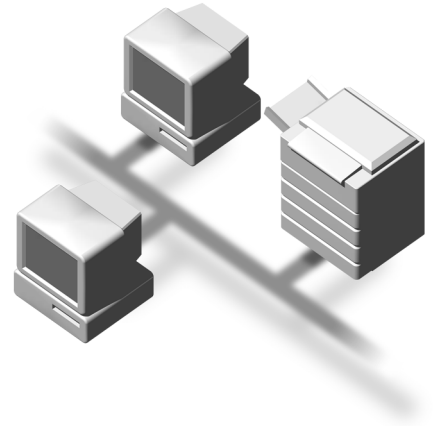




Network Interface Board Type306 (Option)



Operating Instructions



Read this manual carefully before you use this product and keep it handy for future reference.

For safety, please follow the instructions in this manual.

Introduction

To get maximum versatility from this machine all operators should carefully read and follow the instructions in this manual. Please keep this manual in a handy place near the machine.

Please read the Safety Information in the "Printer Reference" before using this machine. It contains important information related to USER SAFETY and PREVENTING EQUIPMENT PROBLEMS.

Important

Parts of this manual are subject to change without prior notice. In no event will the company be liable for direct, indirect, special, incidental, or consequential damages as a result of handling or operating the machine.

Note

The names of the applications do not appear in the following pages. Confirm which applications you will be using before reading this manual.

Descriptions in this manual	Application
PRINTER MANAGER FOR ADMINISTRATOR	Aficio Manager for Admin
	Net Vision for Admin
	infotec NetPrint Manager for Admin
PRINTER MANAGER FOR CLIENT	Aficio Manager for Client
	Net Vision for Client
	infotec NetPrint Manager for Client

Software Version Conventions Used in this Manual

- NetWare 3.x means NetWare 3.11, 3.12 and 3.2.
- NetWare 4.x means NetWare 4.1, 4.11 and IntranetWare.

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Note

The proper names of the Windows operating systems are as follows:

- Microsoft® Windows® 95 operating system
- Microsoft® Windows® 98 operating system
- Microsoft® Windows® 2000 Professional
- Microsoft® Windows® 2000 Server
- Microsoft® Windows NT® Server operating system Version 4.0
- Microsoft® Windows NT® Workstation operating system Version 4.0

Manuals for This Printer

There are five manuals that separately describe the procedures for the installation of a printer and for the operation and maintenance of the printer and its optional equipment.

To enhance safe and efficient operation of the printer, all users should read and follow the instructions contained in the following manuals.

❖ **Quick Installation Guide**

Describes the procedures for installing the printer.

❖ **Setup Guide**

Describes the procedures and provides necessary information about setting up the printer and its options.

❖ **Printer Reference**

Describes the procedures and provides necessary information about using the printer and its options. The manual is included as a PDF file on the CD-ROM.

❖ **RICOH-SCRIPT2 Operating Instructions**

Describes the menus and features you can set using the RICOH-SCRIPT2 printer driver. The manual is provided as a PDF file which is included on the CD-ROM labeled "Printer Drivers and Utilities".

❖ **Network Interface Board Operating Instructions**

Describes the procedures and provides necessary information about setting up and using the printer in a network environment. The manual is provided as a PDF file which is included on the CD-ROM labeled "Printer Drivers and Utilities" (this manual).

How to Read This Manual

Symbols

In this manual, the following symbols are used:

 **WARNING:**

This symbol indicates a potentially hazardous situation which, if instructions are not followed, could result in death or serious injury.

 **CAUTION:**

This symbol indicates a potentially hazardous situation which, if instructions are not followed, may result in minor or moderate injury or damage to property.

* The statements above are notes for your safety.

 **Important**

If this instruction is not followed, paper might be misfed, originals might be damaged, or data might be lost. Be sure to read this.

 **Preparation**

This symbol indicates the prior knowledge or preparations required before operating.

 **Note**

This symbol indicates precautions for operation, or actions to take after misoperation.

 **Limitation**

This symbol indicates numerical limits, functions that cannot be used together, or conditions in which a particular function cannot be used.

 **Reference**

This symbol indicates a reference.

[]

Keys that appear on the machine's panel display.

Keys and buttons that appear on the computer's display.

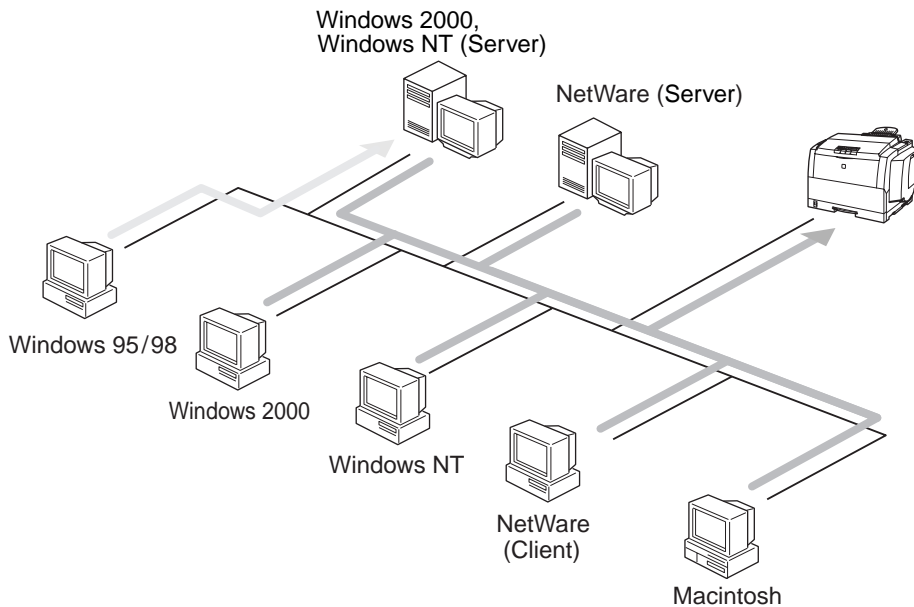
【 】

Keys built into the machine's operation panel.

Keys on the computer's keyboard.

Introduction

This manual contains detailed instructions on configuring the printer as a network printer. Read the section appropriate to your network environment for how to configure the printer correctly.



Important

- ❑ The procedures written in this manual assume that you are a network administrator. If you are not, be sure to consult your network administrator before configuration.

Reference

For more information about physically installing the Network Interface Board and cabling, see the "Setup Guide" that comes with the printer.

For more information about configuring the Network Interface Board with the operation panel, see the "Setup Guide" that comes with the printer.

Features

- Support for 100BASE-TX and 10BASE-T
- The Network Interface Board is compatible with NetWare (IPX/SPX), Windows NT (TCP/IP, NetBEUI, IPP^{*1}), Windows 2000 (TCP/IP, NetBEUI, IPP^{*1}), Windows 95/98 (TCP/IP, NetBEUI, IPP^{*1}) and Macintosh (AppleTalk) protocols. This allows you to use the printer in a network that uses different protocols and operating systems.
- A computer used as a dedicated print server is not required because the Network Interface Board can be configured as a NetWare print server.
- The Network Interface Board can connect the printer to the network without requiring its own power supply because the Network Interface Board is installed inside the printer.

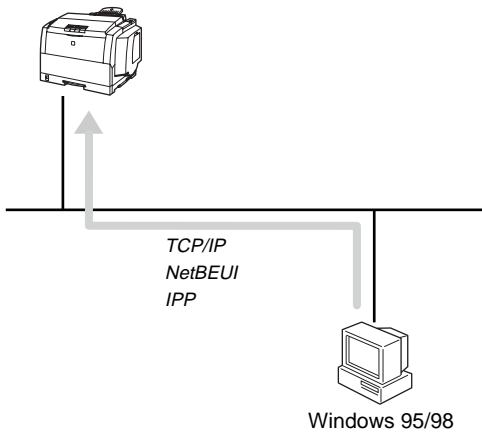
^{*1} IPP (Internet Printing Protocol) is a protocol for printing via the Internet.

Setting Up the Printer on a Network

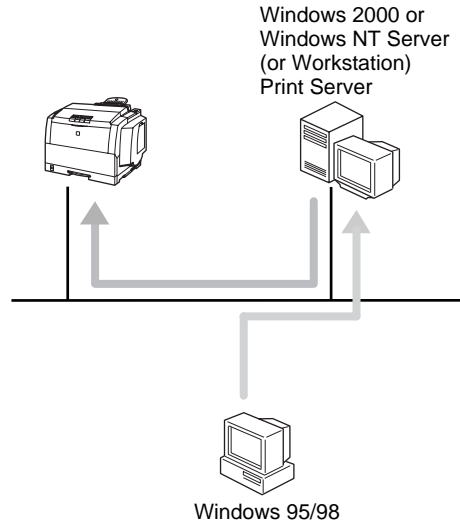
Windows 95/98

For how to set up the printer as a network printer in a Windows 95/98 environment, see P.1 “*Windows 95/98 Configuration*”. There are two methods for using the printer as a network printer.

❖ Printing Without Using a Print Server



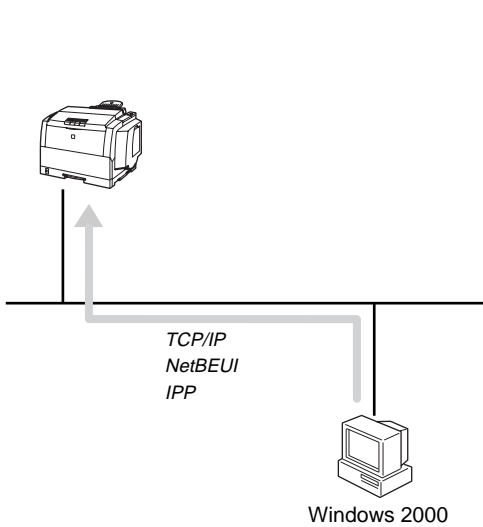
❖ Printing With a Windows 2000 or Windows NT Print Server



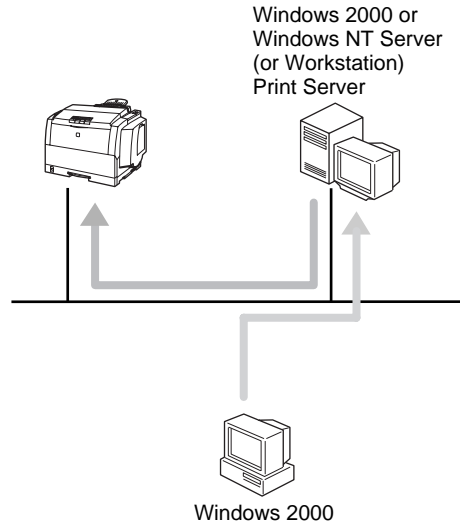
Windows 2000

For how to set up the printer as a network printer in a Windows 2000 environment, see P.15 “*Windows 2000 Configuration*”. There are two methods for using the printer as a network printer.

❖ **Printing Without Using a Print Server**



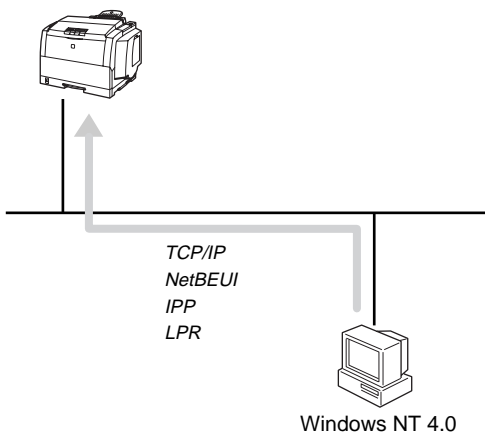
❖ **Printing With a Windows 2000 or Windows NT Print Server**



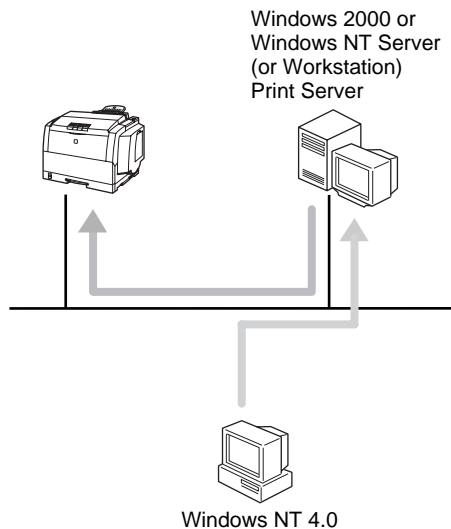
Windows NT 4.0

For how to set up the printer as a network printer in a Windows NT 4.0 environment, see P.31 *“Windows NT 4.0 Configuration”*. There are two methods for using the printer as a network printer.

❖Printing Without Using a Print Server



❖Printing With a Windows 2000 or Windows NT Print Server



NetWare

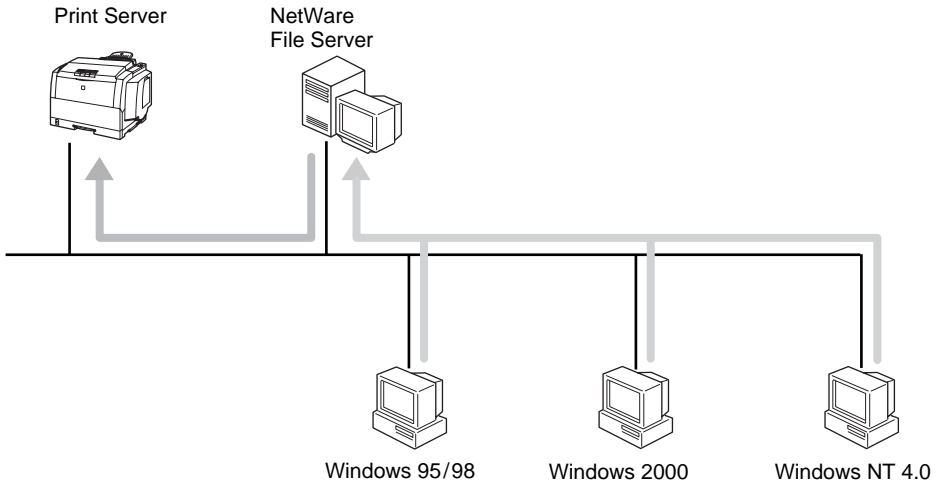
For how to set up the printer as a network printer in a NetWare environment, see P.47 *“NetWare Configuration”*. The Network Interface Board allows you to use the printer as either a print server or a remote printer.

For more information about setting up the clients, see the following pages.

- Windows 95/98 ⇒ P.66 *“Windows 95/98”*
- Windows 2000 ⇒ P.67 *“Windows 2000”*
- Windows NT 4.0 ⇒ P.68 *“Windows NT 4.0”*

Configuring the printer as a print server

A dedicated NetWare print server is not required because the printer can be configured as a print server.

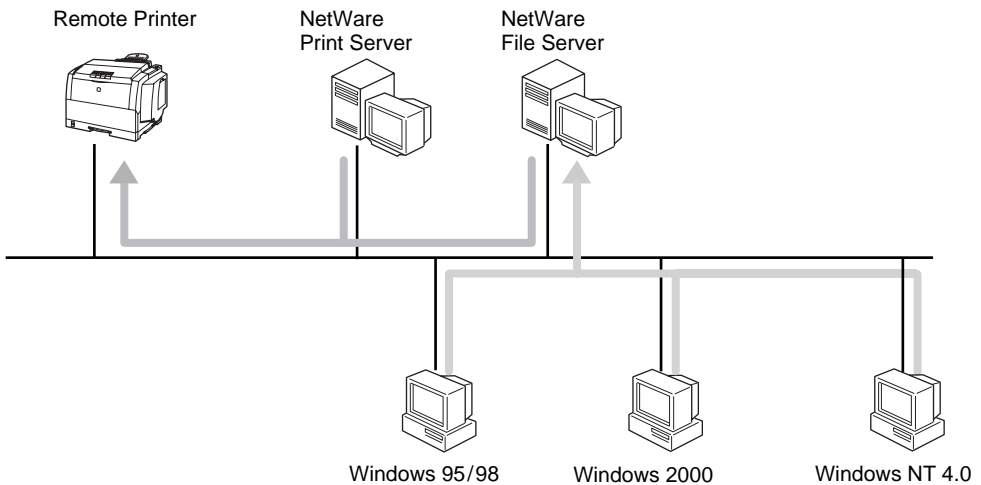


The actual procedures for configuring the printer differ depending on the version of NetWare.

- NetWare 3.x ⇒ P.52 *"Setting Up as a Print Server"*
- NetWare 4.x, 5 ⇒ P.59 *"Setting Up as a Print Server"*

Configuring the printer as a remote printer

If a dedicated NetWare print server is being used, the printer should be configured as a remote printer.



The actual procedures for configuring the printer differ depending on the version of NetWare.

- NetWare 3.x ⇒ P.55 *"Setting Up as a Remote Printer"*
- NetWare 4.x, 5 ⇒ P.63 *"Setting Up as a Remote Printer"*

Macintosh

For how to set up the printer as a network printer in a Macintosh environment, see P.69 *“Macintosh Configuration”*.

