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NETWORK USER'S GUIDE

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CHAPTER 1

INTRODUCTION

INTRODUCTION

The purpose of this book is to help the network administrator integrate SuperScript 1450/1450N monochrome laser printers into a local Area Network (LAN). It describes setting up the printer in LANs using NetWare, Windows NT, or Windows 2000 network operating systems.

As described in the User's Guide that came with the SuperScript 1450/1450N monochrome laser printer, this printer comes with its own built-in web server and home page. You can perform network administration tasks directly from the printer's home page. See "SuperScript 1450/1450N Web Pages on page 43 for more information on this topic.

Some simplified instructions are included in this guide, but ideally we assume that you have the following:

- A working knowledge of your network utilities and system.
- The correct network software.
- A completely operational system.
- Access to the supervisor account as a network administrator, or access to an account that has supervisor privileges.

SUPPORTED ENVIRONMENTS

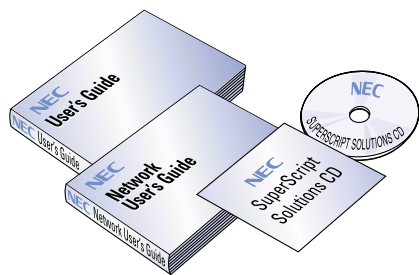
The Network Interface Card (NIC) includes software that supports platforms and protocols including:

- Microsoft® Windows® 95/98, Microsoft® Windows NT™ 4.0, and Microsoft® Windows® 2000
- NetWare® versions 3.x, 4.x, and 5.x
- Peer-to-peer printing for Windows 95/98
- Peer-to-peer printing for Windows NT 4.0
- Peer-to-peer printing for Windows 2000
- Mac OS
- UNIX®
- Linux

REQUIREMENTS

In order to install the NIC, you will need a Category 5 twisted pair cable with RJ-45 connectors for 10/100Base-TX Ethernet®.

note: The NIC automatically detects whether you have a 10 Mbps or 100 Mbps Ethernet connection. For better performance, NEC recommends you use shielded cable and connectors when connecting to 100 Mbps Ethernet hubs.



SOFTWARE REQUIREMENTS

Network printing involves a network to interconnect print clients and a printer. Each client can use the network for connecting to the printer.

Print Clients

A print client can be defined as a computer that submits print jobs through its physical LAN connection and installed operating system. Listed below are the print client types supported by the SuperScript 1450/1450N printers:

- Windows NT 4.0
- Windows 2000
- Windows 98
- Windows 95
- Mac OS 7.1.2 or higher
- UNIX
- Linux

Printer Drivers

Printer drivers enable the print client to communicate to the printer from a user's application. The SuperScript 1450/1450N printers provide the following printer drivers:

- PCLe/PCL6 Printer Driver
- GDI 1400 Series Printer Driver
- PostScript Printer Driver
- NEC SuperScript 1450 PPD
- UNIX LPR
- Linux PCL5e

Any one of these drivers can be used to enable an application to communicate with the printer.

Macintosh computers running Mac OS 7.1.2 or higher, can use the LaserWriter 8 printer driver. Supplied with your printer is an NEC SuperScript 1450/1450N PPD that helps the LaserWriter 8 driver communicate with the printer.

UNIX computers using LPR which sends plain text or PostScript data to the printer.

Linux computers running Red Hat 6.0 or higher can use the PCL5e driver supplied on the *SuperScript 1400 Series Solutions CD*.

Network Operating Systems

Networks use an operating system for managing the network. Depending on the method used to connect your printer to the network, a network operating system (NOS) may have to be configured to recognize the printer and make it available to print clients.

The SuperScript 1450/1450N supports networks using 10Base-TX or 100Base-TX physical connections and one of the following Network Operating Systems:

- Microsoft Windows
- Novell NetWare
- Apple EtherTalk and LocalTalk
- UNIX
- Linux

NETWORK SETUP TASKS

Connect the Printer to Your Network

note: If you have the SuperScript 1450N printer, a network card is already installed. If you have the SuperScript 1450 printer you will need to install the NIC yourself. You can order the SuperScript 1450 Network Interface Upgrade Kit by calling 1-800-632-2326. Ask for order number 1403 for the PC upgrade and order number 1404 for the Macintosh upgrade.

Install Network Printer Manager (NPM)

Install Network Printer Manager (NPM) on your computer from the *SuperScript 1400 Series Solutions CD*.

note: Please be advised that the NPM utility used to manage printers on a network does not support upgrading the flash firmware across different networks. In order to circumvent this limitation, you need to install the NPM utility on a PC located on the same network as the printer you are interested in upgrading.

Assign the IP Address

Use the Network Printer Manager (NPM) to assign or obtain the IP address, see “Assigning the IP Address with NPM” on page 11.

note: Please be advised that if you use Microsoft's IPX/SPX-compatible protocol, some of the Network Printer Manager's options that allow you to Add, Remove, Modify, and Create print queues will not be available. Therefore we strongly recommend that you use Novell's NetWare IPX/SPX protocol (32-bit client) in order to avoid this incompatibility.

Configure the Network and Workstations

After assigning the IP Address to the NIC, you will be ready to set up the computer to print to your new printer. Select the computer's operating system from the list below and continue to configure the network and workstations. The *SuperScript 1400 Series Solutions CD* contains tools to support the following operating systems and network protocols:

From Windows 95/98

- For NetWare networks, see page 23 of Chapter 5 for configuration information.
- To print directly to the network without a designated server, you can use the peer-to-peer software provided on the SuperScript CD. See page 15 of Chapter 4.
- To set up shared printing without a designated server, see page 17 of Chapter 4.

From Windows NT /2000

- If you have a NetWare network, see page 26 of Chapter 5 for configuration information.
- If you have a Windows NT 4.0 server network, see page 16 of Chapter 4.

From Mac OS

See page 29 of Chapter 6 for information on setting up and printing from Macintosh computers over EtherTalk.

From UNIX

See page 31 of Chapter 7 for installing the printer on a Unix system Solaris 2.x and SCO.

From Linux

See page 35 of Chapter 8 for installing the printer on a Linux system.

NETWORK FEATURES

For detailed information about the printer's features, see the *SuperScript 1450 User's Guide*.

Network Printer Manager

The SuperScript 1450/1450N Network Printer Manager (NPM) is a tool for remotely managing the printer, its NIC, and to some extent, the network operating system.

note: Please be advised that the NPM utility used to manage printers on a network does not support upgrading the flash firmware across different networks. In order to circumvent this limitation, you need to install the NPM utility on a PC located on the same network as the printer you are interested in upgrading.

SuperScript 1450/1450N Web Pages

The SuperScript 1450/1450N settings can also be configured using a web browser such as Internet Explorer or Netscape navigator. The printer web pages allow the LAN administrator to configure most printer settings. For greater network configuration capability, use the NPM utility.

NIC Flash Memory

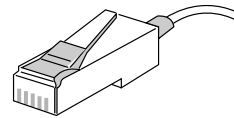
The printer configuration settings are stored in a FLASH ROM IC located on the NIC. In order to upgrade the NIC firmware, the NPM utility must be installed in a PC running Windows 95/98/NT/2000.

NETWORK INTERFACE AND CABLING

There are two characteristics that define an interface to your network—the physical and electrical.

Physically, the interface to your network must be an RJ-45 socket. Electrically, the interface must be Ethernet 10Base-TX or 100Base-TX.

A network cable is used to interconnect the printer with the network interface. The cable must be a Category 5 cable with RJ-45 plugs fastened to both ends. If connecting to a 100 Megabit Ethernet network, use a *shielded* Category 5 cable.



RJ-45 Plug

The RJ-45 plug is fastened to both ends of a Category 5 network cable. Use this type of cable to interconnect the printer with the network interface.

