23
 - using proprint 21
- HTML
 - accessing Web Netport Manager 31

I

- Intel Device View for Web 32
- Internal print server cards
 - hardware installation 4
 - inserting in printers 4
- IP address
 - setting in UNIX 20
 - setting in Windows NT 15
 - setting with Netport Manager 31

L

- LAN Manager/LAN Server
 - troubleshooting printing problems 35
- LAN Manager/LAN Server printing 16

- LANDesk Management Suite 32
- LaserJet printers
 - installing internal print server cards 5
- LaserWriter printers 18
- Lights
 - activity light 2
 - blinking red activity light 33
 - light by diag button 34
- LIP (Large Internet Packet) 8, 10
- LocalTalk 18
- Log files
 - for proprint 21
- LPR printing
 - for Windows NT 15
- lpr/lpd
 - supported systems 21
- lpr/lpd printing for UNIX 19, 21

M

- MAC (Media Access Control)
 - address. *See* Network address
- Macintosh printing 18
- Memory
 - upgrading Flash memory using TFTP 26
- Microsoft network printing 12
- MIO (modular input/output)
 - printer slots for internal print server cards 5
- Multiple protocols
 - configuring 6

N

- NDS
 - configuring for print server mode 8
- Netport Manager
 - installing the software 6
 - using to manage printing 30
- Netport Manager main window 7
- NetportExpress Port Monitor 12
- NetportExpress print server
 - installing the software 6
- Network address 2, 3, 20, 27
- Network management
 - additional tools 32
- Network speed
 - 10/100 Mbps 2
- Novell NetWare
 - Bindery services remote printer mode 11
 - configuring for bindery services 10
 - configuring NDS remote printer mode 9
 - frame types 2, 3

- NW Admin and PCONSOLE 8, 10
 - user licenses 8
- Novell NetWare NDS
 - configuring for print server mode 8

O

- OS/2
 - printing with LAN Manager 16
 - printing with LAN Server 17

P

- Parallel port speed
 - changing with Netport Manager 30
- Parameters, advanced 30
- PASSTHRU 22, 24
- Password
 - changing 31
 - forgotten 39
- PCONSOLE
 - not needed for Netport Manager configuration 8, 10
- Phase 1, AppleTalk 35
- Phase 1 printing with LocalTalk 18
- Phase 2, EtherTalk 35
- Port Monitor 12
- Port speed 30
 - setting 34
- Power supply
 - correct one to use 2, 3
- Print server
 - returning 40
- Print server mode
 - Novell NDS 8
 - Novell NetWare bindery services 10
- Print servers
 - External PRO print server hardware installation 3
- Printer management tools 30
- Printing
 - cable problem 35
 - can't print 34
 - common problems 34
 - sharing a printer in LAN Manager or LAN Server 17
 - test page 2, 3
 - using CAPTURE command in Novell 8
 - using proprint 21
 - with LAN Manager or LAN Server 16
- PRO print server, external
 - hardware installation 3
- Problems with printing 34
- Product, returning 40
- proprint 19
 - log files 21
 - supported systems 21

Protocols, configuring multiple 6
PSEVER.NLM
in Novell NDS remote printer mode 9

Q

Queues
assigning for Novell NDS print server mode 8

R

RARP (Reverse Address Resolution Protocol) 20
Remote printer mode 11
configuring for bindery services 11
Novell NDS 9
Resetting to factory defaults 30
Returning a defective product 40
RJ-45 4
RJ-45 connector 2, 3
for internal PRO print server card 4

S

SCO 19
using proprint 21
Serial printing problems 37
Setting an IP address
in Netport Manager 31
Setting an IP address in UNIX
using ARP 20
Setting an IP address in Windows NT
using ARP 15
SMIT (System Management Interface Tool) 27
SNMP (Simple Network Management Protocol) 32
Software installation
installing Netport Manager 6
Solaris 19
printing with lpr/lpd 22
using proprint 21
Status
viewing with Netport Manager 30
Subnet mask 20
SunOS 19
printing with lpr/lpd 24
using proprint 21
Support, customer 42
Switches 5
settings 34
Switches, token ring
default position 3, 5
System V, Release 4
printing with lpr/lpd 22

T

Telnet 32
setting configuration parameters 20
Test page
printing 2, 3
TEXT 24
TFTP
upgrading flash memory with 26
Token ring
data rate speeds 3
default switch settings 5
Troubleshooting 33

U

UnixWare 19
printing with lpr/lpd 22
using proprint 21
User licenses (Novell) 8

W

Warranty, limited 40
Web management tools 32
Web Netport Manager 31
defined 7
Windows 95
installing the software 6
Windows 95 direct printing 13
Windows 95 shared printing 14
Windows for Workgroups
direct printing 15
installing the software 6
Windows for Workgroups printing 14
Windows NT
installing the software 6
Windows NT 3.51 direct printing 14
Windows NT 3.51 shared printing 14
Windows NT 4.0 direct printing 13

Z

Zones 18

Hardware Installation

Software Installation

Novell NetWare NDS Configuration

Novell NetWare Bindery Configuration

Microsoft Network Printing

LAN Manager/LAN Server Configuration

AppleTalk Configuration

UNIX Configuration

AIX Configuration

Managing the NetportExpress Print Server

Troubleshooting

Limited Warranty/Compliance Statements

Customer Support

Index