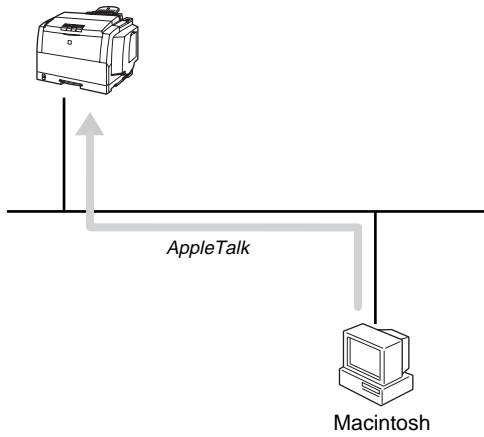


TABLE OF CONTENTS

1. Windows 95/98 Configuration

Configuring Windows 95/98	1
Printing Without Using a Print Server.....	1
Printing with a Windows 2000 or Windows NT Print Server	1
Configuring Protocols	2
Configuring TCP/IP and IPP for Printing	2
Configuring NetBEUI for Printing	3
Using PortNavi	4
Installing PortNavi	5
Setting Up the Printer Driver	7
Accessing the Port Settings Dialog Box.....	7
Using Multidirect Print	9
Installing Multidirect Print	9
Setting Up the Printer Driver	10
Changing Port Settings	12
Setting up a Client Computer	13

2. Windows 2000 Configuration

Configuring Windows 2000	15
Printing Without Using a Print Server.....	15
Printing with a Standard TCP/IP Port.....	15
Printing with a LPR Port.....	16
Printing with a Windows 2000 or Windows NT Print Server	16
Configuring the Protocols	17
Configuring TCP/IP and IPP for Printing	17
Configuring NetBEUI for Printing	18
Using PortNavi	19
Installing PortNavi	20
Setting Up the Printer Driver	22
Accessing the Port Settings Dialog Box.....	23
Using Multidirect Print	24
Installing Multidirect Print	24
Setting Up the Printer Driver	25
Changing Port Settings	27
Configuring LPR Port Printing	28
Setting up a Client Computer	29

3. Windows NT 4.0 Configuration

Configuring Windows NT 4.0	31
Printing Without Using a Print Server.....	31
Printing with a LPR Port.....	31
Printing with a Windows 2000 or Windows NT Print Server	31
Configuring the Protocols	32
Configuring TCP/IP and IPP for Printing	32
Configuring NetBEUI for Printing	33
Using PortNavi	35
Installing PortNavi	36
Setting Up the Printer Driver	38
Accessing the Port Settings Dialog Box.....	38
Using Multidirect Print	40
Installing Multidirect Print	40
Setting Up the Printer Driver	41
Changing Port Settings	43
Configuring LPR Port Printing	44
Setting up a Client Computer	45

4. NetWare Configuration

Installing the NIB Setup Tool	47
Installing PRINTER MANAGER FOR ADMINISTRATOR.....	47
Running the NIB Setup Tool	48
Quick Setup Using the NIB Setup Tool Wizard	49
NetWare 3.x - Advanced Settings	52
Setting Up as a Print Server.....	52
Setting Up as a Remote Printer	55
NetWare 4.x, 5 - Advanced Settings	58
Setting Up as a Print Server.....	59
Setting Up as a Remote Printer	63
Setting Up a Client Computer	66
Windows 95/98.....	66
Windows 2000.....	67
Windows NT 4.0.....	68

5. Macintosh Configuration

Configuring Macintosh	69
Changing to EtherTalk	69
Configuring the Printer	70
Changing the Printer Name.....	70
Changing the Zone.....	70

6. Appendix

Configuring the Network Interface Board with a Web Browser	73
Going to the Top Page	73
Assigning IP Address with ARP+PING.....	76
Remote Maintenance by telnet.....	77
Using telnet	77
Commands List	78
SNMP	86
Understanding the Displayed Information	87
Print Job Information	87
Print Log Information	88
Network Statistical Information.....	89
Configuring the Network Interface Board	90
Message List.....	93
System Log Information	93
Precautions	99
Connecting a Dial Up Router to a Network	99
PostScript Printing from Windows	100
NetWare Printing.....	100
When Using DHCP	101
When Using the NIB Setup Tool	102
When Using IPP with Multidirect Print.....	102
Specifications	104
INDEX.....	105

1. Windows 95/98 Configuration

Configuring Windows 95/98

Printing Without Using a Print Server

The following procedure describes how to configure Windows 95/98 to use the printer on a network without a Windows 2000, Windows NT Server, Windows NT Workstation, or NetWare based print server.

 indicates topics explained in this document

1. Decide on the protocol to use

Consult your network administrator about which of the three protocols are appropriate.

TCP/IP

IPP

NetBEUI

2. Configure the chosen protocol



"Configuring TCP/IP and IPP for Printing"



"Configuring NetBEUI for Printing"

3. Select the appropriate software

If using TCP/IP ...

PortNavi

If using IPP or NetBEUI ...

Multidirect Print

4. Install the software and set the printer driver port



"Using PortNavi"



"Using Multidirect Print"

Printing with a Windows 2000 or Windows NT Print Server

See P.13 "Setting up a Client Computer" for how to configure Windows 95/98 with a Windows 2000 or Windows NT print server.

Configuring Protocols

1

Configuring TCP/IP and IPP for Printing

Follow these instructions to configure the Network Interface Board and Windows 95/98 to use the TCP/IP protocol and IPP.

Configuring the printer

Configure the printer to use the TCP/IP protocol.

- Confirm that the TCP/IP protocol is set to be active. (The factory default is active.)
- Assign an IP address and make other settings required for using the TCP/IP protocol.

Reference

For more information about how to make the above settings, see the "Setup Guide" that comes with the printer.

If DHCP is used to assign IP addresses, see P.101 "When Using DHCP".

Note

- After setting the IP address, use the ping command to confirm that it has been set correctly.

① Click **[Start]**, point to **[Programs]**, and then click **[MS-DOS Prompt]**.

② Type the following. (Example IP address is 192.168.15.16)

```
C:> ping 192.168.15.16
```

If the address has been configured correctly, the following message appears.

```
Reply from 192.168.15.16 : bytes=32 time<10ms TTL=32
```

If the address has been configured incorrectly, the following message appears.

```
Request timed out.
```

Configuring a Windows 95/98 computer

Follow these steps to configure a Windows 95/98 computer to use the TCP/IP protocol.

- 1 Open **[Control Panel]** and double-click the **[Network]** icon. Confirm that "TCP/IP" is listed in the **[The following network components are installed:]** box on the **[Configuration]** tab.

Note

- If the TCP/IP protocol is not installed, click **[Add]** on the **[Configuration]** tab and install it. For more information about installing the TCP/IP protocol, see Windows 95/98 Help.

- 2 Configure the TCP/IP protocol with the appropriate IP address, subnet mask and other settings.

Confirm with the network administrator that the settings are correct.

Configuring NetBEUI for Printing

Follow these instructions to configure the Network Interface Board and Windows 95/98 to use the NetBEUI protocol.

Configuring the printer

Configure the printer to use the NetBEUI protocol.

- Confirm that the NetBEUI protocol is set to be active. (The factory default is active.)

Reference

For more information about how to make the above settings, see the "Setup Guide" that comes with the printer.

Configuring a Windows 95/98 computer

Install the NetBEUI protocol on the Windows 95/98 computer and set it as the default protocol.

- 1 Open [Control Panel] and double-click the [Network] icon. Confirm that "NetBEUI" is listed in the [The following network components are installed:] box on the [Configuration] tab.

Note

- If the NetBEUI protocol is not installed, click [Add] on the [Configuration] tab and install it. For more information about installing the NetBEUI protocol, see Windows 95/98 Help.
- If "NetBEUI ->Dial-Up Adaptor" is listed in the [The following network components are installed:] box, select it and click [Remove] to remove the binding.

- 2 Set the NetBEUI protocol as the default protocol. Click the [Configuration] tab, select "NetBEUI" in the [The following network components are installed:] box, and click [Properties].

- 3 Click the [Advanced] tab, select [Set this protocol to be the default protocol], and click [OK].

- 4 Click [OK] to close the [Network] dialog box.

- 5 When the message to restart appears, click [Yes].

Using PortNavi

1

PortNavi is a utility that helps you to use network printers effectively. It is useful in environments where two or more network printers are used. It is recommended that you install PortNavi to use Parallel Printing and Recovery Printing. For more information about PortNavi, see PortNavi Help.

❖ PortNavi features

- Send a print job directly to the network printers without using a print server.
- Notification when a printing error occurs.
- Print documents using other printers in the printer group when the specified printer is busy (Recovery Printing).

🚨 Important

- The following must be the same for the specified printer and the printers selected for Recovery Printing.
 - Printer models
 - Installed options (e.g. Paper Tray)
 - Size and orientation of paper in each paper tray
 - Total memory
 - Installed fonts (including the downloaded fonts)
- Equally divide the number of copies to be printed among the selected printers in the printer group (Parallel Printing).

🚨 Important

- The following must be the same for the specified printer and the printers selected for Parallel Printing.
 - Printer models
 - Installed options (e.g. Paper Tray)
 - Size and orientation of paper in each paper tray
 - Total memory
 - Installed fonts (including the downloaded fonts)

💡 Limitation

- To use PortNavi you must install PRINTER MANAGER FOR CLIENT and use the TCP/IP protocol. For the name of the PRINTER MANAGER FOR CLIENT you use, see the inside the front cover of this manual.
- For more information about installing PRINTER MANAGER FOR CLIENT, see the "Setup Guide" that comes with the printer.

📝 Note

- If you use the Multidirect Print port for printing, the port is switched automatically to the PortNavi port.
- Be sure to close all applications before beginning the installation process. Installing PortNavi may require the computer to be restarted.

Installing PortNavi

Follow the procedure below to install PortNavi.

- 1** Configure the IP parameters on the Network Interface Board using the operation panel.

 **Reference**

For more information about setting IP parameters, see “Configuring the printer for the Network with the Operation Panel” in the “Setup Guide” that comes with the printer.

- 2** Insert the CD-ROM into the CD-ROM drive.

 **Note**

- If the installer starts automatically, you can use it to install PortNavi. Follow the instructions on the screen.

- 3** Open [Control Panel], and double-click the [Add/Remove Programs] icon.

- 4** On the [Install/Uninstall] tab, click [Install].

- 5** Click [Next >].

- 6** Type the name of the CD-ROM drive in the [Command line for installation program] box, followed by “:\NETWORK\PORTNAVI\DISK1\SETUP.EXE” (do not include the quotation marks), and then click [Finish].

 **Note**

- An example would be “D:\NETWORK\PORTNAVI\DISK1\SETUP.EXE” when the drive letter is “D”.

- 7** From the [Choose Setup Language] list, select the language you want to use, and then click [OK].

- 8** After the [Welcome] dialog box appears, click [Next >].

Follow the instructions on the screen.

After installation is complete, configure the printer port with PortNavi. ⇒ P.7
“Setting Up the Printer Driver”

 **Note**

- If the dialog box asking if you want to restart the computer appears, select [Yes, I want to restart my computer now.].

Deleting the port

The following procedure allows you to delete the printer port. If you want to delete the port which is currently used in Windows, switch the port to another such as "FILE", then delete it. For more information about PortNavi, see PortNavi Help.

- 1** From the [Printers] window, click the icon of the printer which uses PortNavi to print. On the [File] menu, click [Properties].
- 2** Click the [Details] tab and confirm that the PortNavi port is shown in the [Print to the following port] box.
Remember the port name because this port should be deleted later.
- 3** From the [Print to the following port] box, select [FILE].
- 4** Click [Apply].
The port which is currently in use is changed.
- 5** Click [Delete Port].
- 6** Click the PortNavi port name as confirmed in step **2**, then click [OK].
The port is deleted.
- 7** Click [OK] to close the printer properties.

Uninstalling PortNavi

Preparation

Before uninstalling PortNavi, make sure that:

- The PortNavi settings dialog box is closed.
- No printer is using the PortNavi port as a printer port.

- 1** Open [Control Panel], and double-click the [Add/Remove Programs] icon.
- 2** On the [Install/Uninstall] tab, click [PortNavi], and click [Add/Remove].
- 3** After a confirmation message appears, click [Yes].
UninstallShield removes all of the components of PortNavi.
- 4** After a confirmation message, click [Yes].
- 5** Confirm the [Remove Shared Files?] dialog box.
- 6** When the uninstallation is complete, click [OK].

Setting Up the Printer Driver

The following procedure allows you to configure the printer port to use PortNavi.

Preparation

The target printer must be turned on before starting the installation process.

- 1** Install the printer driver of the printer you want to use.
- 2** From the [Printers] window, click the icon of the printer. On the [File] menu, click [Properties].
- 3** Click the [Details] tab and click [Add Port].
- 4** Click [Other], click [PortNavi] from the list and then click [OK].
The [Select Printer] dialog box appears .
The displayed items are as follows:
Model Name: The model name of the printer.
Name: The name of the Network Interface Board.
Comment: Additional information about the Network Interface Board.
Address: The IP address of the printer.
- 5** Click the model name of the printer, and then click [OK].

Note

- If you want to select any printer which is not shown here, click [IP Address] and input the IP address of the printer.

- 6** Confirm that the PortNavi port name is shown in the [Print to the following port] box, and click [OK].

The PortNavi port name is shown as "IP address@model name".

The configuration is now complete.

When printing, select the configured printer here and print as usual. Printing will be done automatically by PortNavi.

Accessing the Port Settings Dialog Box

This section describes how to access the port settings dialog box to configure for Notice, Parallel Printing and Recovery Printing.

Reference

For more information about these settings, see PortNavi Help.

- 1** Click [Start] on the taskbar, point to [Settings], and click [Printers].

2 Click the icon of the printer you want to use. On the [File] menu, click [Properties].

3 Click the [Details] tab and click [Port Settings].

The PortNavi settings dialog box appears.

1

Using Multidirect Print

Multidirect Print allows you to print to network printers with the NetBEUI protocol and IPP.

1

Installing Multidirect Print

Follow the procedure below to install Multidirect Print. This section assumes that the appropriate printer driver has already been installed on the computer. For more information about how to install the printer driver, see the "Setup Guide" that comes with the printer.

Preparation

Be sure to close all applications before beginning the installation process. Installing Multidirect Print may require the computer to be restarted.

1 Close all the applications that are currently running.

2 Insert the CD-ROM into the CD-ROM drive.

Note

- If the installer starts automatically, you can use it to install Multidirect Print. Follow the instructions on the screen.

3 Open [Control Panel], and double-click the [Add/Remove Programs] icon.

4 On the [Install/Uninstall] tab, click [Install].

5 Click [Next >].

6 Type the name of the CD-ROM drive in the [Command line for installation program] box, followed by ":\NETWORK\MDP\DISK1\SETUP.EXE" (do not include the quotation marks), and then click [Finish].

Note

- An example would be "D:\NETWORK\MDP\DISK1\SETUP.EXE" when the drive letter is "D".

7 From the [Choose Setup Language] list, select the language you use, and then click [OK].

8 After the [Welcome] dialog box appears, click [Next >].

Follow the instructions on the screen.

After installation is complete, configure the printer port with Multidirect Print. ⇒ P.10 "Setting Up the Printer Driver"

Note

- If the dialog box asking if you want to restart the computer appears, select [Yes, I want to restart my computer now.].

Uninstalling Multidirect Print

- 1** Open [Control Panel], and double-click the [Add/Remove Programs] icon.
- 2** On the [Install/Uninstall] tab, click [Multidirect Print], and click [Add/Remove].
- 3** After a confirmation message appears, click [Yes].
UninstallShield removes all of the components of Multidirect Print.
- 4** When the uninstallation is complete, restart the computer.

Setting Up the Printer Driver

Multidirect Print cannot be used until the printer driver is installed and the correct port is selected.

Preparation

The target printer must be turned on before starting the installation process.

1 Install the printer drivers.

If the printer drivers have already been installed, you can proceed to the next step.

Reference

For more information about installing the printer drivers, see the "Setup Guide" that comes with the printer.

Note

- Any port can be selected during the installation, however, LPT1 is recommended.

2 From the [Printers] window, click the icon of the printer. On the [File] menu, click [Properties].

3 Click the [Details] tab, and then click [Add Port].

4 In the [Add Port] box, click [Other], click [Multidirect Print], and then click [OK].

The [Select Printer] dialog box appears, and the printers which can be printed to by TCP/IP are displayed.

Limitation

- If PRINTER MANAGER FOR CLIENT is not installed on the computer, printers which can be printed to by TCP/IP are not displayed. For more information about how to install the program, see the "Setup Guide" that comes with the printer.

5 Select the printer.

TCP/IP

- 1 Click the printer you want to use, and then click **[OK]**.

 **Note**

- Printers that respond to an IP broadcast from the computer will be displayed. To print to a printer not listed here, click **[Specify Address]** and then type the IP address or host name.
- You cannot add an address partially similar to that already used. For example, when "192.168.0.2" is already used, "192.168.0.2xx" cannot be used. Similarly, when "192.168.0.20" is already used, "192.168.0.2" cannot be used.

NetBEUI

- 1 Click **[NetBEUI]**.

A list of printers that can be printed to by the NetBEUI protocol appears.

- 2 Click the printer you want to use, and then click **[OK]**.

 **Note**

- Printers that respond to an broadcast from the computer will be displayed. To print to a printer not listed here, click **[Specify Address]** and then type the NetBEUI address. Confirm the NetBEUI address on the configuration page. For more information about the printing of configuration page, see the "Printer Reference" that comes with the printer.
- You cannot print to printers beyond routers.

IPP

- 1 Click **[IPP]**.

The IPP setting dialog box appears.

- 2 In **[Printer URL]**, type "http://(printer's IP address)/printer" as the IP address of the printer.

(Example IP address is 192.168.15.16)

http://192.168.15.16/printer

- 3 As necessary, type the names to distinguish the printer in **[IPP Port Name]**. Type a name differing from those of any existing port names.

If you omit this, the address typed in **[Printer URL]** will be set as the IPP port name.

- 4 If using a proxy server and IPP user name, click **[Detailed Settings]** and configure the necessary settings.

 **Note**

- For more information about these settings, see Multidirect Print Help.

6 Click **[OK]**.

7 Confirm that the specified printing port is displayed in the **[Print to the following Port]** box, and click **[OK]**.

This completes the settings.

To print, select the printer specified here, and print in the usual manner. Multidirect Print will now direct print data to the printer automatically.

Changing Port Settings

Follow these steps to change Multidirect Print settings, such as the proxy server settings or IPP URL.

 **Note**

There are no settings for the NetBEUI protocol.

1 From the **[Printers]** window, click the icon of the printer. On the **[File]** menu, click **[Properties]**.

2 Click the **[Details]** tab, and then click **[Port Settings]**.

The **[Port Settings]** dialog box appears.

- For the TCP/IP protocol, you can configure Timeout Settings.
- For IPP, you can configure User Settings, Proxy Settings and Timeout Settings.