CHAPTER 2

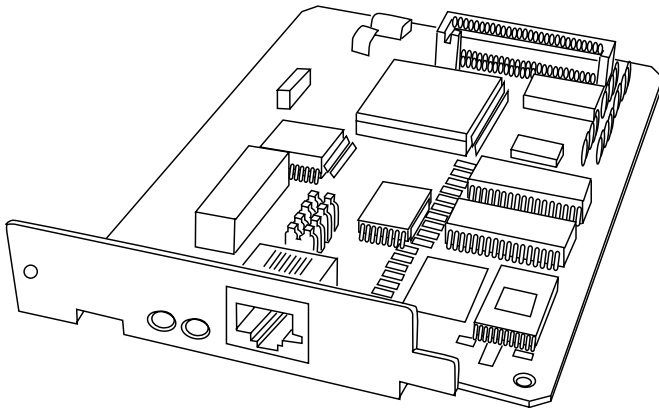
NIC INSTALLATION

INTRODUCTION

The SuperScript 1450N is configured with a Network Interface Card (NIC) by the factory. The SuperScript 1450 can be upgraded in the field with a NIC.

- Order #1403 for a Network Interface Upgrade Kit for PC
- Order #1404 for a Network Interface Upgrade Kit for Macintosh

note: Included in the Network Interface Upgrade Kit for Macintosh are a PS SIMM and a Memory SIMM, necessary for a Macintosh to use the printer.



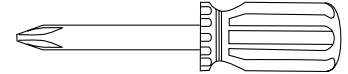
SuperScript Network Interface Card

INSTALLING THE NETWORK INTERFACE CARD (NIC)

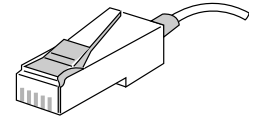
What You Will Need

You will need to provide the following to install the NIC in your printer and connect it to your network:

- A phillips-head screwdriver



- A category 5 twisted pair cable with RJ-connectors for 10/100Base-T Ethernet®



note: The NIC automatically detects whether you have a 10 Mbps or 100 Mbps Ethernet connection. For better performance, NEC recommends you use shielded cable and connectors when connecting to 100 Mbps Ethernet.

Installation Steps

1. Prepare the printer.
2. If you have a Macintosh, install the PS SIMM and the Memory SIMM that comes with the Macintosh Upgrade Kit. See the instructions included in the *Network Interface Upgrade Kit for Macintosh*.
3. Install the NIC.
4. Test the NIC.
5. Print a Network Settings page.
6. Review the NIC features.

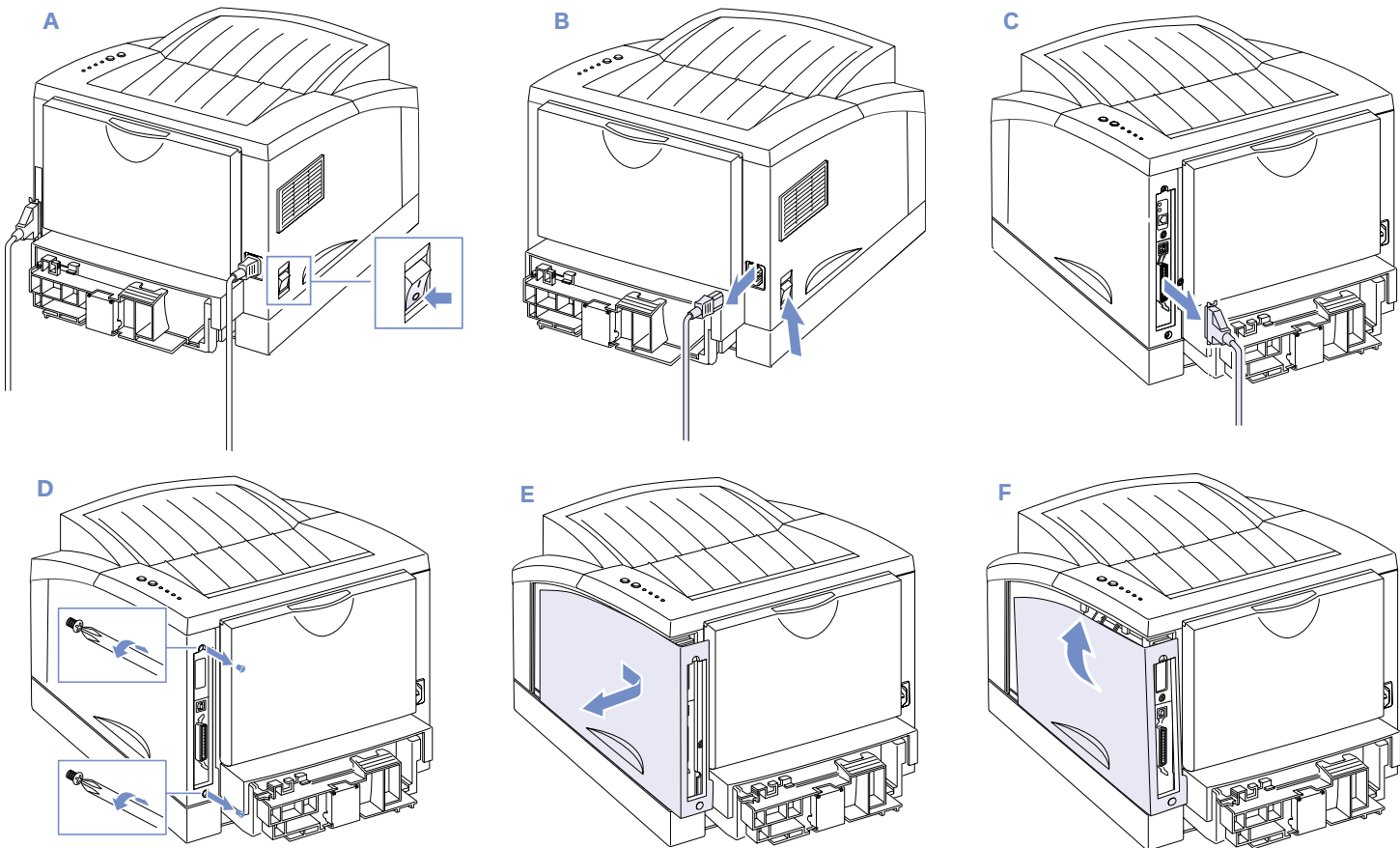
Preparing the Printer

1. Turn off printer **(A)**.
2. Remove the power cord from the back of the printer, disconnect the printer cables from the ports **(B,C)**. Position the printer so you are facing the side and back corner where the cable port is located. Make sure you have enough room to work.
3. Remove two screws from the side cover **(D)**.
4. Slide side cover approximately $\frac{3}{4}$ inch towards the back of printer **(E)** using the handle on the side cover. Making

sure wire-snaps on the parallel port are not in the way, rotate the side cover away from the printer approximately $\frac{1}{4}$ inch

5. Lift side cover off the printer. If you are going to connect to a Macintosh, install the PS SIMM included in your Network upgrade Kit. See the instructions included in the kit or consult the *SuperScript 1450 User's Guide* **(F)**.

WARNING! Avoid touching the Controller Board circuitry and components.