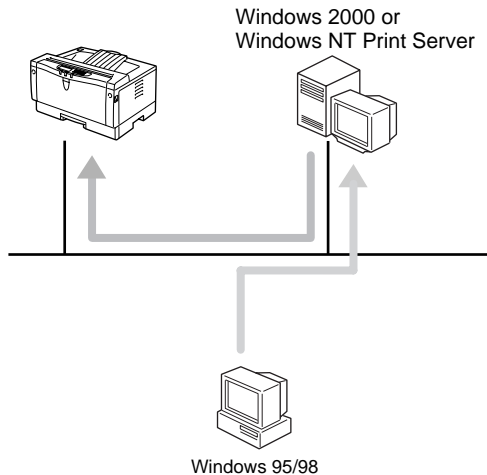
 **Note**

For more information about these settings, see Multidirect Print Help.

Setting up a Client Computer

This section describes the procedures for setting up a client on a network that uses Windows 2000, Windows NT Server or Windows NT Workstation as a print server.

To print from Windows 95/98, you must install the printer driver and change the printer port to the print server.



Note

- This section assumes that the client has already been configured to communicate with a Windows 2000 or Windows NT print server. Do not begin the following procedure until the client has been set up and configured correctly.

1 Install the printer driver as a local printer.

Reference

For more information about installing the printer driver, see the "Setup Guide" that comes with the printer.

Note

- Any port can be selected during the installation, however, LPT1 is recommended.

2 Click [Start], point to [Settings], and then click [Printers].

3 Click the icon of the printer you want to use. On the [File] menu, click [Properties].

4 Click the [Details] tab, and click [Add Port].

5 Click [Network], and click [Browse].

6 On the network tree, double-click the name of the computer used as the print server.

The printers attached to the network are displayed.

1

7 Click the name of the printer you want to use, and click [OK].

8 Click [OK].

9 Confirm that the port name is displayed in the [Print to the following port] box, and click [OK].

2. Windows 2000 Configuration

Configuring Windows 2000

Printing Without Using a Print Server

The following procedure describes how to configure Windows 2000 to use the printer on a network without a Windows 2000, Windows NT Server, Windows NT Workstation or NetWare based print server.

 indicates topics explained in this document

1. Decide on the protocol to use

Consult your network administrator about which of the three protocols are appropriate.

TCP/IP

IPP

NetBEUI

2. Configure the chosen protocol



"Configuring TCP/IP and IPP for Printing"



"Configuring NetBEUI for Printing"

3. Select the appropriate software

If using TCP/IP ...

PortNavi

If using IPP or NetBEUI ...

Multidirect Print

4. Install the software and set the printer driver port



"Using PortNavi"



"Using Multidirect Print"

Printing with a Standard TCP/IP Port

Standard TCP/IP port is a standard port of Windows 2000 to enable Peer-to-Peer printing in a network environment.

For more information about Standard TCP/IP port settings, see Windows 2000 Help.

Printing with a LPR Port

See P.28 “*Configuring LPR Port Printing*” for how to configure a LPR port in Windows 2000.

Printing with a Windows 2000 or Windows NT Print Server

See P.29 “*Setting up a Client Computer*” for how to configure Windows 2000 with a Windows 2000 or Windows NT print server.

Configuring the Protocols

Configuring TCP/IP and IPP for Printing

Follow these instructions to configure the Network Interface Board and Windows 2000 to use the TCP/IP protocol and IPP.

Configuring the printer

Configure the printer to use the TCP/IP protocol.

- Confirm that the TCP/IP protocol is set to be active. (The factory default is active.)
- Assign an IP address and make other settings required for using the TCP/IP protocol.

Reference

For more information about how to make the above settings, see the "Setup Guide" that comes with the printer.

If DHCP is used to assign IP addresses, see P.101 "When Using DHCP".

Note

- ❑ After setting the IP address, use the ping command to confirm that it has been set correctly.

① Click **[Start]**, point to **[Programs]**, point to **[Accessories]** and then click **[Command Prompt]**.

② Type the following. (Example IP address is 192.168.15.16)

```
C:> ping 192.168.15.16
```

If the address has been configured correctly, the following message appears.

```
Reply from 192.168.15.16 : bytes=32 time<10ms TTL=32
```

If the address has been configured incorrectly, the following message appears.

```
Request timed out.
```

Configuring a Windows 2000 computer

Follow these steps to configure a Windows 2000 computer to use the TCP/IP protocol.

- 1 Click **[Start]** on the taskbar, point to **[Settings]**, and then click **[Network and Dial-up Connections]**.

- 2 Click **[Local Area Connection]**. On the **[File]** menu, click **[Properties]**.

- 3** Confirm that “Internet Protocol (TCP/IP)” is selected in the [Components checked are used by this connection:] box on the [General] tab.

 **Note**

- If the check box of TCP/IP protocol is not selected, select the box.
- If the TCP/IP protocol is not installed, click [Install] on the [General] tab and install it. For more information about installing the TCP/IP protocol, see Windows 2000 Help.

- 4** Configure the TCP/IP protocols with the appropriate IP address, subnet mask and other settings.

Confirm with the network administrator that the settings are correct.

Configuring NetBEUI for Printing

Follow these instructions to configure the Network Interface Board and Windows 2000 to use the NetBEUI protocol.

Configuring the printer

Configure the printer to use the NetBEUI protocol.

- Confirm that the NetBEUI protocol is set to be active. (The factory default is active.)

 **Reference**

For more information about how to make the above settings, see the "Setup Guide" that comes with the printer.

Configuring a Windows 2000 computer

Follow these steps to configure a Windows 2000 computer to use the NetBEUI protocol.

- 1** Click [Start] on the taskbar, point to [Settings], and then click [Network and Dial-up Connections].
- 2** Click [Local Area Connection]. On the [File] menu, click [Properties].
- 3** Confirm that “NetBEUI Protocol” is selected in the [Components checked are used by this connection:] box on the [General] tab.

 **Note**

- If the check box of the NetBEUI protocol is not selected, select the box.
- If the NetBEUI protocol is not installed, click [Install] on the [General] tab and install it. For more information about installing the NetBEUI protocol, see Windows 2000 Help.

Using PortNavi

PortNavi is a utility that helps you to use network printers effectively. It is useful in environments where two or more network printers are used. It is recommended that you install PortNavi to use Parallel Printing and Recovery Printing. For more information about PortNavi, see PortNavi Help.

❖ PortNavi features

- Send a print job directly to the network printers without using a print server.
- Notification when a printing error occurs.
- Print documents using other printers in the printer group when the specified printer is busy (Recovery Printing).

🚨 Important

- ❑ The following must be the same for the specified printer and the printers selected for Recovery Printing.
 - Printer models
 - Installed options (e.g. Paper Tray)
 - Size and orientation of paper in each paper tray
 - Total memory
 - Installed fonts (including the downloaded fonts)
- Equally divide the number of copies to be printed among the selected printers in the printer group (Parallel Printing).

🚨 Important

- ❑ The following must be the same for the specified printer and the printers selected for Parallel Printing.
 - Printer models
 - Installed options (e.g. Paper Tray)
 - Size and orientation of paper in each paper tray
 - Total memory
 - Installed fonts (including the downloaded fonts)

💡 Limitation

- ❑ To use PortNavi you must install PRINTER MANAGER FOR CLIENT and use the TCP/IP protocol. For the name of the PRINTER MANAGER FOR CLIENT you use, see the inside the front cover of this manual.
- ❑ For more information about installing PRINTER MANAGER FOR CLIENT, see the “Setup Guide” that comes with the printer.

📝 Note

- ❑ If you use the Multidirect Print port for printing, the port is switched automatically to the PortNavi port.
- ❑ Be sure to close all applications before beginning the installation process. Installing PortNavi may require the computer to be restarted.

Installing PortNavi

Follow the procedure below to install PortNavi.

- 1** Configure the IP parameters on the Network Interface Board using the operation panel.

Reference

For more information about setting IP parameters, see “Configuring the printer for the Network with the Operation Panel” in the “Setup Guide” that comes with the printer.

- 2** Insert the CD-ROM into the CD-ROM drive.

Note

- If the installer starts automatically, you can use it to install PortNavi. Follow the instructions on the screen.

- 3** Open [Control Panel], and double-click the [Add/Remove Programs] icon.

- 4** Click [Add New Programs], and then click [CD or Floppy].

- 5** Click [Next >].

- 6** Type the name of the CD-ROM drive in the [Open] box, followed by “:\NETWORK\PORTNAVI\DISK1\SETUP.EXE” (do not include the quotation marks), and then click [Finish].

Note

- An example would be “D:\NETWORK\PORTNAVI\DISK1\SETUP.EXE” when the drive letter is “D”.

- 7** From the [Choose Setup Language] list, select the language you use, and then click [OK].

- 8** After the [Welcome] dialog box appears, click [Next >].

Follow the instructions on the screen.

After installation is complete, configure the printer port with PortNavi. ⇒ P.22 “Setting Up the Printer Driver”

Note

- If the dialog box asking if you want to restart the computer appears, select [Yes, I want to restart my computer now.].

Deleting the port

The following procedure allows you to delete the printer port. If you want to delete the port which is currently used in Windows, switch the port to another such as "FILE", then delete it. For more information about PortNavi, see PortNavi Help.

- 1** From the [Printers] window, click the icon of the printer which uses PortNavi to print. On the [File] menu, click [Properties].
- 2** Click the [Ports] tab and confirm that the PortNavi port is shown in the [Print to the following port(s)] box.
Remember the port name because this port should be deleted later.
- 3** Click the [FILE] check box in the [Port] column.
- 4** Click [OK] to close the Printer Properties.
The port which is currently in use is changed.
- 5** Open the Printer Properties of the same printer.
- 6** Click to select the [Ports] tab.
- 7** At the [Port] column in the [Print to the following port(s)] dialog box, click to select the PortNavi port name as confirmed in step **2**.
- 8** Click [Delete Port].
- 9** When the confirmation message appears, click [Yes].
The port is deleted.
- 10** Click [Close] to close the Printer Properties.

Uninstalling PortNavi

Preparation

Before uninstalling PortNavi, make sure that:

- The port settings dialog box is closed.
- No printer is using the PortNavi port as a printer port.

- 1** Open [Control Panel], and double-click the [Add/Remove Programs] icon.
- 2** Click the [Change or Remove Programs] tab, click [PortNavi], and click [Change/Remove].
- 3** After a confirmation message appears, click [Yes].
UninstallShield removes all of the components of PortNavi.

4 After a confirmation message appears, click **[Yes]**.

5 Confirm the **[Remove Shared File?]** dialog box.

6 When the uninstallation is complete, click **[OK]**.

Setting Up the Printer Driver

The following procedure allows you to configure the printer port to use PortNavi.

Preparation

The target printer must be turned on before starting the installation process.

1 Install the printer driver of the printer you want to use.

2 From the **[Printers]** window, click the icon of the printer. On the **[File]** menu, click **[Properties]**.

3 Click the **[Ports]** tab and click **[Add Port]**.

4 Click **[PortNavi]** in the **[Available port types:]** box, and then click **[New Port]**.

The **[Select Printer]** dialog box appears and printers on the network are browsed.

The displayed items are as follows:

Model Name: The model name of the printer.

Name: The name of Network Interface Board.

Comment: Additional information about Network Interface Board.

Address: The IP address of the printer.

5 Click the model name of the printer, and then click **[OK]**.

Note

If you want to select any printer which is not shown here, click **[IP Address]** and input the IP address of the printer.

6 Confirm that the PortNavi port name is shown in the **[Print to the following port(s)]** box, and click **[OK]**.

The PortNavi port name is shown as "IP address@model name".

The configuration is now complete.

When printing, select the configured printer here and print as usual. Printing will be done automatically by PortNavi.

Accessing the Port Settings Dialog Box

This section describes how to access the port settings dialog box to configure Notice, Parallel Printing and Recovery Printing.

Reference

For more information about these settings, see PortNavi Help.

- 1** Click **[Start]** on the taskbar, point to **[Settings]**, and click **[Printers]**.
- 2** Click the icon of the printer you want to use. On the **[File]** menu, click **[Properties]**.
- 3** Click the **[Ports]** tab and click **[Configure Port]**.

The PortNavi settings dialog box appears.

Using Multidirect Print

Multidirect Print allows you to print to network printers with the NetBEUI protocol and IPP.

Installing Multidirect Print

Follow the procedure below to install Multidirect Print. This section assumes that the appropriate printer driver has already been installed on the computer. For more information about how to install the printer driver, see the "Setup Guide" that comes with the printer.

Preparation

Be sure to close all applications before beginning the installation process. Installing Multidirect Print may require the computer to be restarted.

1 Close all the applications that are currently running.

2 Insert the CD-ROM into the CD-ROM drive.

Note

- If the installer starts automatically, you can use it to install Multidirect Print. Follow the instructions on the screen.

3 Open [Control Panel], and double-click the [Add/Remove Programs] icon.

4 Click [Add New Programs], and then click [CD or Floppy].

5 Click [Next >].

6 Type the name of the CD-ROM drive in the [Open] box, followed by ":\NETWORK\MDP\DISK1\SETUP.EXE" (do not include the quotation marks), and then click [Finish].

Note

- An example would be "D:\NETWORK\MDP\DISK1\SETUP.EXE" when the drive letter is "D".

7 From the [Choose Setup Language] list, select the language you use, and then click [OK].

8 After the [Welcome] dialog box appears, click [Next >].

Follow the instructions on the screen.

After installation is complete, configure the printer port with PortNavi. ⇒ P.25 "Setting Up the Printer Driver"

Note

- If the dialog box asking if you want to restart the computer appears, select [Yes, I want to restart my computer now.].

Uninstalling Multidirect Print

- 1 Open [Control Panel], and double-click the [Add/Remove Programs] icon.
- 2 Click [Change or Remove Programs], click [Multidirect Print], and click [Change/Remove].
- 3 After a confirmation message appears, click [Yes].
UninstallShield removes all of the components of Multidirect Print.
- 4 When the uninstallation is complete, restart the computer.

Setting Up the Printer Driver

Multidirect Print cannot be used until the printer driver is installed and the correct port is selected.

Preparation

The target printer must be turned on before starting the installation process.

1 Install the printer drivers.

If the printer drivers have already been installed, you can proceed to the next step.

Reference

For more information about installing the printer drivers, see the "Setup Guide" that comes with the printer.

Note

- Any port can be selected during the installation, however, LPT1 is recommended.

2 From the [Printers] window, click the icon of the printer you want to use. On the [File] menu, click [Properties].

3 Click the [Ports] tab, and click [Add Port].

4 In the [Available Printer Ports] box, click [Multidirect Print], and then click [New Port].

The [Add Port] dialog box appears, and the printers which can be printed to by TCP/IP are displayed.

Limitation

- If PRINTER MANAGER FOR CLIENT is not installed on the computer, printers which can be printed to by TCP/IP are not displayed. For more information about how to install the program, see the "Setup Guide" that comes with the printer.

5 Select the printer.

TCP/IP

- 1 Click the printer you want to use, and then click **[OK]**.

 **Note**

- Printers that respond to an IP broadcast from the computer will be displayed. To print to a printer not listed here, click **[Specify Address]** and then type the IP address or host name.

NetBEUI

- 1 Click **[NetBEUI]**.

A list of printers that can be printed by the NetBEUI protocol appears.

- 2 Click the printer you want to use, and then click **[OK]**.

 **Note**

- Printers that respond to an broadcast from the computer will be displayed. To print to a printer not listed here, click **[Specify Address]** and then type the NetBEUI address. Confirm the NetBEUI address on the configuration page. For information about the printing of configuration page, see the "Setup Guide" that comes with the printer.
- You cannot print to printers beyond routers.

IPP

- 1 Click **[IPP]**.

The IPP setting dialog box appears.

- 2 In **[Printer URL]**, type "http://(printer's IP address)/printer" as the IP address of the printer.

- 3 As necessary, type the names to distinguish the printer in **[IPP Port Name]**. Type a name differing from those of any existing port names.

If you omit this, the address entered in **[Printer URL]** will be set as the IPP port name.

(Example IP address is 192.168.15.16)

`http://192.168.15.16/printer`

- 4 If using a proxy server and IPP user name, click **[Detailed Settings]** and configure the necessary settings.

 **Note**

- For more information about these setting, see Multidirect Print Help.

- 6 Click **[OK]**.

7 Confirm that the specified printing port is displayed in the [Print to the following Port(s)] box, and click [Close].

This completes the settings.

To print, select the printer specified here, and print in the usual manner. Multidirect Print will now direct print data to the printer automatically.

Changing Port Settings

2

Follow the steps to change Multidirect Print settings, such as the proxy server settings or IPP URL.

 **Note**

There are no settings for the NetBEUI protocol.

1 From the [Printers] window, click the icon of the printer you want to use. On the [File] menu, click [Properties].

2 Click the [Ports] tab, and then click [Configure Port].

The [Port Settings] dialog box appears

- For TCP/IP protocol, you can configure Timeout Settings.
- For IPP, you can configure User Settings, Proxy Settings and Timeout Settings.

 **Note**

For more information about these settings, see Multidirect Print Help.

Configuring LPR Port Printing

This section explains the procedure for printing to a LPR port from Windows 2000.

Note

- The TCP/IP protocols must be installed and configured correctly. For more information about configuring the protocol, see P.17 “*Configuring TCP/IP and IPP for Printing*”.

1 Click **[Start]**, point to **[Settings]**, and then click **[Printers]**.

The **[Printers]** window appears.

2 Click the icon of the printer you want to use. On the **[File]** menu, click **[Properties]**.

3 In the **[Available port types:]** box, click “LPR Port”, and then click **[New Port]**.

Note

- If “LPR Port” does not appear, “Print Services for Unix” has not been installed.

4 Type the IP address of the Network Interface Board into the **[Name or address of server providing lpd:]** box.

5 Type “lp” into the **[Name of printer or print queue on that server box:]**, and click **[OK]**.

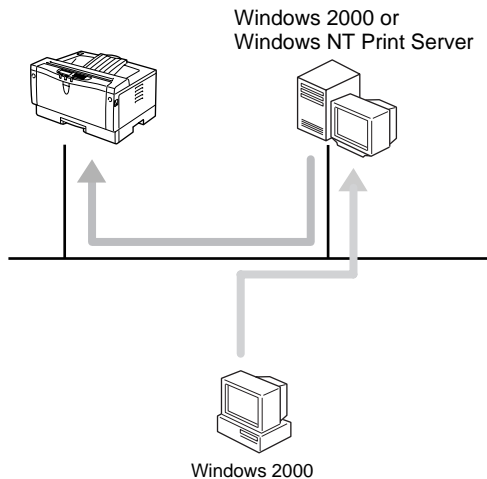
6 Click **[Close]**.

7 Confirm that the port name is displayed in the **[Print to the following port(s)]** box and the check mark is inside the check box, and then click **[OK]**.

Setting up a Client Computer

This section describes the procedures for setting up a client in a network that uses Windows 2000, Windows NT Server or Windows NT Workstation as a print server.

To print from Windows 2000, you must install the printer driver and change the printer port to the print server.



Note

- ❑ This section assumes that the client has already been configured to communicate with a Windows 2000 or Windows NT print server. Do not begin the following procedure until the client has been set up and configured correctly.

Use the **[Printers]** window to set up the printer.

1 Click **[Start]**, point to **[Settings]**, and then click **[Printers]**.

2 Double-click the **[Add Printer]** icon.

This launches the Add Printer Wizard.

3 Click **[Next >]**.

4 Click **[Network printer]**, and click **[Next >]**.

5 In the **[Shared printers:]** box, double-click the name of the computer used as a print server.

The printers attached to the network are displayed.

6 Click the printer you want to use, and click **[Next >]**.

 **Note**

- If the printer driver is not installed in the print server, a message appears. If a driver has been installed on the client, click **[OK]**, and follow the instructions on the screen.
- There is a Windows 2000 printer driver on the CD-ROM that comes with the printer.

2

7 Select whether to use this printer as the default printer, and click **[Next >]**.

8 After installation is complete, click **[Finish]**.

The icon of the newly installed printer appears in the **[Printers]** window.

3. Windows NT 4.0 Configuration

Configuring Windows NT 4.0

Printing Without Using a Print Server

The following procedure describes how to configure Windows NT 4.0 to use the printer on a network without a Windows 2000, Windows NT Server, Windows NT Workstation or NetWare based print server.



indicates topics explained in this document

1. Decide on the protocol to use

Consult your network administrator about which of the three protocols are appropriate.

TCP/IP

IPP

NetBEUI

2. Configure the chosen protocol



"Configuring TCP/IP and IPP for Printing"



"Configuring NetBEUI for Printing"

3. Select the appropriate software

If using TCP/IP ...

PortNavi

If using IPP or NetBEUI ...

Multidirect Print

4. Install the software and set the printer driver port



"Using PortNavi"



"Using Multidirect Print"

Printing with a LPR Port

See P.44 "Configuring LPR Port Printing" for how to configure a LPR port in Windows NT 4.0.

Printing with a Windows 2000 or Windows NT Print Server

See P.44 "Configuring LPR Port Printing" for how to configure Windows NT 4.0 with a Windows 2000 or Windows NT print server.

Configuring the Protocols

Configuring TCP/IP and IPP for Printing

Follow these instructions to configure the Network Interface Board and Windows NT to use the TCP/IP protocol and IPP.

Configuring the printer

3

Configure the printer to use the TCP/IP protocol.

- Confirm that the TCP/IP protocol is set to be active. (The factory default is active.)
- Assign an IP address and make other settings required for using the TCP/IP protocol.

Reference

For more information about how to make the above settings, see the "Setup Guide" that comes with the printer.

If DHCP is used to assign IP addresses, see P.101 "When Using DHCP".

Note

- After setting the IP address, use the ping command to confirm that it has been set correctly.

① Click **[Start]**, point to **[Programs]**, and then click **[Command Prompt]**.

② Type the following. (Example IP address is 192.168.15.16)

```
C:> ping 192.168.15.16
```

If the address has been configured correctly, the following message appears.

```
Reply from 192.168.15.16 : bytes=32 time<10ms TTL=32
```

If the address has been configured incorrectly, the following message appears.

```
Request timed out.
```

Configuring a Windows NT computer

Follow these steps to configure a Windows NT computer to use the TCP/IP protocol.

- 1** Open **[Control Panel]** and double-click the **[Network]** icon. Confirm that "TCP/IP Protocol" is listed in the **[Network protocols]** box on the **[Protocols]** tab.

Note

- If the TCP/IP protocol is not installed, click **[Add]** on the **[Protocols]** tab and install it. For more information about installing the TCP/IP protocol, see Windows NT Help.

- 2** Configure the TCP/IP protocols with the appropriate IP address, subnet mask and other settings.

Confirm with the network administrator that the settings are correct.

- 3** Click the **[Services]** tab, and confirm that "Microsoft TCP/IP Printing" is installed.

If "Microsoft TCP/IP Printing" is not installed, click **[Add]** on the **[Services]** tab, and install it. For more information about installing and configuring network services, see Windows NT Help.

Configuring NetBEUI for Printing

3

Follow these instructions to configure the Network Interface Board and Windows NT to use the NetBEUI protocol.

Configuring the printer

Configure the printer to use the NetBEUI protocol.

- Confirm that the NetBEUI protocol is set to be active. (The factory default is active.)

Reference

For more information about how to make the above settings, see the "Setup Guide" that comes with the printer.

Configuring a Windows NT computer

Install the NetBEUI protocol on the Windows NT computer, and change the LAN adapter number (Lana Number).

- 1** Open **[Control Panel]** and double-click the **[Network]** icon. Confirm that "NetBEUI Protocol" is listed in the **[Network Protocols]** box on the **[Protocols]** tab.

Note

- If the NetBEUI protocol is not installed, click **[Add]** on the **[Protocols]** tab, and install it. For more information about installing the NetBEUI protocol, see Windows NT Help.

- 2** Change the Lana Number. Click the **[Services]** tab, click "NetBIOS Interface" in the **[Network Services]** box, and click **[Properties]**.

- 3** Click the Lana Number corresponding the Nbf protocol of the **[Network Route]** headline, and click **[Edit]**.

- 4** Type "0" as the Lana Number.

Note

- If the other protocol's Lana Number is configured with "0", you must change the Lana Number a number other than "0".

5 Click [OK].

6 Click [Close], and close the [Network] dialog box.

7 After confirming the message to restart, click [Yes].

 **Note**

- After you change the Lana Number, you must restart the computer.

Using PortNavi

PortNavi is a utility that helps you to use network printers effectively. It is useful in environments where two or more network printers are used. It is recommended that you install PortNavi to use Parallel Printing and Recovery Printing. For more information about PortNavi, see PortNavi Help.

❖ PortNavi features

- Send a print job directly to the network printers without using a print server.
- Notification when a printing error occurs.
- Print documents using other printers in the printer group when the specified printer is busy (Recovery Printing).

🚫 Important

- ❑ The following must be the same for the specified printer and the printers selected for Recovery Printing.
 - Printer models
 - Installed options (e.g. Paper Tray)
 - Size and orientation of paper in each paper tray
 - Total memory
 - Installed fonts (including the downloaded fonts)
- Equally divide the number of copies to be printed among the selected printers in the printer group (Parallel Printing).

🚫 Important

- ❑ The following must be the same for the specified printer and the printers selected for Parallel Printing.
 - Printer models
 - Installed options (e.g. Paper Tray)
 - Size and orientation of paper in each paper tray
 - Total memory
 - Installed fonts (including the downloaded fonts)

💡 Limitation

- ❑ To use PortNavi you must install PRINTER MANAGER FOR CLIENT and use the TCP/IP protocol. For the name of the PRINTER MANAGER FOR CLIENT you use, see the inside the front cover of this manual.
- ❑ For more information about installing PRINTER MANAGER FOR CLIENT, see the “Setup Guide” that comes with the printer.
- ❑ On a computer that is used as a print server, do not use the features such as Parallel Printing, Recovery Printing and Notify. For more information about turning off these features, see PortNavi Help.

 **Note**

- If you use the Multidirect Print port for printing, the port is switched automatically to the PortNavi port.
- Be sure to close all applications before beginning the installation process. Installing PortNavi may require the computer to be restarted.

Installing PortNavi

Follow the procedure below to install PortNavi.

3

- 1** Configure the IP parameters on the Network Interface Board using the operation panel.

 **Reference**

For more information about setting IP parameters, see “Configuring the printer for the Network with the Operation Panel” in the “Setup Guide” that comes with the printer.

- 2** Insert the CD-ROM into the CD-ROM drive.

 **Note**

- If the installer starts automatically, you can use it to install PortNavi. Follow the instructions on the screen.

- 3** Open [Control Panel], and double-click the [Add/Remove Programs] icon.

- 4** On the [Install/Uninstall] tab, click [Install].

- 5** Click [Next >].

- 6** Type the name of the CD-ROM drive in the [Command line for installation program] box, followed by “:\NETWORK\PORTNAVI\DISK1\SETUP.EXE” (do not include the quotation marks), and then click [Finish].

 **Note**

- An example would be “D:\NETWORK\PORTNAVI\DISK1\SETUP.EXE” when the drive letter is “D”.

- 7** From the [Choose Setup Language] list, select the language you want to use, and then click [OK].

- 8** After the [Welcome] dialog box appears, click [Next >].

Follow the instructions on the screen.

After installation is complete, configure the printer port with PortNavi. ⇒ P.38 “Setting Up the Printer Driver”

 **Note**

- If the dialog box asking if you want to restart the computer appears, select [Yes, I want to restart my computer now.].

Deleting the port

The following procedure allows you to delete the printer port. If you want to delete the port which is currently used in Windows, switch the port to another such as "FILE", then delete it. For more information about PortNavi, see PortNavi Help.

- 1** From the [Printers] window, click the icon of the printer which uses PortNavi to print. On the [File] menu, click [Properties].
- 2** Click the [Details] tab and confirm that the PortNavi port is shown in the [Print to the following port] box.
Remember the port name because this port should be deleted later.
- 3** From the [Print to the following port] box, select [FILE].
- 4** Click [Apply].
The port which is currently in use is changed.
- 5** Click [Delete Port].
- 6** Click the PortNavi port name as confirmed in step **2**, then click [OK].
The port is deleted.
- 7** Click [OK] to close the printer properties.

Uninstalling PortNavi

Preparation

Before uninstalling PortNavi, make sure that:

- The port settings dialog box is closed.
- No printer is using the PortNavi port as a printer port.

- 1** Open [Control Panel], and double-click the [Add/Remove Programs] icon.
- 2** On the [Install/Uninstall] tab, click [PortNavi], and click [Add/Remove].
- 3** After a confirmation message appears, click [Yes].
UninstallShield removes all of the components of PortNavi.
- 4** After a confirmation message appears, click [Yes].
- 5** Confirm the [Remove Shared File?] dialog box.
- 6** When the uninstallation is complete, click [OK].

Setting Up the Printer Driver

The following procedure allows you to configure the printer port to use PortNavi.

Preparation

The target printer must be turned on before starting the installation process.

- 1** Install the printer driver of the printer you want to use.
- 2** From the [Printers] window, click the icon of the printer. On the [File] menu, click [Properties].
- 3** Click the [Details] tab and click [Add Port].
- 4** Click [Other], click [PortNavi] from the list and then click [OK].

The [Select Printer] dialog box appears .

The displayed items are as follows:

Model Name: The model name of the printer.

Name: The name of the Network Interface Board.

Comment: Additional information about the Network Interface Board.

Address: The IP address of the printer.

- 5** Click the model name of the printer, and then click [OK].

Note

- If you want to select any printer which is not shown here, click [IP Address] and input the IP address of the printer.

- 6** Confirm that the PortNavi port name is shown in the [Print to the following port] box, and click [OK].

The PortNavi port name is shown as "IP address@model name".

The configuration is now complete.

When printing, select the configured printer here and print as usual. Printing will be done automatically by PortNavi.

Accessing the Port Settings Dialog Box

This section describes how to access the port settings dialog box to configure Notice, Parallel Printing and Recovery Printing.

Reference

For more information about these settings, see PortNavi Help.

- 1** Click [Start] on the taskbar, point to [Settings], and click [Printers].

2 Click the icon of the printer you want to use. On the [File] menu, click [Properties].

3 Click the [Details] tab and click [Port Settings].

The PortNavi settings dialog box appears.

Using Multidirect Print

Multidirect Print allows you to print to network printers with the NetBEUI protocol and IPP.

Installing Multidirect Print

Follow the procedure below to install Multidirect Print. This section assumes that the appropriate printer driver has already been installed on the computer. For more information about how to install the printer driver, see the "Setup Guide" that comes with the printer.

Preparation

Be sure to close all applications before beginning the installation process. Installing Multidirect Print may require the computer to be restarted.

1 Close all the applications that are currently running.

2 Insert the CD-ROM into the CD-ROM drive.

Note

- If the installer starts automatically, you can use it to install Multidirect Print. Follow the instructions on the screen.

3 Open [Control Panel], and double-click the [Add/Remove Programs] icon.

4 On the [Install/Uninstall] tab, click [Install].

5 Click [Next >].

6 Type the name of the CD-ROM drive in the [Command line for installation program] box, followed by ":\NETWORK\MDP\DISK1\SETUP.EXE" (do not include the quotation marks), and then click [Finish].

Note

- An example would be "D:\NETWORK\MDP\DISK1\SETUP.EXE" when the drive letter is "D".

7 From the [Choose Setup Language] list, select the language you want to use, and then click [OK].

8 After the [Welcome] dialog box appears, click [Next >].

Follow the instructions on the screen.

After installation is complete, configure the printer port with PortNavi. ⇒ P.41 "Setting Up the Printer Driver"

Note

- If the dialog box asking if you want to restart the computer appears, select [Yes, I want to restart my computer now.].

Uninstalling Multidirect Print

- 1 Open [Control Panel], and double-click the [Add/Remove Programs] icon.
- 2 On the [Install/Uninstall] tab, click [Multidirect Print], and click [Add/Remove].
- 3 After a confirmation message appears, click [Yes].
UninstallShield removes all of the components of Multidirect Print.
- 4 When the uninstallation is complete, restart the computer.

Setting Up the Printer Driver

Multidirect Print cannot be used until the printer driver is installed and the correct port is selected.

Preparation

The target printer must be turned on before starting the installation process.

1 Install the printer drivers.

If the printer drivers have already been installed, you can proceed to the next step.

Reference

For more information about installing the printer drivers, see the "Setup Guide" that comes with the printer.

Note

- Any port can be selected during the installation, however, LPT1 is recommended.

2 From the [Printers] window, click the icon of the printer you want to use. On the [File] menu, click [Properties].

3 Click the [Ports] tab, and click [Add Port].

4 In the [Available Printer Ports] box, click [Multidirect Print], and then click [New Port].

The [Select Printer] dialog box appears, and the printers which can be printed to by TCP/IP are displayed.

Limitation

- If PRINTER MANAGER FOR CLIENT is not installed on the computer, printers which can be printed to by TCP/IP are not displayed. For more information about how to install the program, see the "Setup Guide" that comes with the printer.

5 Select the printer.

TCP/IP

- 1 Click the printer you want to use, and then click **[OK]**.

 **Note**

- Printers that respond to an IP broadcast from the computer will be displayed. To print to a printer not listed here, click **[Specify Address]** and then type the IP address or host name.

NetBEUI

- 1 Click **[NetBEUI]**.

A list of printers that can be printed by the NetBEUI protocol appears.

- 2 Click the printer you want to use, and then click **[OK]**.

 **Note**

- Printers that respond to an broadcast from the computer will be displayed. To print to a printer not listed here, click **[Specify Address]** and then type the NetBEUI address. Confirm the NetBEUI address on the configuration page. For information about the printing of configuration page, see the "Setup Guide" that comes with the printer.
- You cannot print to printers beyond routers.

IPP

- 1 Click **[IPP]**.

The IPP setting dialog box appears.

- 2 In **[Printer URL]**, type "http://(printer's IP address)/printer" as the IP address of the printer.

- 3 As necessary, type the names to distinguish the printer in **[IPP Port Name]**. Type a name differing from those of any existing port names.

If you omit this, the address entered in **[Printer URL]** will be set as the IPP port name.

(Example IP address is 192.168.15.16)

http://192.168.15.16/printer

- 4 If using a proxy server and IPP user name, click **[Detailed Settings]** and configure the necessary settings.

 **Note**

- For more information about these setting, see Multidirect Print Help.

- 6 Click **[OK]**.

- 7 Confirm that the specified printing port is displayed in the [Print to the following Port] box, and click [OK].

This completes the settings.

To print, select the printer specified here, and print in the usual manner. Multidirect Print will now direct print data to the printer automatically.

Changing Port Settings

Follow the steps to change Multidirect Print settings, such as the proxy server settings or IPP URL.

Note

- There are no settings for the NetBEUI protocol.

- 1 From the [Printers] window, click the icon of the printer you want to use. On the [File] menu, click [Properties].

- 2 Click the [Ports] tab, and then click [Port Configuration].

The [Port Settings] dialog box appears

- For TCP/IP protocol, you can configure Timeout Settings.
- For IPP, you can configure User Settings, Proxy Settings and Timeout Settings.

Note

- For more information about these settings, see Multidirect Print Help.

Configuring LPR Port Printing

This section explains the procedure for printing to a LPR port from Windows NT.

Note

- The following procedure assumes that the printer drivers have already been installed. This is the procedure to change the printer port to LPR.
- The TCP/IP protocols must be installed and configured correctly. For more information about configuring the protocol, see P.32 *“Configuring TCP/IP and IPP for Printing”*.

- 1** Click **[Start]**, point to **[Settings]**, and then click **[Printers]**.
- 2** Click the icon of the printer you want to use. On the **[File]** menu, click **[Properties]**.
- 3** Click the **[Ports]** tab, and then click **[Add Port]**.
- 4** In the **[Available Printer Ports]** box, click “LPR Port”, and then click **[New Port]**.