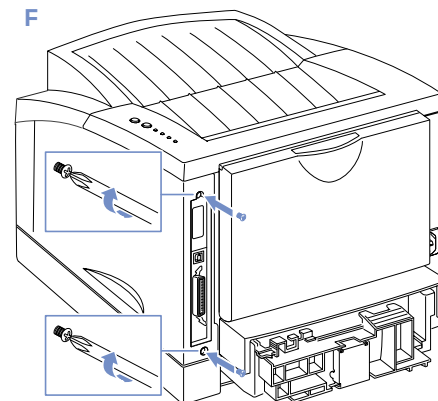
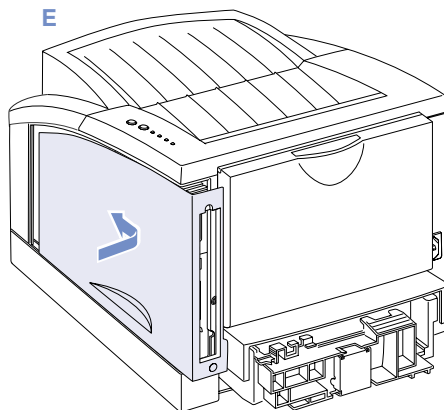
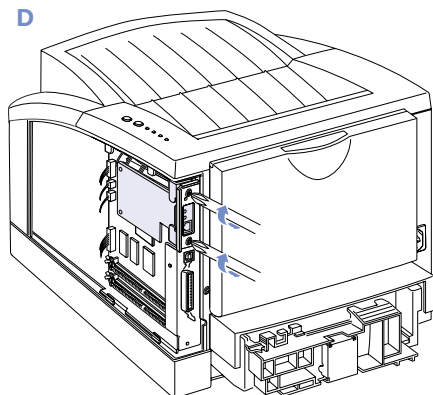
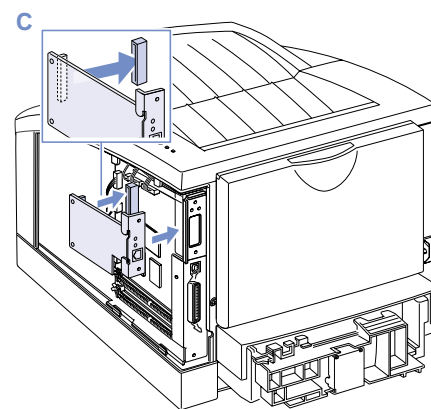
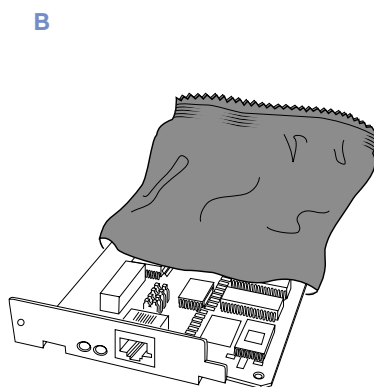
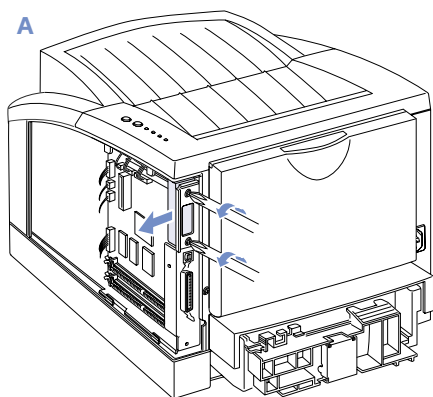


Installing the NIC

1. Remove two screws from the metal plate behind the interface slot, and remove the metal plate (A).
2. Remove the NIC from its protective bag (B). Handle the NIC only by its edges.

WARNING! Although the NIC is resistant to damage from electrostatic discharge during normal operation, it's advisable to take proper static control precautions during installation procedures to avoid damage to the equipment.

3. Insert the NIC into the controller board circuit NIC socket (C).
4. Use the screws removed in Step 1 to fasten the NIC in place (D).
5. Making sure wire-snaps on the parallel port are not in the way, align side cover bottom edge with bottom edge of opening of the printer about $\frac{3}{4}$ inch to the back, and slide it towards the front (E).
6. Tighten the two screws on the side panel cover (F).



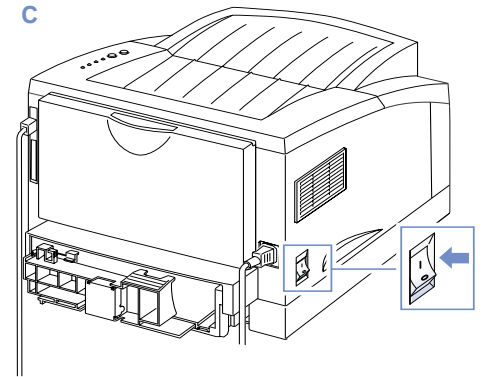
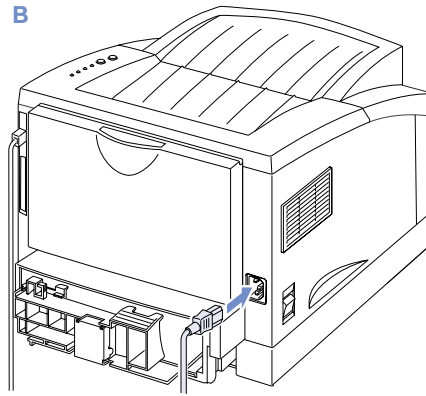
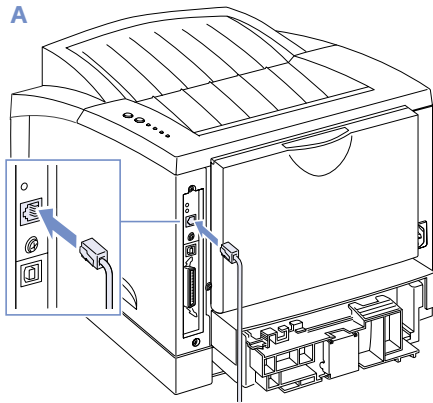
CONNECTING THE PRINTER

Follow these steps to verify that the NIC is installed and operating properly.

1. Connect the network's twisted pair cable with an RJ-45

connector to the new network port on your printer (A).

2. Reattach the power cord to the printer (B), plug in the printer.
3. Turn on the printer (C).



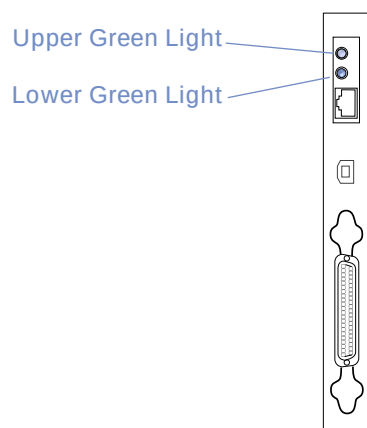
NIC FEATURES

NIC Status Lights

When the NIC is installed, its two status lights are located on the Interface Panel on the back of the printer. Light patterns for normal operation are

Upper Green light is on solid: This shows normal operation. The printer's LAN connection is established. If the Upper Green Light is not lit, the LAN connection is not established.

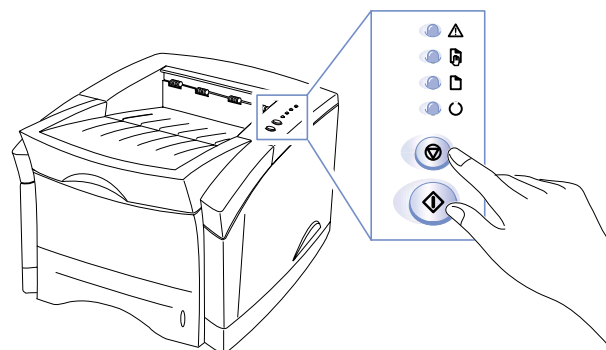
Lower Green light blinks continuously: This shows the printer is available and ready to process a print job.



Resetting the NIC

When the NIC is reset to its factory default settings, data such as names and IP addresses will be lost. However, the NIC's serial number and Network Address will not be lost. The NIC can be reset by following the steps below.

1. Turn **OFF** the power to the printer.
2. Depress the **GO/Continue** and **Cancel Job** buttons on the printer's Operator Panel and turn the printer back **ON**.



3. The LEDs will all blink three times and then the LEDs will cycle once (approx. 4 seconds). This will reset the printer to factory default settings, but not the NIC.
- note:** You should restore factory defaults when the printer is moved to a different network.
4. Continue to depress the two buttons until the LEDs once again all blink three times and then the LEDs cycle once again (approx. 20 seconds).
 5. Release the two buttons and both the NIC and the printer should be reset to factory default settings.

INSTALLING NETWORK SOFTWARE

The SuperScript 1450N Network Printer Manager (NPM) is a multi-purpose tool for administering networked SuperScript 1450N printers. Use the NPM for performing the following administrative tasks.

- Viewing all SuperScript 1450N printers connected to the network
- Viewing the general settings for a specific printer
- Viewing the network interface settings for a specific printer
- Creating NetWare queues and servers
- Viewing protocol statistics for a specific printer
- Viewing the job queue for a specific printer
- Viewing the operational status of a specific printer
- Creating alerts for monitoring specific printers
- Upgrading the NIC firmware for a specific printer
- Adding ports to networked printer drivers
- Starting the Add Printer Wizard
- Viewing a printer driver's properties sheet
- Printing test pages
- Creating IPP Client and IPP Servers
- Supports Windows operating systems only

note: Please be advised that the NPM utility used to manage printers on a network does not support upgrading the flash firmware across different networks. In order to circumvent this limitation, you need to install the NPM utility on a PC located on the same network as the printer you are interested in upgrading.

Installing Network Printer Manager

NPM must be installed on PCs running Windows 95/98/NT/2000.

note: All old versions of NPM must be un-installed before installation of the 1450N Network Printer Manager. Your computer must then be re-started before proceeding with the following instructions.

1. Insert the *NEC SuperScript 1400 Series Solution CD* into the CD-ROM drive.
2. After reading the Licensing Agreement, click **I Accept**.
3. Click on the **Install** option from the 1450N Installer Main Menu
4. Click on the **Install from CD** option.
5. Click on the **Custom Install** option.
6. Click on the **Network Printer Manager** option
7. Click on the **Next** button at the Welcome screen.
8. Click on the **Next** button to install NPM on your hard drive.
9. Click on the **Next** button to create program icons in the Program Folder.
10. Click on the **Next** button to install the Print and Administrative Client.
11. Click on the **Finish** button to re-boot your system.

CHAPTER 3

NIC IP CONFIGURATION

INTRODUCTION

To take advantage of the many SuperScript network features you must assign an IP address to the printer's network interface card (NIC). This chapter explains several ways of assigning an IP address.

Obtaining the Printer's IP Address

Obtain the printer's IP Address from your network administrator. This step is not necessary for Mac OS users or if you have a Dynamic Host Configuration Protocol (DHCP) server.

Selecting an IP Address Assignment Method

If a DHCP server is not present, use one of these methods to assign a TCP/IP address to your printer:

Network Printer Manager

There are several ways to assign IP addresses for the printer's NIC. They are:

- Static (manual configuration)
- DHCP
- BOOTP
- RARP

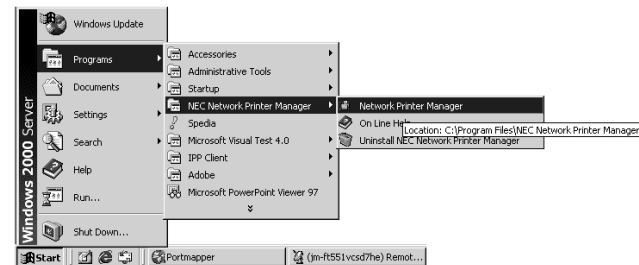
ASSIGNING THE IP ADDRESS WITH NPM

The Network Printer Manager (NPM) is an administrative tool that can also be used for assigning the IP Address and configuring the NIC.

The NPM must be installed on a computer running Windows 95, 98, 2000, or NT 4.0 and which is connected to the network. For more information about NPM, see page 37 of Chapter 9.

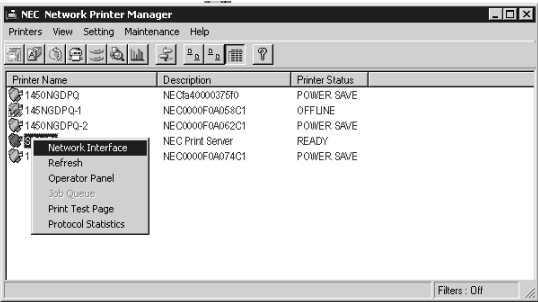
To Assign the IP Address using the Network Printer Manager:

1. Click the Windows **Start** button, point to **Programs**, then **NEC Network Printer Manager** folder, and click **Network Printer Manager** icon to start the NEC Network Printer Manager.

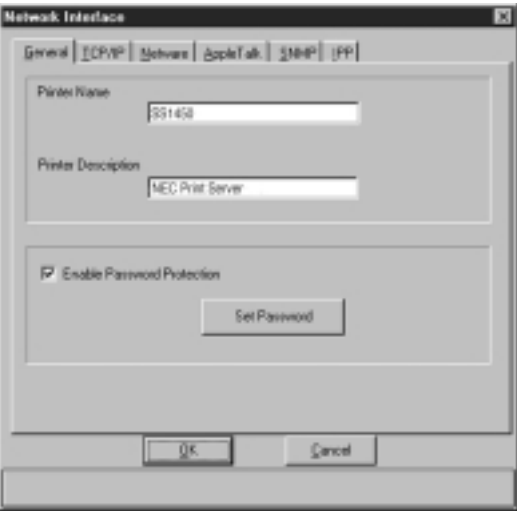


Once NPM starts, it will begin searching the network for the printer. Every SuperScript 1450N printer found will be listed in the NPM main window.

- Select the printer that must have it's NIC set up.
The printer can be identified from the **Printer Name** column by its NIC serial number, NECnnn.nnn.nnn.nnn, where *nnn.nnn.nnn.nnn* is the MAC address of the card.
The MAC address is listed as the default in the printer name. For example, NEC0000F0A06ABE is the printer name, and 0000F0A06ABE is the MAC address.
- From the **Network Printer Manager** menu, select **Network Interface** from the **Setting** menu to open the **Network Interface** properties window.

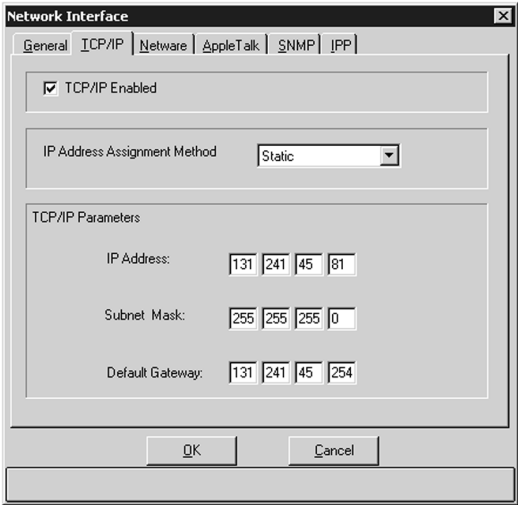


- Click the **General** tab to bring it to the front.



- In the **Printer Name** text box, type in a name for the printer.

- In the **Printer Description** text box, type in a description for the printer; for example, its location.
- Click the **TCP/IP** tab to bring it to the front.



- Assure the **TCP/IP** check box is selected.
- From the **IP Address Assignment Method** drop-down list, select the method used by the Network Operating System (NOS) for assigning IP addresses to computers and printers connected to the network.

Item	Description
Static	Select this item if you want to manually enter a permanent IP address for the printer.
BOOTP	Select this item if you want the NIC to broadcast a request to a BOOTP server for an IP address. The printer must be restarted after the NIC is configured.
RARP	Select this item if you want the NIC to broadcast a request to a RARP server for an IP address. The printer must be restarted after the NIC is configured.