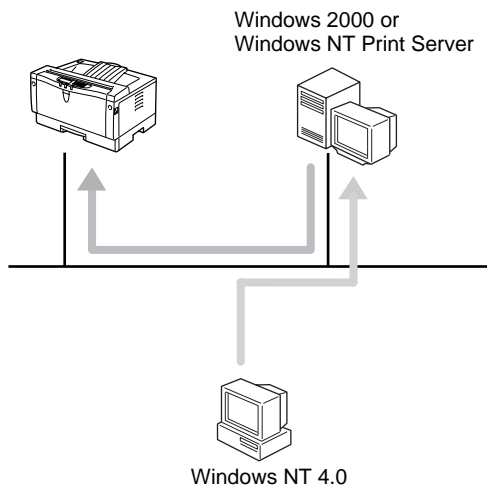
Note

- If “LPR Port” does not appear, “Microsoft TCP/IP Printing” has not been installed.
- 5** Type the IP address of the Network Interface Board into the **[Name or address of server providing lpd]** box.
 - 6** Type “lp” into the **[Name of printer or print queue on that server]** box, and click **[OK]**.
 - 7** Click **[Close]**.
 - 8** Confirm that the port name is displayed in the **[Print to the following port(s)]** box and the check mark is inside the check box, and then click **[OK]**.

Setting up a Client Computer

This section describes the procedures for setting up a client in a network that uses Windows 2000, Windows NT Server or Windows NT Workstation as a print server.

To print from Windows NT 4.0, you must install the printer driver and change the printer port to the print server.



3

Note

- ❑ This section assumes that the client has already been configured to communicate with a Windows 2000 or Windows NT print server. Do not begin the following procedure until the client has been set up and configured correctly.

Use the **[Printers]** window to set up the printer.

1 Click **[Start]**, point to **[Settings]**, and then click **[Printers]**.

2 Double-click the **[Add Printer]** icon.

This launches the Add Printer Wizard.

3 Click **[Network printer server]**, and click **[Next >]**.

4 In the **[Shared Printers]** box, double-click the name of the computer used as a print server.

The printers attached to the network are displayed.

5 Click the printer you want to use, and click **[OK]**.

Note

- ❑ If the printer driver is not installed in the print server, a message appears. If a driver has been installed on the client, click **[OK]**, and follow the instructions on the screen.
- ❑ There is a Windows NT printer driver on the CD-ROM that comes with the printer.

6 Select whether to use this printer as the default printer, and click **[Next >]**.

7 After installation is complete, click **[Finish]**.

The icon of the newly installed printer appears in the **[Printers]** window.

4. NetWare Configuration

This chapter describes how to configure the printer to use as a print server or a remote printer in a NetWare environment.

Note

- NetWare must be set to active using the operation panel of the printer. For more information about how to set it, see the "Setup Guide" that comes with the printer.

Installing the NIB Setup Tool

A utility called the NIB Setup Tool is provided to configure the printer to work in a network environment. This section describes how to install PRINTER MANAGER FOR ADMINISTRATOR, and how to run the NIB Setup Tool.

Limitation

- The NIB Setup Tool is supported to work with the following operating systems.
 - Microsoft Windows 95/98
 - Microsoft Windows 2000
 - Microsoft Windows NT 4.0

Installing PRINTER MANAGER FOR ADMINISTRATOR

Follow these steps to install PRINTER MANAGER FOR ADMINISTRATOR.

Preparation

You should install PRINTER MANAGER FOR ADMINISTRATOR on the computer. If you install PRINTER MANAGER FOR ADMINISTRATOR from a file server or run it via the network, PRINTER MANAGER FOR ADMINISTRATOR might not work correctly.

Be sure to close all applications before starting the installation procedure.

- 1** Close all the applications that are currently running.
- 2** Insert the CD-ROM labeled "Printer Drivers and Utilities" into the CD-ROM drive.

If the installer starts automatically, follow the instructions on the screen.
If not, go to step **3**.
- 3** Open [Control Panel], and double-click the [Add/Remove Programs] icon.
- 4** On the [Install/Uninstall] tab, click [Install].

5 Click **[Next >]**.

6 In the **[command line for installation program]** box, type the name of the CD-ROM drive followed by “:\NETWORK\PRINTMAN\ADMIN\DISK1\SETUP.EXE” (do not include the quotation marks) and then click **[Finish]**.

 **Note**

- An example would be “D:\NETWORK\PRINTMAN\ADMIN\DISK1\SETUP.EXE” when the CD-ROM drive name is “D”.

7 From the **[Choose Setup Language]** list, select the language you want to use, and then click **[OK]**.

8 After the **[Welcome]** dialog box appears, click **[Next >]**.

9 The **[Software License Agreement]** dialog box appears.

After reading through all of the contents by clicking **[PageDown]**, click **[Yes]** to agree with the License Agreement.

10 Select a folder to install **PRINTER MANAGER FOR ADMINISTRATOR** in, and then click **[Next >]**.

If you want to change the displayed folder, click **[Browse]** to select another one.

The installation program starts.

When a confirmation dialog box appears, the installation program is complete.

Running the NIB Setup Tool

1 Click **[Start]**, point to **[Programs]**, and then click **[NIB Setup Tool]** in the **[PRINTER MANAGER FOR ADMINISTRATOR]** program folder.

Quick Setup Using the NIB Setup Tool Wizard

Using the NIB Setup Tool, you can easily set up a NetWare printing environment.

Reference

For more information about installing the NIB Setup Tool, see P.47 *“Installing the NIB Setup Tool”*.

You can select **[Wizard]** or **[Property Sheet]** as an installation method.

When you configure the Network Interface Board for the first time, use the Wizard method.

If you want to use the Property Sheet method, see P.52 *“NetWare 3.x - Advanced Settings”* or P.58 *“NetWare 4.x, 5 - Advanced Settings”*.

Note

- This section assumes that NetWare is functional and that the necessary environment for NetWare Print Services is available.
- If you configure the Network Interface Board in a NetWare environment using the NIB Setup Tool, you should install the client software released from Novell in the following cases.
 - Windows 95/98 in NDS mode configuration
 - Windows NT 4.0 in NDS mode configuration
 - Windows NT 4.0 in Bindery mode configuration

1 Log on to the Netware file server or the NDS tree as an Admin or Admin equivalent.

2 Run the NIB Setup Tool.

Reference

⇒ P.48 *“Running the NIB Setup Tool”*

3 Click **[Wizard]** and click **[OK]**.

The **[Network board list]** dialog box of the Network Interface Board appears.

4 Click **[IPX protocol]**.

5 Click to select the IPX address of the Network Interface Board you are configuring, and click **[Next >]**.

Note

- If you do not know which Network Interface Board you are configuring, print a network configuration page to confirm the MAC address (Network address).

6 Confirm that the MAC address and IPX address are correct, and click [Finish].

7 Type the print server name into the [Device Name] box, and click [Next >].

The default setting is “RDP_” followed by the 6 digit serial number. We recommend that you change it to something that is easier to remember or something based on the structure of the network.

8 In a dialog box for selecting a network environment, click to select the [NetWare] check box and click to clear the [TCP/IP] check box.

9 Click [Next >].

A dialog box for configuring the NetWare environment appears.

10 Select [Bindery] when printing under Bindery mode, or select [NDS] when printing under NDS mode.

When you are using NetWare version 4.x, you should select [NDS].

11 If you selected [Bindery], type into the [File Server Name:] box the name of the file server in which a print server is to be created.

Clicking [Browse], you can select a file server among those listed in the [Browse] dialog box.

12 If you selected [NDS], type into the [Tree:] box the name of the NDS tree in which the print server is created, and type the context into the [Context:] box.

Clicking [Browse], you can select a NDS tree and a NDS context among those listed in the [Browse] dialog boxes.

As a context, object names are typed from a lower object and divided by a period. For example, if you want to create a print server into NET under DS, type “NET.DS”.



13 Click [Next >].

14 Type the name of the printer into the [Printer Name] box, and the name of the print queue into the [Print Queue Name] box.

The default setting for Printer Name is “Print Server Name” followed by “_1” and that for Print Queue Name is “Print Server Name” followed by “_Q” (quotation marks are not included). You can change them if necessary.

- 15** If you have selected NDS mode, type the volume of the print queue into the **[Queue Volume]** box.

Clicking **[Browse]**, you can select one of those shown in the **[Browse]** dialog box.

- 16** Click **[Next >]**.

A dialog box to confirm the printing environment appears.

- 17** After confirming the environment, click **[Next >]**.

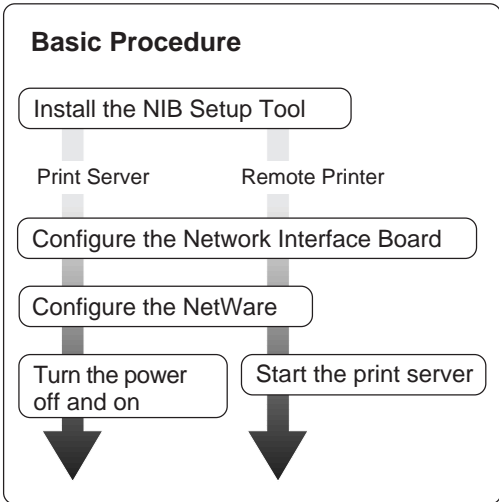
If you want to change the settings, click **[< Back]** and make the settings again.

Clicking **[Next >]**, the NIB Setup Tool automatically creates the Print Server, the Printer, and the Print Queue in the NetWare network.

- 18** After a confirmation dialog box appears, select **[Quit]** and click **[Finish]** to exit the NIB Setup Tool.

NetWare 3.x - Advanced Settings

The actual procedures for configuring the printer differ depending on whether the Network Interface Board is configured as a print server or as a remote printer. This section describes how to configure it in the NetWare 3.x environment.



4

Preparation

The following procedures use the Property Sheet method in configuring the Network Interface Board. If you configure the Network Interface Board as a NetWare print server for the first time, we recommend you use the Wizard method. ⇒ P.49 “Quick Setup Using the NIB Setup Tool Wizard”

Note

- This section assumes NetWare is functional and that the necessary environment for the NetWare Print Service is available.

Setting Up as a Print Server

1 Log on to the file server as a Supervisor or a Supervisor equivalent.

2 Run the NIB Setup Tool.

Reference

⇒ P.48 “Running the NIB Setup Tool”

3 Click [Property Sheet] and click [OK].

The [Browse] dialog box of the Network Interface Board appears.

4 Click [IPX protocol].

- 5** Click the IPX address of the Network Interface Board which is to be configured, and then click **[Next >]**.

 **Note**

- If you do not know which Network Interface Board you are configuring, see a network configuration page to confirm the MAC address (Network Address).

- 6** Confirm that the MAC address and IPX address are correct, and click **[Finish]**.

The **[NIB Setup Tool]** window appears.

- 7** Click **[Configure]**.

The property sheet appears.

- 8** Click the **[General]** tab, and type the name of the print server into the **[Device Name]** box.

- 9** Click the **[NetWare]** tab, and make the following settings.

1 Select **[Bindery]**.

2 In the **[File Server Name:]** box, type the name of the file server in which a print server is to be created.

Click **[Browse]** to select a file server among those listed in the **[Browse]** dialog box.

3 Click **[OK]** to close the property sheet.

4 After a confirmation dialog box appears, click **[OK]**.

- 10** On the **[NIB]** menu, click **[Exit]** to exit the NIB Setup Tool.

- 11** Type "PCONSOLE" from the command prompt.

```
F:> PCONSOLE
```

- 12** Create a print queue as follows.

 **Note**

- If you use a currently defined print queue, go to step **13**.

1 From the **[Available Options]** menu, select **[Print Queue Information]** and press the **[ENTER]** key.

2 Press the **[INSERT]** key and type a print queue name.

3 Press the **[ESC]** key to return to the **[Available Options]** menu.

13 Create a printer as follows.

- ❶ From the [Available Options] menu, select [Print Server Information] and press the [ENTER] key.
- ❷ To create a new print server, press the [INSERT] key and type a print server name.

If you use a currently defined print server, select one of the print servers shown in the [Print Server] list.

⚠ Important

- Use the same name as that specified in the NIB Setup Tool. (Step 8).

- ❸ From the [Print Server Information] menu, select [Print Server Configuration].
- ❹ From the [Print Server Configuration] menu, select [Printer Configuration].
- ❺ Select the printer which is indicated as "Not Installed".
- ❻ If you want to change the name of the printer, type a new name.

A name "Printer x" is assigned to the printer. "x" stands for the number of the selected printer.

- ❼ As Type, select [Remote Other/Unkown].

The IRQ, Buffer size, Starting form, and Queue service mode are automatically configured.

- ❽ Press the [ESC] key, and click [Yes] in the confirmation dialog box.
- ❾ Press the [ESC] key to return to the [Print Server Configuration] menu.

14 Assign print queues to the created printer as follows.

- ❶ From the [Print Server Configuration] menu, select [Queues Serviced By Printer].
- ❷ Select the printer created in step 13.
- ❸ Press the [INSERT] key to select a queue serviced by the printer.

📝 Note

- You can select more than one queue at a time.

- ❹ Follow the instructions on the screen to make other necessary settings.

When you have finished the previous steps, confirm that the queues are assigned.

15 Press the [ESC] key until "Exit?" appears, and select [Yes] to exit PCONSOLE.**16** Turn the printer power off and on.**📝 Note**

- To confirm that the printer is configured correctly, type as follows from the command prompt.

F:> USERLIST

- If the printer works as configured, the name of the print server appears as an attached user.

Setting Up as a Remote Printer

1 Log on to the file server as a Supervisor or a Supervisor equivalent.

2 Run the NIB Setup Tool.

 **Reference**

⇒ P.48 "Running the NIB Setup Tool"

3 Click [Property Sheet] and click [OK].

The [Browse] dialog box of the Network Interface Board appears.

4 Click [IPX protocol].

5 Click the IPX address of the Network Interface Board which is to be configured, and click [Next >].

 **Note**

If you do not know which Network Interface Board you are configuring, see a network configuration page to confirm the MAC address (Network Address).

6 Confirm that the MAC address and IPX address are correct, and click [Finish].

The [NIB Setup Tool] window appears.

7 Click [Configure].

The property sheet appears.

8 Click the [General] tab, and type the name of the print server into the [Device Name] box.

9 Click the [NetWare] tab, and make the following settings.

1 In the [Print Server Name] box, type the name of the print server.

2 In the [File Server Name] box, type the name of the file server in which a print server is to be created.

Clicking [Browse], you can select a file server among those listed in the [Browse] dialog box.

3 In the [Print Server Operation Mode] group, click [As Remote Printer].

4 In the [Remote Printer No.] box, type the printer number.

 **Important**

Use the same printer number as that to be created in the printer server.

5 Click [OK] to close the property sheet.

6 After a confirmation dialog box appears, click [OK].

10 On the [NIB] menu, click [Exit] to exit the NIB Setup Tool.

11 Type "PCONSOLE" from the command prompt.

F:> PCONSOLE

12 Create a print queue as follows.

 **Note**

If you use a currently defined print queue, go to step 12.

1 From the [Available Options] menu, select [Print Queue Information] and press the [ENTER] key.

2 Press the [INSERT] key and type a print queue name.

3 Press the [ESC] key to return to the [Available Options] menu.

13 Create a printer as follows.

1 From the [Available Options] menu, select [Print Server Information] and press the [ENTER] key.

2 To create a new print server, press the [INSERT] key and type a print server name.

If you use an currently defined print server, select one of the print servers shown in the [Print Server] list.

 **Important**

Use the same name as that specified in the NIB Setup Tool. (Step 3).

3 From the [Print Server Information] menu, select [Print Server Configuration].

4 From the [Print Server Configuration] menu, select [Printer Configuration].

5 Select the printer which is indicated as "Not Installed".

 **Important**

Use the same number as that specified as Remote Printer No. using the NIB Setup Tool. (Step 3-4).

6 If you change the name of the printer, type a new name.

A name "Printer x" is assigned to the printer. x stands for the number of the selected printer.

7 As type, select [Remote Parallel, LPT1].

The IRQ, Buffer size, Starting form, and Queue service mode are automatically configured.

8 Press the [ESC] key, and click [Yes] in the confirmation dialog box.

9 Press the [ESC] key to return to [Print Server Configuration Menu].

14 Assign print queues to the created printer as follows.

- ❶ From [Print Server Configuration Menu], select [Queues Serviced By Printer].
- ❷ Select the printer created in step 12.
- ❸ Press the [INSERT] key to select a queue serviced by the printer.

 **Note**

- You can select more than one queue at a time.

❹ Follow the instructions on the screen to make other necessary settings.

When you have finished the above steps, confirm that the queues are assigned.

15 Press the [ESC] key until “Exit?” appears, and select [Yes] to exit PCONSOLE.

16 Start the print server by typing the following from the console of the NetWare Server.

If it is running, restart it after exiting it.

❖ **To exit**

```
CAREE: unload pserver
```

❖ **To start**

```
CAREE: load pserver print_server_name
```

 **Note**

- If the printer works as configured, “Waiting for job” appears.

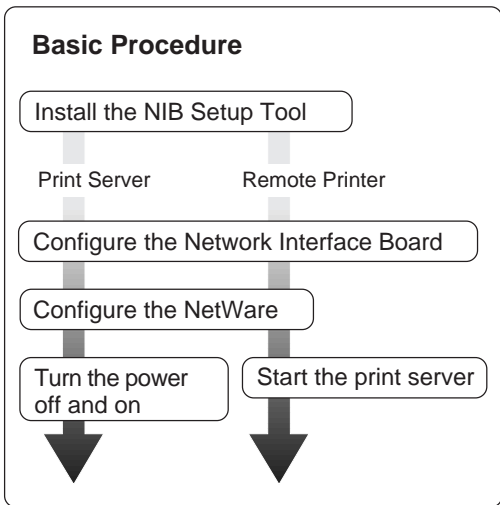
NetWare 4.x, 5 - Advanced Settings

The actual procedures for configuring the printer differ depending on whether the Network Interface Board is configured as a print server or as a remote printer. This section describes how to configure it in the NetWare 4.x, 5 environment.

❖ To use NetWare 5

- You cannot use the NDPS (Novell Distributed Print Services) mode.
- If you use Pure IP, configure the printer to use the TCP/IP protocol. For more information about how to make the settings, see the “Setup Guide” that comes with the printer.

4



📄 Preparation

The following procedures use the Property Sheet method in configuring the Network Interface Board. If you configure the Network Interface Board as a NetWare print server for the first time, we recommend you use the Wizard method. ⇒ P.49 “Quick Setup Using the NIB Setup Tool Wizard”

📌 Note

- ❑ This section assumes NetWare is functional and that the necessary environment for the NetWare Print Service is available.
- ❑ You should install the client software released from Novell on the Windows before running the NIB Setup Tool for configuring in NDS mode or using Windows NT 4.0.

Setting Up as a Print Server

Important

- You can set up the print server using the NDS or Bindery mode in NetWare 4.x, 5. The following procedure is for setting up the print server using the NDS mode in NetWare 4.1. When you set up the print server using the Bindery mode, use the NIB Setup Tool Wizard. ⇒ P.49 *“Quick Setup Using the NIB Setup Tool Wizard”*.

Note

- If you use Pure IP in NetWare 5, follow the procedure on P.61 *“Using Pure IP in the NetWare 5 environment”*.

1 Log on to the file server as an Admin or an Admin equivalent.

2 Run the NIB Setup Tool.

Reference

⇒ P.48 *“Running the NIB Setup Tool”*

3 Click **[Property Sheet]** and click **[OK]**.

The **[Browse]** dialog box of the Network Interface Board appears.

4 Click **[IPX protocol]**.

5 Click the IPX address of the Network Interface Board which is to be configured, and click **[Next >]**.

Note

- If you do not know which Network Interface Board you are configuring, see a network configuration page to confirm the MAC address (Network Address).

6 Confirm that the MAC address and IPX address are correct, and click **[Finish]**.

The **[NIB Setup Tool]** window appears.

7 Click **[Configure]**.

The property sheet appears.

8 Click the **[General]** tab, and type the name of the print server into the **[Device Name]** box.

9 Click the [NetWare] tab, and make the following settings.

- 1** Select [NDS].
- 2** Type into the [Tree:] box the name of the NDS tree in which the print server is created, and type the context into the [Context:] box.

Clicking [Browse], you can select a NDS tree and a NDS context among those listed in the [Browse] dialog box.

As a context, object names are typed from a lower object and divided by a period. For example, if you want to create a print server into NET under DS, type "NET.DS".



- 3** Click [OK] to close the property sheet.
 - 4** After a confirmation dialog box appears, click [OK].
- 10** On the [NIB] menu, click [Exit] to exit the NIB Setup Tool.

11 From Windows, run NWAdmin.

Reference

For more information about NWAdmin, see the documentation that comes with the NetWare.

12 Create a print queue as follows.

- 1** Select the container object the print queue is located in among those in the directory tree, and click [Create] on the [Object] menu.
- 2** In the [Class of new object] box, click "Print Queue", and click [OK].
- 3** In the [Print Queue name] box, type the name of the print queue.
- 4** In the [Print Queue Volume] box, click the [Browse] button.
- 5** In the [Available objects] box, click the volume in which the print queue is created, and click [OK].
- 6** After confirming the settings, click [Create].

13 Create a printer as follows.

- 1** Select the container object the printer is located in, and click [Create] on the [Object] menu.
- 2** In the [Class of new object] box, click "Printer", and click [OK]. When you are using NetWare 5, click "Printer (Non NDPS)".
- 3** In the [Printer name] box, type the name of the printer.
- 4** Click [Define additional properties] to check a box, and click [Create].

- 14** Assign print queues to the created printer as follows.
- 1 Click [Assignments], and click [Add] in the [Assignments] group.
 - 2 In the [Available objects] box, click the queue created in step 12, and click [OK].
 - 3 Click [Configuration], and in the [Printer type] box, select [Parallel] using the drop-down menu, and then click [Communication].
 - 4 Click [Manual load] in the [Communication type] group, and click [OK].
 - 5 After confirming the settings, click [OK].

- 15** Create a print server as follows.
- 1 Select the context specified using the NIB Setup Tool (step 9-1), and on the [Object] menu, click [Create].
 - 2 In the [Class of new object] box, click "Print Server", and click [OK]. When you are using NetWare 5, click "Print Server (Non NDPS)".
 - 3 In the [Print Server name] box, type the name of the print server.

Important

- Use the same name as that specified using the NIB Setup Tool. (Step 8)

- 4 Click [Define additional properties] to check a box, and click [Create].

- 16** Assign the printer to the created print server as follows.
- 1 Click [Assignments], and click [Add] in the [Assignments] group.
 - 2 In the [Available objects] box, click the printer created in step 13, and click [OK].
 - 3 After confirming the settings, click [OK].

- 17** Turn the printer power off and on.

Note

- If the printer works as configured, the name of the print server appears as an attached user.

Using Pure IP in the NetWare 5 environment

- 1 Log on to the file server as an Admin or an Admin equivalent.
- 2 Run the NIB Setup Tool.

Reference

⇒ P.48 "Running the NIB Setup Tool"

- 3 Click [Property Sheet] and click [OK].
The [Network board list] dialog box appears.

4 Click [TCP/IP protocol].

5 Click the IP address of the Network Interface Board which is to be configured, and click [Next >].

 **Note**

- If you do not know which Network Interface Board you are configuring, see a network configuration page to confirm the MAC address (Network Address).

6 Confirm that the MAC address and IP address are correct, and click [Finish].
The [NIB Setup Tool] window appears.

7 Click [Configure].

The property sheet appears.

8 Click the [General] tab, and type the name of the print server into the [Device Name:] box.

9 Click the [NetWare] tab, and make the following settings.

- 1** In the [Print Server Name:] box, type the name of the print server.
- 2** In the [File Server Name:] box, type the name of the file server in which a print server is to be created.
Clicking [Browse], you can select a file server among those listed in the [Browse File Server] dialog box.
- 3** In the [NDS Context:] box, type the context of the print server.

Clicking [Browse], you can select a NDS tree and a NDS context among those listed in the [Browse Context] dialog box.

As a context, object names are typed from a lower object and divided by a period. For example, if you want to create a print server into NET under DS, type "NET.DS".



4 In the [Print Server Operation Mode] group, click [As Print Server].

5 Click [OK] to close the property sheet.

6 After a confirmation dialog box appears, click [OK].

10 On the [NIB] menu, click [Exit] to exit the NIB Setup Tool.

After this step, go to step **11** on P.59 "Setting Up as a Print Server".

Setting Up as a Remote Printer

1 Log on to the file server as an Admin or an Admin equivalent.

2 Run the NIB Setup Tool.

 **Reference**

⇒ P.48 "Running the NIB Setup Tool"

3 Click [Property Sheet] and click [OK].

The [Browse] dialog box of the Network Interface Board appears.

4 Click [IPX protocol].

5 Click the IPX address of the Network Interface Board which is to be configured, and click [Next >].

 **Note**

- If you do not know which Network Interface Board you are configuring, see a network configuration page to confirm the MAC address (Network Address).

6 Confirm that the MAC address and IPX address are correct, and click [Finish].

The [NIB Setup Tool] window appears.

7 Click [Configure].

The property sheet appears.

8 Click the [General] tab, and type the name of the print server into the [Device Name] box.

9 Click the [NetWare] tab, and make the following settings.

1 In the [Print Server Name] box, type the name of the print server.

2 In the [File Server Name] box, type the name of the file server in which a print server is to be created.

Clicking [Browse], you can select a file server among those listed in the [Browse] dialog box.

3 In the [NDS Context] box, type the context in which the print server is to be created.

Clicking [Browse], you can select a context among those listed in the [Browse] dialog box.

As an context, object names are typed from a lower level object and divided by a period. For example, if you want to create a print server into NET under DS, type "NET.DS".



- 4 In the [Print Server Operation Mode] group, click [As Remote Printer].
- 5 In the [Remote Printer No.] box, type the number of the printer.

Important

- Use the same number as that of the printer to be created in the print server.

- 6 Click [OK] to close the property sheet.
- 7 After a confirmation dialog box appears, click [OK].

10 On the [NIB] menu, click [Exit] to exit the NIB Setup Tool.

11 From Windows, run NW Admin.

Reference

For more information about NWAdmin, see the documentation that comes with the NetWare.

12 Create a print queue as follows.

- 1 Select the container object the print queue is located in among those in the directory tree, and click [Create] on the [Object] menu.
- 2 In the [Class of new object] box, click "Print Queue", and click [OK].
- 3 In the [Print Queue name] box, type the name of the print queue.
- 4 In the [Print Queue Volume] box, click [Browse] button.
- 5 In the [Available objects] box, click the volume in which the print queue is created, and click [OK].
- 6 After confirming the settings, click [Create].

13 Create a printer as follows.

- 1 Select the container object the printer is located in, and click [Create] in the [Object] menu.
- 2 In the [Class of new object] box, click "Printer", and click [OK]. When you are using NetWare 5, click "Printer (Non NDPS)".
- 3 In the [Printer name] box, type the name of the printer.
- 4 Click [Define additional properties] to check a box, and click [Create].

14 Assign print queues to the created printer as follows.

- ❶ Click [Assignments], and click [Add] in the [Assignments] group.
- ❷ In the [Available objects] box, click the queue created in step 12, and click [OK].
- ❸ Click [Configuration], and in the [Printer type] box, select [Parallel] using the drop-down menu, and then click [Communication].
- ❹ Click [Manual load] in the [Communication type] group, and click [OK].
- ❺ After confirming the settings, click [OK].

15 Create a print server as follows.

- ❶ Select the context specified using the NIB Setup Tool (Step 9-1), and on the [Object] menu, click [Create].
- ❷ In the [Class of new object] box, click "Print Server", and click [OK]. When you are using NetWare 5, click "Print Sever (Non NDPS)".
- ❸ In the [Print Server name] box, type the name of the print server.

Important

- Use the same name as that specified using the NIB Setup Tool. (Step 8).

- ❹ Click [Define additional properties] to check a box, and click [Create].

16 Assign the printer to the created print server as follows.

- ❶ Click [Assignments], and click [Add] in the [Assignments] group.
- ❷ In the [Available objects] box, click the queue created in the step 15, and click [OK].
- ❸ In the [Printers] group, click the printer assigned in step 2, and click [Printer Number].
- ❹ Type the printer number and click [OK].

Important

- Use the same number as that specified as Remote Printer No. using the NIB Setup Tool. (Step 9-5).

- ❺ After confirming the settings, click [OK].

17 Start the print server by typing the following from the console of the NetWare Server.

If it is running, restart it after exiting it.

❖ To exit

```
CAREE: unload pserver
```

❖ To start

```
CAREE: load pserver print_server_name
```

Setting Up a Client Computer

This section describes how to set up a client computer when using a NetWare print server.

Note

- This section assumes that the client has NetWare client applications installed and is correctly configured to communicate with a NetWare print server. If not, install the necessary applications before starting the setting up procedure.

Windows 95/98

4

Follow the procedure to set up a Windows 95/98 client.

Preparation

Log on to the NetWare file server before starting the following procedure.

1 Install the printer driver you want to use as “Local printer”.

Reference

For more information about installing the printer driver, see the "Setup Guide" that comes with the printer.

Note

- Any port can be selected during the installation, however, LPT1 is recommended.

2 Click [Start], point to [Settings], and then click [Printers].

3 In the [Printers] window, click the icon of the printer you want to use.

4 On the [File] menu, click [Properties].

5 Click the [Details] tab, and click [Add Port].

6 Click [Network] and click [Browse].

7 On the network tree, double-click the name of the file server.

The queues are displayed.

8 Click the queue you want to print, and click [OK].

9 Click [OK].

In the [Print to the following port] box, a network path to the printer appears.

10 Click [OK] to close the Printer Properties, and again, open it.

- 11** Click the [Printer Settings] tab.
- 12** Click to clear the [Form feed] and [Enable banner] check boxes.

 **Note**

- You should not check these boxes because they should be specified using the printer driver. If they are selected, the printer might not print correctly.

When using the PostScript printer driver

Follow these steps to set up for the PostScript printer driver.

- 1** Click the [PostScript] tab.
 - 2** Click [Advanced].
 - 3** Click to clear the [Send CTRL+D before job] and [Send CTRL+D after job] check boxes.
- 13** Click [OK] to close the Printer Properties.

Windows 2000

Follow the procedure to set up a Windows 2000 client.

 **Preparation**

Log on to the NetWare file server before starting the following procedure.

- 1** Double-click the [My Network Places] icon on the desktop and navigate to the queue you want to use, and then double-click it.
The printers dialog box appears.
- 2** Click [No].
- 3** Close all the applications that are currently running.
- 4** Insert the CD-ROM into the CD-ROM drive.
If the setup menu starts automatically, you can go to the next step. If not, see the "Setup Guide" that comes with the printer.
- 5** The [Printer Installation] dialog box appears.
- 6** From the [Port] list, select the queue you selected in step **1**, and click [Next >].
- 7** Follow the instructions on the screen to finish the installation of the printer driver.

Windows NT 4.0

Follow the procedure to set up a Windows NT 4.0 client.

Preparation

Log on to the NetWare file server before starting the following procedure.

- 1** Double-click the **[Network Neighborhood]** icon on the desktop and navigate to the queue you want to use, and then double-click it.

The **[Printers]** dialog box appears.

- 2** Click **[No]**.

- 3** Close all the applications that are currently running.

- 4** Insert the CD-ROM into the CD-ROM drive.

If the setup menu starts automatically, you can go to the next step. If not, see the "Setup Guide" that comes with the printer.

- 5** The **[Printer Installation]** dialog box appears.

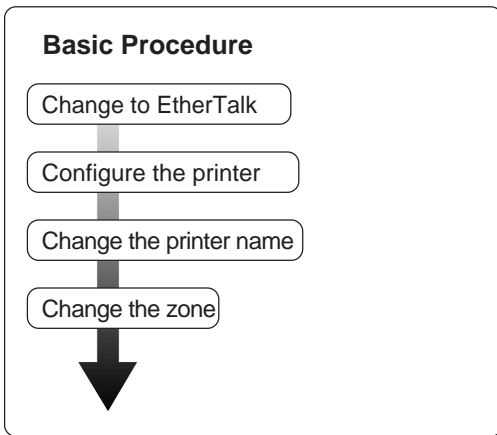
- 6** From the **[Port]** list, select the queue you selected in step **1**, and click **[Next >]**.

- 7** Follow the instructions on the screen to finish the installation of the printer driver.

5. Macintosh Configuration

Configuring Macintosh

This section describes how to configure a Macintosh computer to use EtherTalk. The actual procedures to configure a Macintosh may differ depending on the version of the Mac OS. The following procedure describes how to configure Mac OS 8. If you are not using Mac OS 8, see the manual that comes with your version of the Mac OS for more information.



! Limitation

- To print from a Macintosh, use RICOH-SCRIPT2. You cannot print with IPDL-C.

Changing to EtherTalk

Follow the procedure to configure a Macintosh computer to use EtherTalk.

🔍 Reference

For more information about installing the software required for EtherTalk, see the Macintosh manuals.

- 1** Open [Control Panel], and double-click the [AppleTalk] icon.
- 2** From the [Connect via:] pop-up menu, select "Ethernet".
- 3** If you change zones, select a name from the [Current zone:] pop-up menu.
- 4** Close the [AppleTalk] control panels.
- 5** Restart the Macintosh.

Configuring the Printer

Use the operation panel to activate the EtherTalk protocol. (The factory default is active.)

Reference

For more information about configuration, see the "Setup Guide" that comes with the printer.

Changing the Printer Name

If the network has several same model printers, the names will be the same. Printers that have the same name will have their names changed slightly in the Chooser. For example, three printers named "printer" will appear in the chooser as "printer0", "printer1" and "printer2".

Use applications such as Apple Printer Utility or LaserWriter Utility to change printer names in the Macintosh EtherTalk environment. These utilities are distributed by Apple Computer, Inc.

5

Changing the Zone

It may be necessary to change the zone configuration.

Use applications such as Apple Printer Utility or LaserWriter Utility to change the zone configuration in the Macintosh EtherTalk environment. These utilities are distributed by Apple Computer, Inc.

Note

- ❑ If the Macintosh is configured to use TCP/IP, you can change the zone configuration with a Web Browser. ⇒ P.73 *"Configuring the Network Interface Board with a Web Browser"*

Follow these steps to use the Apple Printer Utility.

- ① Insert the CD-ROM into the CD-ROM drive.
- ② Copy the "Zone Name.ps" file in the "Zone Name" folder to the hard disk.
- ③ Open the copied "Zone Name ps" file using a text editor, and change "New-Zone", which is in the second line from the bottom, to the name of the new zone.

```
%!PS-Adobe2.0 %%
Title: Changing Zone (EtherNet only)
%%CreationDate: Tue Dec 16 1997
%%EndComments
true 0 startjob not {ERROR}if
(%EtherTalk%) << /EtherTalkZone (NewZone) >> setdevparams
%%EOF
```

- ④ Save "Zone Name.ps".

- ⑤ Run the Apple Printer Utility, and select the printer for which the new zone name is to be used.
- ⑥ Select **[Send PostScript File]** in the **[Utilities]** menu, and send “Zone Name.ps” to the printer.

Configuring the Network Interface Board with a Web Browser

The Network Interface Board functions as a Web server in addition to allowing a printer to function as a network printer. You can use a Web Browser to view the printer status and configure the Network Interface Board.

❖ Configuring the printer

This requires the TCP/IP protocol to be installed. After the printer has been configured to use the TCP/IP protocol, it will be possible to adjust the settings using a Web Browser.

Reference

For more information about configuring the printer to use the TCP/IP protocol, see the "Setup Guide" that comes with the printer.