Item	Description
DHCP	Select this item if you want a DHCP server to assign an IP address to the printer that may automatically be changed by the server. One cause for address change is if the printer is restarted.

ASSIGNING IP ADDRESSES USING BOOTP

The installation of a BOOTP program or service may be required in order to provide BOOTP IP address assignments on the LAN. The following steps address setting up BOOTP on Windows NT servers, but the same procedure can be applied to Solaris, etc.

1. From your Windows NT Server, start your BOOTP service.
2. Start **NPM** and highlight the printer that will be using BOOTP.
3. Double-click on the highlighted printer.
4. From the **Network Interface** window, click on the **TCP/IP** tab.
5. Set the protocol to BOOTP from the pulldown **IP Address Assignment Method** field.
6. Click on the **OK** button.
7. Power OFF your printer, then power ON.
8. Verify that NPM is now listing your printer with a new IP address assigned by your BOOTP server.

10. If the **STATIC** method was selected, in the **IP Address** text boxes, type in the IP address for the printer.
 - In the **Subnet Mask** text boxes, type in the subnet mask.
 - In the **Default Gateway** text boxes, type in the gateway (router) IP address.
11. If **BOOTP** or **RARP** was selected as the IP address assignment method, restart the printer and go to the next page.

ASSIGNING IP ADDRESSES USING RARP

The installation of a RARP program or service may be required in order to provide RARP IP address assignments on the LAN. The following steps address setting up RARP on Windows NT servers, but the same procedure can be applied to Solaris, etc.

1. From your Windows NT Server, start your RARP service or program.
2. Start **NPM** and highlight the printer that will be using RARP.
3. Double-click on the highlighted printer.
4. From the **Network Interface** window, click on the **TCP/IP** tab.
5. Set the protocol to RARP from the pulldown **IP Address Assignment Method** field.
6. Click on the **OK** button.
7. Power OFF your printer, then power ON.
8. Verify that NPM is now listing your printer with a new IP address assigned by your RARP server.

ASSIGNING THE IP ADDRESS WITH DHCP

Dynamic Host Configuration Protocol (DHCP) allows automatic assignment of IP address and other IP parameters for attached devices. The 1450N works with DHCP in the following way.

At power-up, the 1450N NIC broadcasts a DHCP request for an IP address. If a DHCP server is present, the request will be processed, and an IP address will be returned to the NIC. Upon receipt of the IP address, the NIC resets, and prints a Network Settings page. This shows the new IP address (and subnet mask, and default gateway, if any).

note: Under factory default settings, once an IP address has been assigned to it, the NIC will no longer broadcast DHCP requests. If you uncheck the IP Address in NVRAM, in the Network Administration Page, the printer will broadcast a DHCP request each time you turn on the printer.

The DHCP server may grant a temporary IP address, called a temporary lease or temporary reservation, which expires later, or may grant a permanent or unlimited lease or reservation which does not expire.

Devices that are granted a temporary lease will be notified before the lease expires and asked if they would like to extend the lease. The NIC will continue extending its lease indefinitely (unless prohibited by your DHCP server configuration), and thus maintain a consistent IP address.

note: If the NIC is not turned on or is not connected to the network when the DHCP server is sending requests to extend the lease, the lease will not be extended. The DHCP server will cancel the lease and may assign the IP address to another device. Therefore, it is highly recommended to explicitly specify the NIC lease as permanent or unlimited in your DHCP server configuration.

Verify that your printer was assigned an IP Address through the Network Configuration Sheet, then proceed to setting up your workstation to use the 1450N printer.

CHAPTER 4

WINDOWS NETWORKS

INTRODUCTION

Before you configure a computer to communicate with the printer, the following prerequisites must be met.

- The Network Interface Card (NIC) must be installed in the printer.
- The printer must be physically connected to a network.
- The IP Address must be assigned to the NIC.

WINDOWS PEER-TO-PEER

Peer-to-peer printing allows Windows 95/98 computers to print directly to a networked printer without an intervening file server. Below are the main features of peer to peer printing.

- Runs on Windows 95/98 and workstations or servers “out of the box.”
- Runs on networks with or without a NetWare file server.
- Implements peer to peer direct printing between Windows computers and networked printers.
- You can configure network printers the same way you configure printers directly attached to a computer.

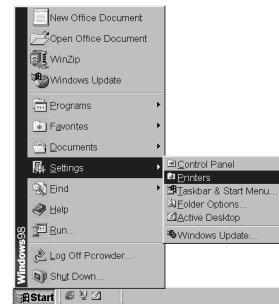
note: In isolated, serverless networks, the NIC should be used with its factory default settings.

Adding A Peer-to-Peer Printer

Follow these steps to install the peer-to-peer software.

note: All older versions of NPM must be de-installed, and the computer re-started, before installing the SuperScript 1450 NPM.

1. If you haven't done so already, load the appropriate Windows printer driver on your computer. Use **Easy Network Install** to load NEC's NPM. Exit the installation program after the NEC programs and drivers have been installed.
2. Press the Windows **Start** button, select **Settings**, then select **Printers**.



3. Locate the SuperScript printer you want to add, left-click on printer icon, and then right-click to select **Properties**.



4. Select the **Details** tab.
5. In the **Add Port** dialog box, select **Add Port** then choose the **Other** radio button.
6. Highlight **NEC Network Printer Port** on the list. Click **OK**.
7. Select printer and click **OK**.
8. Select the **General** tab and print out a test page to make sure you have added the printer.
9. Click **Apply**.

WINDOWS NT

Setting LPR Printing on an NT Network

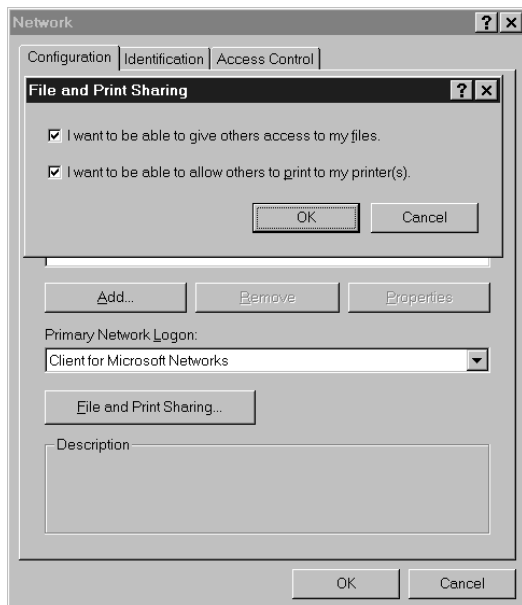
The following procedure can be used to set up the LPR spooler for a Windows NT 4.0 workstation / server.

1. In the Windows **Network** control panel, install the **Microsoft TCP/IP Printing** service.
2. Use the Windows Add Printer wizard to install the SuperScript printer driver for Windows NT 4.0.
note: SuperScript printer drivers are provided on the *SuperScript 1400 Series Solutions CD* that came with the printer.
3. In Windows NT 4.0, click the **Start** button, select **Settings**, then select **Printers**.
4. Select the **NEC SuperScript 1450** printer icon, and then select **Properties** from the **File** menu.
5. Click on the **Ports** tab.
6. Select **Add Port**.
7. Under **Available Printer Port**, select **LPR Port** and click the **New Port** button.
8. In the **Name or address of the printer providing lpd** field, enter the IP (Protocol) address of the printer. For example, **128.191.184.50**.
9. In the **Name of printer or print queue on that server** field, enter **PORT1** (the word *PORT* must be in uppercase). Click **OK**, then click **Close** to assign that newly created port to the SuperScript printer.
10. Print a test page.

Shared Printing in Windows 95/98

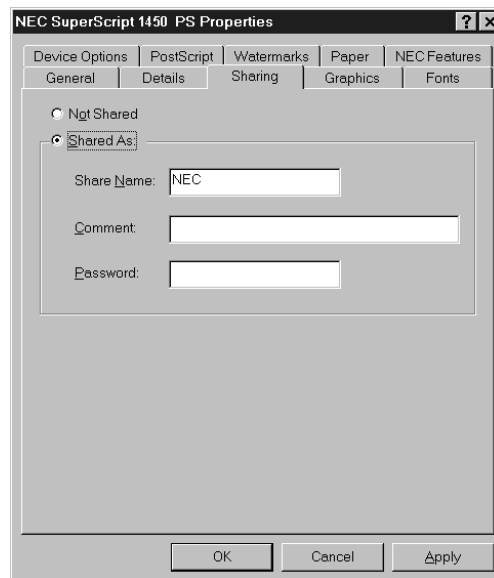
Use these steps to set up shared printing in Windows 95/98.

1. Install the printer as a *local* printer using LPT1 port.
2. Press the Windows **Start** button, select **Settings**, then select **Control Panel**.
3. In the Control Panel window, double-click the **Network** icon.
4. Click on the **File and Print Sharing...** button. In the dialog box that appears, make sure that **I want to be able to allow others to print to my printer(s)** is checked.



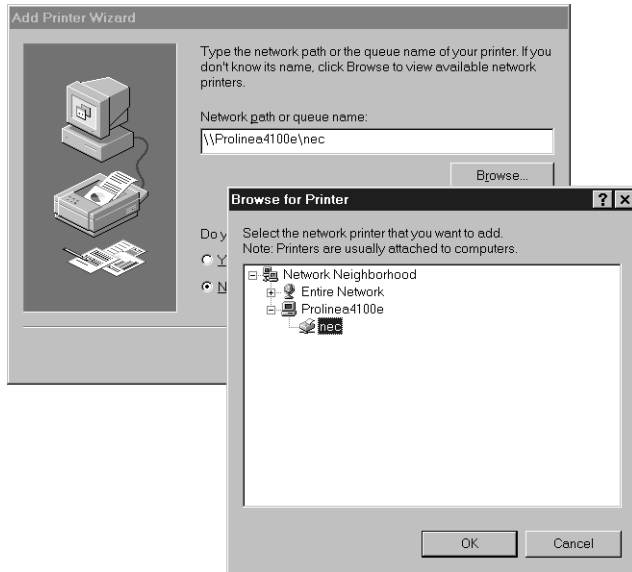
5. Click **OK** in the **File and Print Sharing** dialog box and then click **OK** in the **Network** window.
6. Click **Yes** through any menus that come appear and let the program re-start the computer for the changes to take effect.
7. Next, press the Windows **Start** button, select **Settings**, then select **Printers**.

8. In the **Printers** window, select the printer installed on LPT1. Click on it with the right mouse button and select **Sharing** from the pop-up menu.
9. Select **Shared as** and enter a name to identify the printer on the network. Then click **OK**.



10. On another PC, press the Windows **Start** button, select **Settings**, then select **Printers**.
11. In the **Printers** window, double-click the **Add Printer** icon.
12. Click **Next** to begin installation and specify **Network** when prompted.

13. When prompted for **Network path or queue name**, click on **Browse**, and browse to the name of the computer where the printer was installed locally.



14. Select the name of the shared printer and click **OK**.
15. Proceed with normal installation as directed.

WINDOWS 2000

Configuring with Standard TCP/IP

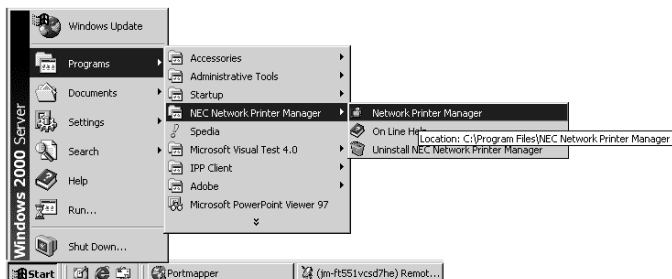
1. In Windows NT 4.0, click the **Start** button, select **Settings**, then select **Printers**.
2. Right mouse click on the **NEC SuperScript 1450** printer icon, and then select **Properties**.
3. Click on the **Ports** tab.
4. Select **Add Port**.
5. Open **Printer Properties**, select **Port** tab and click the **Add Port** button.
6. Select **Standard TCP/IP Port** in the **Printer Port** dialog box, then click the **New Port...** button.
7. Follow the screen instructions in the **Add Standard TCP/IP Printer Port Wizard**.
8. In the **Add Port** window, enter the printer's IP address (or printer name) in the **Printer Name or IP Address** text box. The **Port Name** will be entered automatically, though you can change this identifier at any time.
9. Continue following the screen instructions and click **Finish** to complete the installation.

INSTALLING NEC IPP

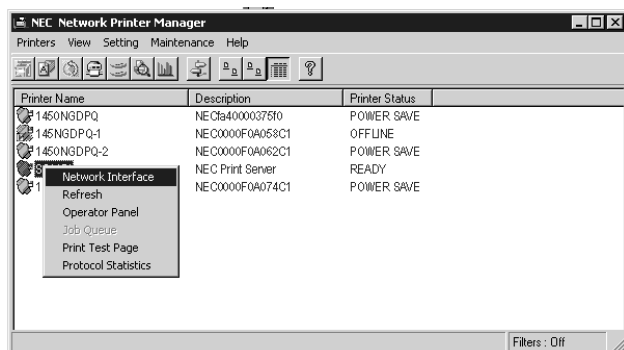
Setting Up the Printer

The Network Administrator does this once for everyone. See page 47 of Chapter 9 for information about the program.

1. From **Start**, select **Programs**, then **NEC Network Printer Manager** and select **Network Printer Manager**.

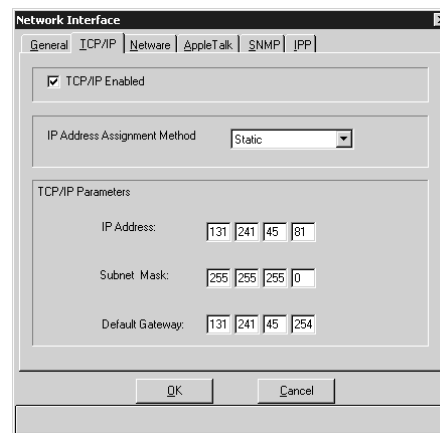


2. Left-click on printer icon, then right-click to select **Network Interface**.



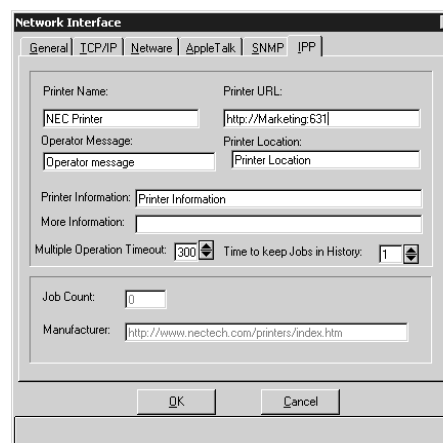
note: IPP is using port 631. This method applies to Windows 95/98, Windows NT 4.0, and Windows 2000.

3. Select the **TCP/IP** tab. Use **Static** for **IP Address Assignment Method**.



4. In the **IPP** tab, enter the printer (domain) name. It is better to use the actual name rather than the IP Address. For example, <http://Marketing:631>, where **:631** must follow the name.
5. Click on the **OK** button to save the IPP configuration settings.