❖ Operating system browser requirements

OS	Browser
Windows 95/98	Microsoft Internet Explorer 3.02/4.0/5.0 Netscape Navigator 3.0/4.0
Windows NT 4.0	
Windows 2000	
Mac OS 7.6.1 ~ 9.0	
Solaris 2.5 ~ 2.6	

Limitation

- Sometimes after clicking [**Back**], the previous page may not appear. In this case, click [**Refresh**] or [**Reload**].
- The text on the screen may disappear or be aligned incorrectly if the font size settings of the browser are too large. It is recommended that you use a font size equal to or smaller than "10 point" with Netscape Navigator, and "Medium" or smaller with Internet Explorer.

Going to the Top Page

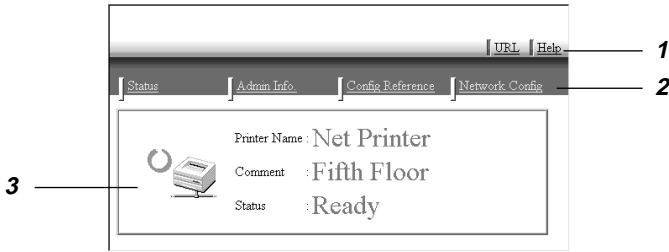
After launching the Web Browser, type the IP address of the printer. See the example below. This example is for the English version.

`http://192.168.15.16/`

(In this example, the IP address of the Network Interface Board is 192.168.15.16.)

Note

- ❑ If a DNS server is used on the network, you can type the host name as an URL. For example, `http://webmonitor.netprinter.com/`. In order to do this, you must register the IP address and host name of the Network Interface Board with the DNS server. Consult the network administrator for information about how to do this.
- ❑ If the network uses proxy servers, the browser may run slowly.



1. Header Buttons

You can register favorite URLs with **[URL]**. To view the Help section, click **[Help]**.

3. Status

Displays the name and comments of the Network Interface Board, and the printer status.

Important

- ❑ It costs to use the browser to access a website.

Note

- ❑ Help is stored on the CD-ROM in HTML format.

2. Menu Buttons

Buttons to configure the Network Interface Board and confirm the status of the printer.

Note

- ❑ When you click **[Network Config]**, a dialog box appears requesting the user name and password. Type only the password in this dialog box. The factory default password is "password".
- ❑ The password is the same as that used for remote maintenance and that used in the NIB Setup Tool. If you change a password with the Web Browser, the other passwords are also changed.

 **Linking the address (URL) to the [Help] button**

You can link the address (URL) of the **[Help]** button to the Help files on the computer or on a Web server.

- ① Copy the Help files on the CD-ROM to the desired location. The Help files are located in folders labeled with abbreviated language names. For example, English Help files are in the **[EN]** folder. Be sure to copy the entire **[EN]** folder to the new location.
- ② Using a Web Browser, navigate to the Top Page and click **[Network config]**.
- ③ Type your password, (it is not necessary to type a user name) and click **[OK]**.
- ④ Type the path to the Help files in the **[Help URL]** box.
If you copied the Help files to "C:\HELP\EN", type "file:///C:/HELP/". For example if you copied the files to a web server and the index URL is "http://a.b.c.d/HELP/EN/index.html", type "http://a.b.c.d/HELP/".
- ⑤ Click **[Apply]**.
When a warning message appears, select to continue configuration.

Assigning IP Address with ARP+PING

Using TCP/IP, you can assign the IP address using ARP and PING. The following example is for a BSD UNIX workstation (SunOS 4.x).

Preparation

ARP+PING should be set to active on the network boot configuration before assigning the IP address using ARP+PING. For more information about setting it to active, see the "Setup Guide" that comes with the printer.

1 Log on to the workstation as root.

2 Use the `arp` command to assign the IP address to the MAC address of the Network Interface Board.

```
# arp -s 192.168.15.16 00:00:74:62:5C:65
```

Note

192.168.15.16 is the IP address, 00:00:74:62:5C:65 is the MAC address.

3 Assign the IP address using the `ping` command.

```
# ping 192.168.15.16
```

4 Use the `ping` command again to confirm the address.

```
# ping 192.168.15.16
```

If the address has been configured correctly, the following message appears.

```
192.168.15.16 is alive
```

If the address has been configured incorrectly, the following message appears.

```
no answer from 192.168.15.16
```

How to Confirm the MAC Address

The MAC address (Ethernet address) of the Network Interface Board is required in order to use ARP and PING to assign the IP address.

The MAC address can be seen on the printer configuration page.

Reference

For more information about printing a configuration page, see the "Setup Guide" that comes with the printer.

Remote Maintenance by telnet

You can view the printer status and configure the Network Interface Board using telnet.

Note

- You should specify a password so that only the network administrator, or a person having network administrator privileges, can use remote maintenance.

Using telnet

The following is a sample procedure in using telnet.

Limitation

- Only one person at a time can be logged on to do remote maintenance.

1 Using the IP address or host name of the printer, start telnet.

```
% telnet IP_address
```

Note

- In order to use the host name instead of the IP address, you must write it to the `/etc/hosts` file.

2 Type the password.

Note

- The factory default is "password".

3 Type a command.

Reference

For more information about telnet commands, see P.78 "Commands List".

4 Exit telnet.

```
msh> logout
```

When the configuration is changed, a confirmation message requests whether or not the changes should be saved.

5 Type "yes" to save the changes, and press the **[ENTER]** key.

If you do not want to save the changes, type "no" and press the **[ENTER]** key. If you want to make additional changes, type "return" at the command line, and press the **[ENTER]** key.

 **Note**

- If the “Can not write NVRAM information” message appears, the changes are not saved. Repeat the steps above.
- The Network Interface Board is reset automatically when the settings are changed.
- When the Network Interface Board is reset, the active print job which has already been sent to the printer will finish printing. However, jobs that have not been sent yet will be canceled.

Commands List

This is a list of commands that can be used via remote maintenance.

 **Note**

- Type “help” to see a list of commands that can be used.
`msh> help`
- Type “help command_name” to display information about the syntax of that command.
`msh> help command_name`

TCP/IP address

Use the `ifconfig` command to configure TCP/IP for the printer (IP address, subnet mask, broadcast address, default gateway address).

❖ Reference

```
msh> ifconfig
```

❖ Configuration

```
msh> ifconfig le0 parameter address
```

Parameter	Meaning
(no parameter)	IP address
netmask	subnet mask
gateway	default gateway address

The following is an example for configuring an IP address of 192.168.15.16.

```
msh> ifconfig le0 192.168.15.16
```

The following is an example for configuring a subnet mask of 255.255.255.0.

```
msh> ifconfig le0 netmask 255.255.255.0
```

 **Note**

- This affects the configuration of the Network Interface Board of the IP address that is used.
- To type an address using hexadecimal, prefix it by “0x”.

 **Address**
❖ Subnet Mask

A number used to mathematically “mask” or hide the IP address on the network by eliminating those parts of the address that are alike for all the machines on the network.

❖ Default Gateway Address

A gateway is a connection or interchange point that connects two networks. A gateway address is for the router or host computer used as a gateway.

 **Note**

- To get the above addresses, contact your network administrator.

Access Control

Use the access command to view and configure access control.

❖ Reference

```
msh> access
```

❖ Configuration

```
msh> access parameter address
```

Parameter	Meaning
control	Access Control Address
mask	Access Control Mask

 **Note**

- The Access Control Address and the Access Control Mask are used to limit access to the computer used for printing by denying access to users based on their IP address. If it is not necessary to limit access, set the Access Control Mask to “0.0.0.0”.
- When the Access Control Address matches the masked result of the IP address computer attempting to print, print jobs from that IP address will be accepted by the Network Interface Board.

- ❑ For example, if you assign 192.168.15.16 as the Access Control Address of the Network Interface Board, the IP addresses that can print are as follows. XXX means any number from 1 to 255 is acceptable.

Access Control Mask	IP addresses that can access the printer
0. 0. 0. 0	XXX.XXX.XXX.XXX
255. 0. 0. 0	192.XXX.XXX.XXX
255.255. 0. 0	192.168.XXX.XXX
255.255.255. 0	192.168. 15.XXX
255.255.255.255	192.168. 15. 16

Network Boot

Use the set command to configure the boot method.

```
msh> set parameter {on | off}
```

“on” means active and “off” means inactive.

6

Parameter	Meaning
ping	ARP+PING
tftp	RARP+TFTP
bootp	BOOTP
dhcp	DHCP

 **Note**

- ❑ When you use RARP+TFTP, BOOTP or DHCP, the server also needs to be configured.
- ❑ DHCP takes precedence over all other settings.

Protocol

Use the set command to allow/prevent remote access for each protocol.

```
msh> set protocol {up | down}
```

Protocol	
appletalk tcpip netware netbeui lpr ftp rsh diprint web npmp snmp ipp	“up” means active and “down” means inactive.

Note

- If you prohibit remote access using TCP/IP and then log out, you cannot use remote access. If this was a mistake, you can use the printer operation panel to allow access by TCP/IP.
- When you prevent access via TCP/IP, you are also prevented from using lpr, ftp, rsh, diprint, and web.

Printer status

The following commands can be used to get information about the current status of the printer.

```
msh> command
```

Command	Information that is displayed
status	Status of printer. Information about the print jobs.
info	Information about the paper tray, output tray, emulation and program of printer.
prnlog [ID]	Lists the last 10 print jobs.
netstat	Information about the Network Interface Board.

 **Note**

- ❑ More information about any print job is displayed when the ID number is added after the `prnlog` command.

 **Reference**

For more information about the meaning of the data returned with these commands, see P.90 *“Configuring the Network Interface Board”*.

Network Interface Board configuration settings information

Use the `show` command to display the Network Interface Board configuration settings.

```
msh> show [-p]
```

 **Note**

- ❑ Add `“-p”` to the `show` command to have the information displayed one screen at a time.

 **Reference**

For more information about the meaning of the data returned with this command, see P.90 *“Configuring the Network Interface Board”*.

6

System log information

Use the `syslog` command to display information stored in the printer's system log.

```
msh> syslog
```

 **Reference**

For more information about the displayed information, see P.93 *“System Log Information”*.

SNMP

Use the `snmp` command to display and edit SNMP configuration settings such as the community name.

 **Note**

- ❑ You can configure from ten SNMP access settings numbered 1–10.
- ❑ Default access settings 1 and 2 are as follows.

Number	1	2
Community name	public	admin
IP address	0.0.0.0	0.0.0.0
Access type	read-only trap off	read-write trap off

❖ Display

Shows the SNMP information and available protocols.

```
msh> snmp ?
msh> snmp [-p] [registered_number]
```

Note

- If the -p option is added, you can view the settings one by one.
- Omitting the number displays all access settings.

❖ Community name configuration

You can set the community name of the Network Interface Board.

```
msh> snmp number name community_name
```

Note

- The community name must consist of 15 characters or less.

❖ Access type configuration

You can select the access type from those listed below.

```
msh> snmp number type access_type
```

Access type	Type of access which is permitted
read	Read only
write	Read and write
trap	User is notified of trap messages.
no	All access is denied.

❖ Protocol configuration

You should use the following command to set the protocols to active or inactive. If you set a protocol to inactive, all access settings set to use that protocol are disabled.

```
msh> snmp {ip | ipx} {on | off}
```

- “on” means active and “off” means inactive

To change the protocol of an access settings, use the following command. However, if you disabled a protocol with the above command, making it active here will have no effect.

```
msh> snmp number active {ip | ipx} {on | off}
```

❖ Access configuration

You can configure an address of a host depending on the protocols used.

The Network Interface Board accepts requests only from hosts having addresses with access types of “read-only” or “read-write”. Type “0” to have the Network Interface Board accept requests from any host without requiring a specific type of access.

Command syntax:

```
msh> snmp number {ip | ipx} address
```

 **Note**

- ❑ To specify the TCP/IP protocol, type `ip` followed by a space and then the IP address.
- ❑ To specify the IPX/SPX protocol, type `ipx` followed by a space and then the IPX address followed by a decimal and then the MAC address of the Network Interface Board.

The following is an example of how to configure registration number 3 with the IP address 192.168.15.16.

```
msh> snmp 3 ip 192.168.15.16
```

The following is an example of how to configure registration number 3 with the IPX address 7390A448, and the MAC address 00:00:74:62:5C:65.

```
msh> snmp 3 ipx 7390A448.000074625C65
```

IPP

Use the `ipp` command to configure the IPP settings.

❖ Viewing setting

The following command displays the current IPP settings.

```
msh >ipp
```

Example output:

```
timeout=900(sec)
auth basic
```

- The "timeout" setting specifies how many seconds the computer keeps trying to access the network printer to send print jobs when no connection could be made.
- The "auth" setting indicates the user authorization mode.

❖ IPP timeout configuration

Specify how many seconds to wait before canceling a print job if it has been interrupted for some reason. The range of time can be changed between 30 to 65535 seconds.

```
msh>ipp timeout {30 -65535}
```

❖ IPP user authorization configuration

Use the IPP user authorization to restrict users that can print with IPP. The factory default is "off" .

```
ipp auth {basic|digest|off}
```

- "basic" and "digest" are user authorization setting.
- "off" removes a user's authorization.

 **Note**

- ❑ If you select "basic" or "digest", see next section "Entry the IPP User Authorization" for how to configure the user name. Up to ten user names are available.

❖ Configuring IPP user authorization

Use the following command:

```
ipp user
```

The following message appears.

```
Input user number (1 to 10):
```

Type the number, user name and password.

```
IPP user name:user1
```

```
IPP password:*****
```

After configuring the settings, the following message appears.

```
User configuration changed.
```

Changing the password

Use the passwd command to change the remote maintenance password.

Important

- Be sure not to forget or lose the password.

Note

- The default factory password is “password”.

1 Type “passwd”.

```
msh> passwd
```

2 Type the current password.

```
Old password:
```

3 Type the new password.

```
New password:
```

Note

- The password must consist of 3 to 8 alphanumeric characters and symbols. Upper and lower case characters are considered unique. For example, R is different from r.
- The password is the same as that used in the configuration of the Network Interface Board using a Web Browser and that used in the NIB Setup Tool. If you change a password from telnet, the other passwords are also changed.

4 Type the new password once again.

```
Retype new password:
```

SNMP

The Network Interface Board functions as a SNMP (Simple Network Management Protocol) agent using the UDP and IPX protocols. Using the SNMP manager you can get information about the printer.

The factory default community names are “public” and “admin”. You can get MIB information using these community names.

Reference

For more information about configuring the community name, see P.82 “SNMP” in “Remote Maintenance by telnet”.

Limitation

The kinds of supported MIBs differ depending on the printer.

Supported MIBs

- MIB-II
- PrinterMIB
- HostResourceMIB
- RicohPrivateMIB

Understanding the Displayed Information

This section describes how to read status information returned by the Network Interface Board.

Print Job Information

The status of the print job can be viewed using the following commands.

- telnet : Use the status command. ⇒ P.81 “Printer status”

Item name	Meaning
ID	Print request ID.
Source	The name of the host requesting the print job.
Process	The type of print command.
Status	Status of print job. <ul style="list-style-type: none">• Active Printing or preparing for printing.• Waiting Waiting to be transferred to the printer.
Time	The time when the print request was received.

Print Log Information

This is a record of the most recent ten jobs that have been printed.

This log can be displayed with the following commands.

- telnet : Use the prnlog command. ⇒ P.81 “Printer status”

Item name	Meaning
ID	Print request ID.
Source	The user name, workstation name or address of the host that sent the print job.
Process	The type of print command used.
Bytes	The size of the file in bytes.
Result	Communication result. <ul style="list-style-type: none"> • OK Indicates that the print job was completed correctly. • NG Indicates that the print job was not completed normally. • Canceled rnp, rsh or lpr print commands were stopped. A problem occurred with the printing application. This message doesn't appear when ftp or RPRINTER is used.
Time	The time when the print request was received.
User Code	The user name, workstation name or address of the host that sent the print job.
Address	IP address.
Process	The type of print command used.
Print Start Time	The time the print process was started.
Print End Time	The time the print process was completed.
Open Count	The number of print processes that the application made.
Eof Count	The reception number of file unit.
Data Size	The number of bytes of received data.

Network Statistical Information

Use the following command to view Network Interface Board network statistics. Detailed information about the words used to describe the status of the Network Interface Board are described below.

- telnet : Use the info command. ⇒ P.81 “Printer status”

Item name	Meaning
System elapsed time	The time that has passed since the Network Interface Board started.
Total printing time	The total time spent in processing the print data.
Total open count	The total open (printing process) count that the application required.
Current connection count	The current number of open connections with the Network Interface Board.
Total connection count	The total number of print jobs sent to the Network Interface Board.
Print error count	The number of times the printing process sent an error message.
Access error count	The number of times the connection was refused because of the access control value.
Print request full count	The number of times a connection was refused because the number of print requests exceeded the number of allowed sessions.

Item name	Meaning
TCP/IP Mode ftp lpr rsh diprint web telnet download EncapType Network boot Filter Max DSTs Address Netmask Broadcast Gateway AccessCtrl AccessMask Time server Home page URL Home page link name Help page URL SNMP protocol	Up means active, Down means inactive. Frame type. Network boot. Internal parameter. IP address. Subnet mask. Broadcast address. Default gateway address. Access control address. Access control mask. URL of homepage. URL name of homepage. URL of help page. Protocol used with SNMP.
NetWare Mode EncapType RPRINTER number RPRINTER name Print server name Fileservername Context name Switch Mode NDS/Bindery Packet negotiation Print job timeout	(this value is fixed) Frame type. Remote printer number. Remote printer name. Print server name. Name of the connect file server. Context of print server. Active mode. (this value is fixed) Time of the job timeout.

Item name	Meaning
NetBEUI	
Mode	(this value is fixed)
Switch	
Mode	(this value is fixed)
Direct print	(this value is fixed)
Notification	Notification of print job completion.
Workgroup name	Name of the workgroup.
Computer name	Name of the computer.
Comment	Comment.
Share name[1]	Share name (name of the printer type).
Shell mode	Mode of remote maintenance tool.