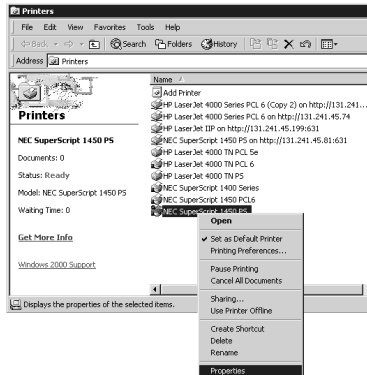
note: The Network Administrator must tell all users this address.



Installing the NEC IPP Client

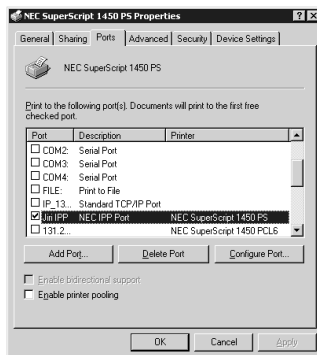
All users must have IPP Client installed on their computer.

1. The NEC IPP Client software is located on the *SuperScript 1400 Series Solutions CD* at
`e:\network\Ipp\setup.exe`
2. Install the SuperScript 1450 printer driver if this has not already been done.
3. Select the SuperScript 1450 printer in the **Printers** folder. Right click on Properties.

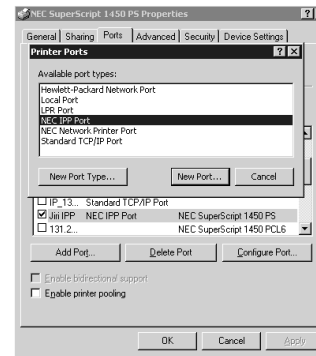


4. Select the **Ports** tab.

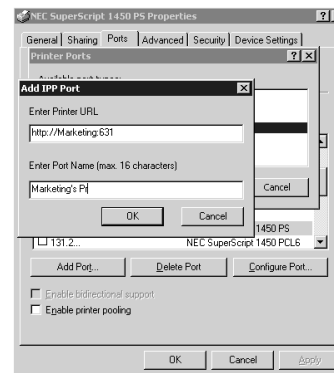
note: Windows 95/98 users need to select the **Details** tab instead of the Port tab.



5. Click on the **Add Port** button. Select NEC IPP Port.



6. Click on the **New Port...** button.
7. Click on **Add Port**, then **Close**, and **Apply**.



8. Select the **General** tab and print out a test page.

Installing NEC IPP Port 631 on a Win 2000 Server

note: Because Win2000 supports IPP, you do not need to install IPP Monitor.

1. From **Start**, select **Settings**, and then select **Printers**.
2. Double-click on **Add Printer** to activate the Add Printer Wizard.
3. In the **Local or Network Printer** window, select **Network printer** and click **Next**.
4. In the **Locate Your Printer** window, select **Connect to a printer on the Internet or on your intranet** and type in the URL in the **URL:** text box and click **Next**.

For example, <http://131.241.45.81:631>.

note: If you use NPM in the IPP tab and assign one name to the printer, you must use that same name for the IPP Client. For example, although <http://my81.marketing.com:631> equals IP address 131.241.45.81, the IPP Client can not be <http://131.241.45.81:631>, it must be <http://my81.marketing.com:631>.

5. In the **Connect to Printer** window, click **OK**.
6. When the Add Printer Wizard asks you to select the manufacturer and model of your printer, select **NEC** and the name of your printer, select **Have Disk....**
7. Navigate to the proper location on the *SuperScript 1400 Series Solutions CD* and supply the correct **.inf** file. Click **OK**.
8. In the **Add Printer Wizard** window, the name of the printer will be displayed, click **OK**.
9. In the **Default Printer** window, select Yes and click **Next**.
10. Click **Finish** to exit the Add Printer Wizard program.

CHAPTER 5

NETWORK NETWORKS

INTRODUCTION

Print queues on Netware servers can be created using the Network Printer Manager (NPM) utility installed on Windows 95/98/NT/2000 PCs. For instructions about installing NPM, see page 5 of Chapter 2.

note: Before performing any procedures in this chapter, the printer must be connected and configured as described in Chapter 2, "Installing the NIC".

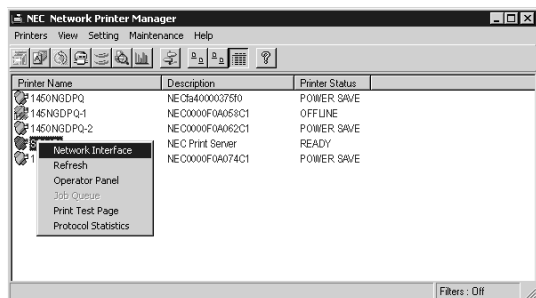
In order to create, modify, or remove print queues you must have sufficient administrator rights to the NetWare container object where print queues are located.

Creating Netware Print Queues Using NPM

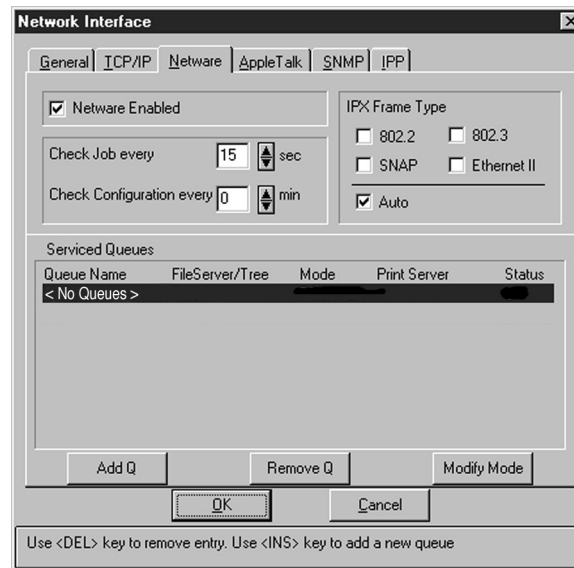
NetWare has two methods for managing their networks. One is Novell Directory Services (NDS) and the other is the Bindery. NPM has a procedure for both.

Configuring an NDS Queue

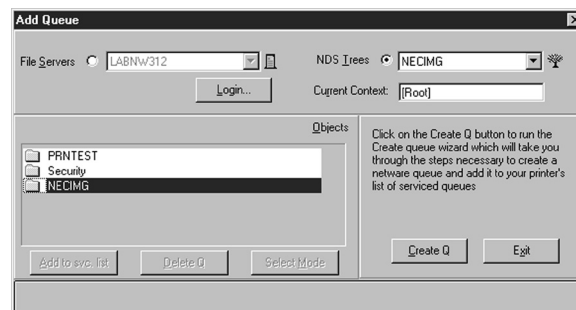
1. Go to a PC that is running NPM.
2. Click the Windows **Start** button, point to **Programs**, then **NEC Network Printer Manager**, and click **Network Printer Manager** to start NEC Network Printer Manager. When NPM starts, it begins to search the network for the print servers. All print servers discovered by NPM in the LAN will be listed in the NPM main window.



3. Right-click on the print server icon where you want to create a print queue.
4. Click on the **Network Interface** option.
5. Click on the **NetWare** tab to bring it to the front.