Message List

This is a list of messages written to the printer's system log. The system log can be viewed using the syslog command.

System Log Information

You can use the following methods to view the system log.

- telnet : Use the syslog command. ⇒ P.82 *"System log information"*

Message when the Network Interface Board starts or restarts

Network Interface Board Ver.x.x.x	The version number of the Network Interface Board.
PRINTER SYSTEM "system name" Ver.x.x.x	The system name and version of the printer.
Attach FileServer="file server name"	The printer is attached to "file server name" as the nearest server.
Current Interface Speed:xxxMbps	The speed of the network (10 Mbps or 100 Mbps).
Current IPX address	The current IPX address.
Frametype="frame type name"	The "frame type name" is configured to be used on NetWare.
NetBEUI Computer Name="computer name"	The NetBEUI Computer Name is defined as "computer name".
Start httpd	The Web server has been started.
Start npmpd for IPX	The npmpd for IPX protocol has been started.
Start npmpd for TCP/IP	The npmpd for TCP/IP protocol has been started.
Start smbd direct print mode(NetBEUI)	You can print from a client on the Windows network via the print server.
Start snmpd Ver.2.0	The SNMP agent of the displayed version has been started.
Vendor= , Country= , Lang=	The vendor, the country code, and the language.

NetWare (When the Network Interface Board is started)

❖ **When working as a print server**

Access to NetWare server "file server name" denied. Either there is no account for this print server on the NetWare server or the password was incorrect.	Cannot log in to the file server. Confirm that the print server is registered on the file server. If a password is specified for the print server, delete it.
Attach to print queue "print queue name"	Attached to the print queue.
File server is empty	The file server is not registered. Register your file server using the utility.
Login to fileserver "file server name" ("NDS BINDERY")	Logged in to the file server with NDS or BINDERY mode.
Open log file "file name"	The specified log file has been opened.
Printer "printer name" has no queue	The print queue is not assigned to the printer. Using NWAdmin, assign the print queue to the printer, and then restart it.
Print queue "print queue name" cannot be serviced by printer 0, "print server name"	Print services are not available for the print queue. Confirm that the volume of the print queue exists on the specified file server.
The print server received error "error number" during attempt to log in to the network. Access to the network was denied. Verify that the print server name and password are correct.	Cannot log in to the file server. The print server is not registered or the password is specified. Register the print server without specifying a password.

❖ When working as a remote printer

Cannot create service connection	Cannot establish a connection with the file server. Your request may exceed the maximum number of connections that the file server can deal with at a time.
Cannot find rprinter ("print server name"/"printer number")	The printer having the number displayed on the print server does not exist. Confirm the number of the printer registered to the print server.
Establish a connection with the print server, "print server name"	A connection with the print server has been established.
No local target for "print server name"	Cannot get routing information about the file server. If a different frame type is configured from that used on the network, you should select "Auto Select" as a frame type.
Required file server ("file server name") not found	Cannot find the required file server.
Required print server ("print server name") not found	Cannot find the print server. Confirm the name of the print server.
Unable to attach to print server ("print server name")	Cannot connect to the print server. The print server refuses a connection for some reason. Confirm the configuration of the print server.

NetBEUI (When the Network Interface Board is started)

Back to default name (<Computer name>)	The same computer name is detected on the network. As unable to add computer name to the suffix, Computer name back to default name. Configure a new computer name that is unique.
Print session full	Cannot accept the print session.
Required computer name (<Computer name>) is duplicated name	The same computer name is detected on the network. The start job determines the computer name by adding the computer name to the suffix (0,1,...). Configure a new computer name that is unique.

TCP/IP

❖ **When the address is configured**

Invalid gateway address	The gateway address is not correct for the specified IP address.
-------------------------	--

❖ **When using lpr**

filter data error	Some data cannot be handled by the filter option. Confirm the file code and the settings of the filter option.
lost connection	The connection was cut by the other party. Check the printer to which you requested to print.
print requests full	Cannot accept the print request (max. 5 sessions). Confirm the status of the printer with telnet, and print it again after the print request becomes less than 5 sessions.
printer permission denied	Cannot get permission to use the printer. Confirm the access rights with the access control address and the access control mask.
printer refuse	Something is wrong with the printer. Confirm the status of the printer.

At the beginning of the message, the IP address of the client is displayed within parentheses.

❖ When using rsh, rcp, ftp

Can't build data connection: "message"	Cannot establish a connection for data transfer due to the displayed error. Check the ftp of the workstation that requested the print job, and start it again. When using ftp, this message remains only on the system log information.
cmd_name:Command not supported	The remote shell command using cmd-name is not supported. You should use only the print, stat, status, syslog, info, and prnlog commands. You should access the printer only with rsh and rcp remote shell commands.
command line too long	The command line is too long.
file_name:No such file or directory	You must use a file name with the stat, status, syslog, info, prnlog, and install commands.
filter data error	Some of the data cannot be handled with the filter option. Confirm the file code and the settings of the filter option.
get log busy	Another machine is getting the log information. You should get it afterwards.
lost connection	The connection was cut by a counterpart. Check the ftp of the workstation that requested the print job, and start it again. When using ftp, this message remains only on the system log information.
no more ftp execute	More than three users at a time cannot log in using ftp. Since there are three other users that have already logged in, wait until the job is finished.
print requests full	Cannot accept the print request.(max. five sessions) Confirm the status of the printer with lpq, rsh, rcp, and ftp commands, and print it again after the number of print requests (sessions) becomes less than five.
printer busy	Cannot get the printer information. Another user may be accessing it. Wait a few minutes before trying again.
printer permission denied	Cannot get a permission to use the printer. Confirm the access right with the access control address and the access control mask.
printer refuse	Something is wrong with the printer. Confirm the status of the printer.

At the beginning of the message, the IP address is displayed in parentheses.

❖ When using SNMP

Exit snmpd	The agent is complete. Reset the printer or turn the printer off and on.
recvfrom:packet discarded,length(Reception packet length)> (Packet size),from addr <Address of partner point>	The received packet was ignored since the length of the packet exceeds the limit. Confirm whether the administration station sent a packet is longer than 1025 bytes.
session <Community name appointed> not defined	The community name of the received packet is not defined. Confirm that the community name of the administration station is the same as that specified for the printer.
snmpin:Bad use of session <community Name> from <Address>	The community name of the received packet is not the same as that of the administration station. Confirm the community name specified to the printer.
snmpin:error in snmpdecipher,code (<Error No.>)	An error occurred with the received packet. Check if the number of the objects sent from the administration station is more than 31 and if there are wrong MIB requests.
snmpin:error in snmpsendsend,code (<Error No.>)	Cannot send a response packet. Normally, this message is followed by the messages below *1 *2.
snmpin:pkt too large,code (<Error number>)*1	The response packet to the request is too big to send. Reduce the number of the objects per request.
snmpin:error in sending too large request back,code (<Error number>),giving up*2	The packet notifying the error is too big to send. Reduce the number of the objects per request.
snmpin:received bad version	The version of the received packet is invalid. Confirm that the version of the administration station is version-1(0).

Error numbers in the messages are codes for internal use.

Precautions

Please pay attention to the following when using the Network Interface Board. When configuration is necessary, follow the appropriate procedures below.

Connecting a Dial Up Router to a Network

When the NetWare file server and the printer are on the opposite side of a router, packets are continuously sent back and forth, possibly causing communications charges to increase. Because the packet transmission is a specification of NetWare, you need to change the configuration of the router. If the network you are using does not allow you to configure the router, configure the printer.

Configuring the router

Filter the packets so that they do not pass over the dial up router.

 **Note**

- The MAC address of the printer doing the filtering is printed on the printer configuration page. For more information about printing a configuration page, see the "Setup Guide" that comes with the printer.
- For more information about configuring the printer if the router cannot be configured, see the instructions below.

Configuring the printer with NetWare

- 1** Following the setup method in this manual, configure the file server.
- 2** Set the frame type for a NetWare environment.

 **Reference**

For more information about selecting a frame type, see the "Setup Guide" that comes with the printer.

Configuring the printer without NetWare

- 1** While not printing, the Network Interface Board sends packets on the network. Set the NetWare to inactive.

 **Reference**

For more information about selecting a protocol, see the "Setup Guide" that comes with the printer.

PostScript Printing from Windows

When printing PostScript from Windows, see the “Operating Instructions” for RICOH-SCRIPT2 that comes with the printer for how to configure the Network Interface Board and printer driver.

NetWare Printing

Form Feed

You should not configure the form feed on NetWare. The form feed is controlled by the printer driver on Windows. If the NetWare form feed is configured, the printer might not print properly. If you want to change the form feed setting, always configure it on Windows.

- With Windows 95/98, clear the **[Form feed]** check box on the **[Printer Settings]** tab in the printer properties dialog box.
- With Windows 2000, clear the **[Form feed]** check box on the **[Neware Settings]** tab in the printer properties dialog box.
- With Windows NT 4.0, clear the **[Form feed]** check box on the **[Neware Settings]** tab in the printer properties dialog box.

Banner Page

You should not configure a banner page on NetWare. If you want to change the banner page setting, always configure it on Windows.

- With Windows 95/98, clear the **[Enable banner]** check box on the **[Printer Settings]** tab in the printer properties dialog box.
- With Windows 2000, clear the **[Enable banner]** check box on the **[Neware Settings]** tab in the printer properties dialog box.
- With Windows NT 4.0, clear the **[Enable banner]** check box on the **[Neware Settings]** tab in the printer properties dialog box.

Printing after resetting the printer

After resetting the remote printer, it will be cut off from the print server for about 30-40 seconds before connecting again. Due to the NetWare specification, print jobs may be accepted, but they will not be printed during this interval.

When using the printer as a remote printer, wait about 2 minutes after resetting the printer before attempting to print.

When Using DHCP

Note the following points when using DHCP (Dynamic Host Configuration Protocol).

Supported systems

Windows NT Server 4.0 can be configured as a DHCP server.

Configure the printer with a reserved IP address

To always assign the same IP address, configure a reserved IP address using the DHCP server.

Note

- When multiple DHCP servers are used, reserve the same address with each DHCP server. The Network Interface Board needs to receive information from the DHCP server that it contacts.

Follow these steps to configure the printer with a reserved IP address.

- 1** Start the DHCP manager.
- 2** Select the scope that will be used, and on the [Scope] menu, click [Reservation].
- 3** Type the IP address into [IP Address].
- 4** Type the MAC address of the Network Interface Board into [Unique Identifier].

Note

- Do not use hyphens to separate the numbers.
- If you do not know the MAC address, it can be found on the configuration page printed by the printer.

- 5** Type a name and comment into the [Client Name] box and the [Client Comment] box.

Note

- For more information about client names, see P.102 “Additional information”.

- 6** Click [Add].

An IP address is reserved.

- 7** Click [Close] to close the dialog box.

Additional information

- When you click **[Active Lease]** on the **[Scope]** menu of DHCP manager, a list of client leases appears. When the reserved IP address is not active, the name of the reservation is the name entered in the Client Name field of the Add Reserved Clients dialog box. When the reserved IP address becomes active, the client name changes to the printer name configured by the Network Interface Board. Only the first 13 letters of the printer name appear here. When you use the printer with Multidirect Print, use the host name of the printer as the **[Client Properties]** Client Properties dialog box.
- When the DHCP server does not assign an IP address, the Network Interface Board uses 11.22.33.44 as a temporary IP address. You can confirm the printer's IP address on the network configuration page.
- Because 11.22.33.44 is a special IP address, you cannot print using this address.
- When using the DHCP relay agent in a network environment that uses a dial up router to connect to the Network Interface Board, an increase in communication fees can occur.

6

When Using the NIB Setup Tool

If the Network Interface Board cannot browse using the TCP/IP protocol, confirm that the TCP/IP environment is correctly configured in your computer.

When Using IPP with Multidirect Print

When using IPP with Multidirect Print, note the following:

- The network printer can only receive one print job from Multidirect Print at a time. While the network printer is printing a job, another user cannot access the network printer until it completes the job. In this case, Multidirect Print tries to access the network printer until the retry interval expires.
- If Multidirect Print cannot access the network printer and times out, Multidirect Print stops sending the print job. In this case, you should cancel the paused status from the print queue window. Multidirect Print will resume access the network printer. You can delete the print job from the print queue window, but canceling a print job that has been printed by the network printer might cause that the next print job sent from another user not to be printed correctly.
- If a print job that is sent from Multidirect Print is interrupted and the network printer cancels the job because something went wrong, launch the print job again.
- Print jobs sent from another computer do not appear in the print queue window regardless of the protocol.

- If various users send print jobs using Multidirect Print to network printers, the printing order might not be the order in which the jobs were sent.
- An IP address cannot be used for the IPP port name because the IP address is used for the PortNavi port name.

Specifications

LAN interface	100BASE-TX, 10BASE-T
Frame type	EthernetII, IEEE802.2, IEEE802.3, SNAP
Protocol	<ul style="list-style-type: none">• TCP/IP Windows 95 Windows 98 Windows 2000 Windows NT 4.0• IPX/SPX NetWare 3.11, 3.12, 3.2, 4.1, 4.11, 5, IntranetWare• NetBEUI Windows 95 Windows 98 Windows 2000 Windows NT 4.0• IPP Windows 95 Windows 98 Windows 2000 Windows NT 4.0• AppleTalk Mac OS 7.6.1 or later
SNMP	MIB-II, PrinterMIB, HostResourceMIB, RicohPrivateMIB

INDEX

A

access control address, 79
access control mask, 79
ARP+PING, 76, 80

B

BOOTP, 80

C

client computer, setup
 Windows 2000, 29
 Windows 95/98, 13
 Windows NT 4.0, 45
community name, 83
configuration
 LPR port printing, Windows NT 4.0, 44
 Macintosh, 69
 NetWare, 47
 NetWare 3.x, 52
 NetWare 4.x, 5, 58
 Web Browser, 73
 Windows 2000, 15
 Windows 95/98, 1
 Windows NT 4.0, 31

D

default gateway address, 79
DHCP, 80, 101
dial up router, 99

E

EtherTalk, 69

I

information
 *Network Interface Board configura-
tion*, 82, 90
 Network Statistics, 89
 print job, 87
 print log, 88
 system log, 82, 93
install
 Multidirect Print, Windows 2000, 24
 Multidirect Print, Windows 95/98, 9
 Multidirect Print, Windows NT 4.0, 40

NIB Setup Tool, 47
 PortNavi, Windows 2000, 20
 PortNavi, Windows 95/98, 5
 PortNavi, Windows NT 4.0, 36

IP address, 76, 78
IPP, 84, 102

L

LAN adapter number (Lana Number), 33
LPR port Printing, 44

M

MAC address, 76
Macintosh, 69
message, 93
MIB, 86
Multidirect Print, 102
 Windows 2000, 24
 Windows 95/98, 9
 Windows NT 4.0, 40
Multidirect Print, *install*
 Windows 2000, 24
 Windows 95/98, 9
 Windows NT 4.0, 40
Multidirect Print, *printer port*
 Windows 2000, 25
 Windows 95/98, 10
 Windows NT 4.0, 41
Multidirect Print, *uninstall*
 Windows 2000, 25
 Windows 95/98, 10
 Windows NT 4.0, 41

N

NetWare, 47
NetWare 3.x, 52
NetWare 4.x, 5, 58
network boot, 80
Network Interface Board
 Operating Instructions, i
NIB Setup Tool, 49
 install, 47
 *install, PRINTER MANAGER FOR
ADMINISTRATOR*, 47
 precautions, 102
 Run NIB Setup Tool, 48

P

password, 74, 85

PortNavi

Windows 2000, 19

Windows 95/98, 4

Windows NT 4.0, 35

PortNavi, *delete the port*

Windows 2000, 21

Windows 95/98, 6

Windows NT 4.0, 37

PortNavi, *install*

Windows 2000, 20

Windows 95/98, 5

Windows NT 4.0, 36

PortNavi, *printer port*

Windows 2000, 22

Windows 95/98, 7

Windows NT 4.0, 38

PortNavi, *uninstall*

Windows 2000, 21

Windows 95/98, 6

Windows NT 4.0, 37

precautions, 99

printer name, 70

Printer Reference, i

printer status, 81

Pure IP, 61

Q

Quick Installation Guide, i

R

RARP+TFTP, 80

remote printer, setup

NetWare 3.x, 55

NetWare 4.x, 5, 63

RICOH-SCRIPT2 Operating Instructions, i

S

setup

client computer, Windows 2000, 29

client computer, Windows 95/98, 13

client computer, Windows NT 4.0, 45

Setup Guide, i

SNMP, 82, 86

specifications, 104

subnet mask, 79

T

telnet, 77

U

uninstall

Multidirect Print, Windows 2000, 25

Multidirect Print, Windows 95/98, 10

Multidirect Print, Windows NT 4.0, 41

PortNavi, Windows 2000, 21

PortNavi, Windows 95/98, 6

PortNavi, Windows NT 4.0, 37

W

Web Browser, 73

Windows 2000, 15

Windows 95/98, 1

Windows NT 4.0, 31

Z

zone, 70

Note to users in the United States of America

Notice:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause 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 the equipment off and on, the user is encouraged to try to correct the interference by one more of the following measures:

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.

Warning

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Caution (in case of 100BASE-TX environment):

Properly shielded and grounded cables (STP) and connectors must be used for connections to host computer (and/or peripheral) in order to meet FCC emission limits.

STP with ferrite core must be used for RF interference suppression.

Declaration of Conformity

Product Name: Network Interface Board

Model Number: Type306

Responsible party: Ricoh Corporation

Address: 5 Dedrick Place, West Caldwell, NJ 07006

Telephone number: 973-882-2000

This device complies with part 15 of 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.

Note to users in Canada

Note:

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

Remarque concernant les utilisateurs au Canada

Avertissement:

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.



Declaration of Conformity

"The Product complies with the requirements of the EMC Directive 89/336/EEC and the Low Voltage Directive 73/23/EEC."

Warning

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Network Interface Board Type306 (Option) Operating Instructions