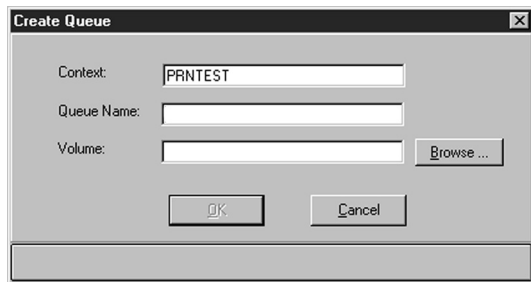


6. Click **Add Q** to open the *Add Queue* dialog box.

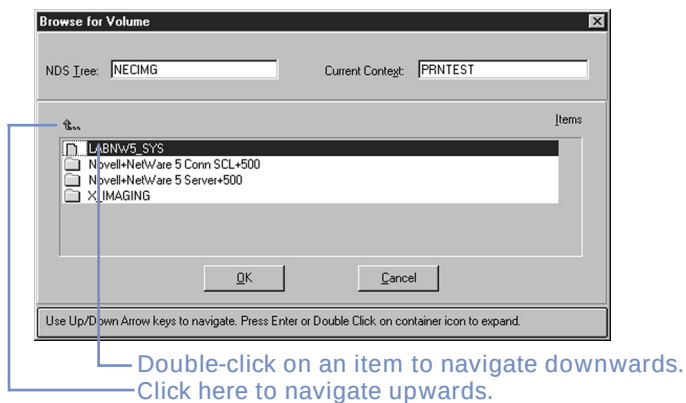


7. From the **Objects** list, navigate to where you want to create a print queue.

8. Click **Create Queue** to open the *Create Queue* dialog box.



9. In the **Queue Name** text box, type in a name for the new queue.
10. Click **Browse** to open the *Browse for Volume* dialog box.
11. From the **Items** list, navigate to the location of the volume you want to use.



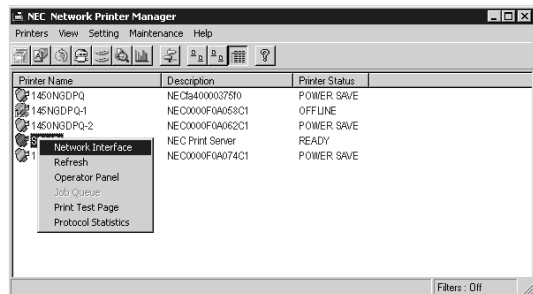
12. Select the volume.
13. Click **OK** to return to the *Create Queue* dialog box.
14. Click **OK** and wait for a message box to appear.
15. When asked to add this queue to the print server's list of service queues, click **Yes** to return to the *Network Interface* dialog box.
16. Click **OK** to accept the configuration.

Now you can configure the individual Windows, Macintosh, and UNIX print clients. See the following sections for instructions.

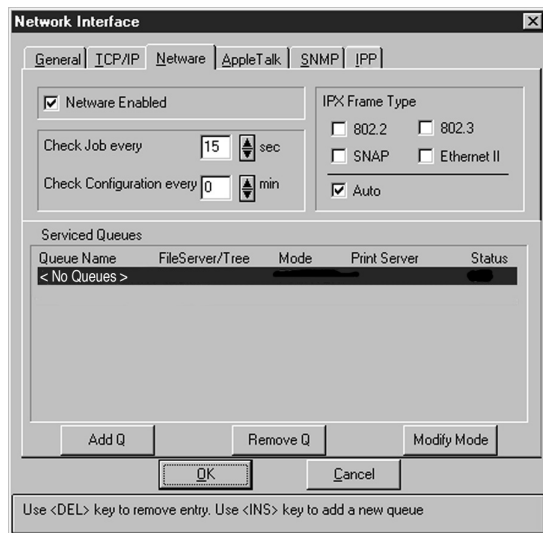
- To configure a Windows 95/98 Client, see “Windows 95/98 Clients” on page 26.
- To configure a Windows NT/2000 Client, see “Windows NT/2000 Clients” on page 27.
- To configure a Macintosh Client, see “Macintosh Networks” on page 29.
- To configure a UNIX Client, see “Configuration Procedures” on page 32.

Configuring a Bindery Queue

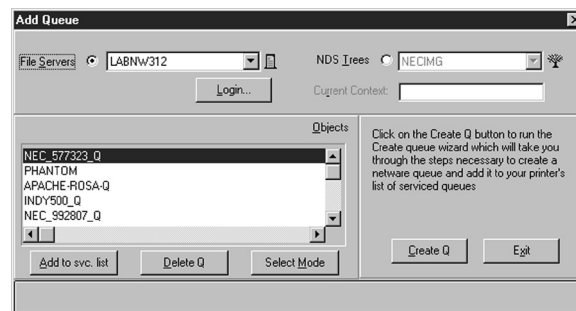
1. Go to a PC that is running NPM.
2. Click the Windows **Start** button, point to **Programs**, then **NEC Network Printer Manager**, and click **Network Printer Manager** to start NEC Network Printer Manager. When NPM starts, it begins to search the network for print servers. All print servers discovered by NPM in the LAN will be listed in the NPM main window.



3. Double-click on your new printer to open the *Network Interface* window.
4. Click on the **NetWare** tab to bring it to the front.



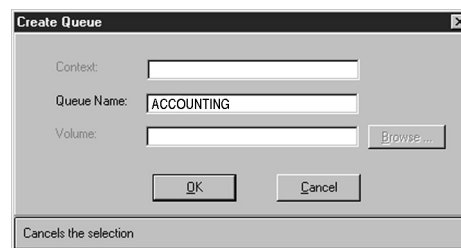
5. Click **Add Q** to open the *Add Queue* dialog box.



6. Select an existing *queue*, or click **Create Q** to open the *Create Queue* dialog box.
7. To select an existing queue,
 - a. Select queue name from the **Objects** list
 - b. Click on the **Add to svc. list** button
 - c. The new assigned queue name will appear in the **Serviced Queues** list

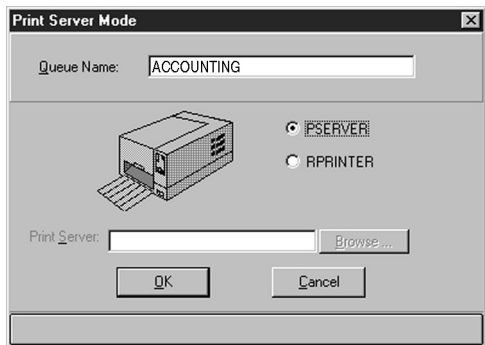
then go to Step 10, otherwise, continue with the next step.

8. From the *Create Queue* dialog box, type in a name for your new print queue.



9. Click **OK** to open the *Print Server Mode* dialog box.

10. Select **Pserver**.



11. Click **OK** and wait for a message box to appear.
12. When asked to add this queue to the print server's list of service queues, click **Yes** to return to the *Network Interface* dialog box.
13. Click **OK** to accept the configuration.

Now you can configure the individual Windows, Macintosh, and UNIX print clients. See the following sections for instructions.

- To configure a WIndows 95/98 Client, see the next column.
- To configure a Windows NT/2000 Client, see the next page.
- To configure a Macintosh Client, see “Macintosh Networks” on page 29.
- To configure a UNIX Client, see “Configuration Procedures” on page 32.

CONFIGURING PRINTER DRIVERS

Windows 95/98 Clients

To begin installing the SuperScript 1450 printer driver, select **Add Printer** in the **Printers** folder (**Start** → **Settings** → **Printers** → **Add Printer**) to add the desired driver.

1. Click **Next** in the first Add Printer Wizard window.
2. Select **Network printer** and click **Next**.
3. Type the network path or the queue name of the printer. If you don't know its name, click **Browse** to view available network printers.

note: Choose any print queue on Windows NT or NetWare servers that you have access rights.

4. Navigate on the network to select the Novell server queue created for the NEC SuperScript 1450N. Select the network printer you want to add and click **OK**.
5. Click on the **Have Disk...** button.
6. Click on the **Browse** button to navigate the *SuperScript 1400 Series Solutions CD* to one of the following locations.
PCL6: [SS1450\Diskette\Win98\PCL6\Disk1](#)
PS: [SS1450\Diskette\Win98\PS\Disk1](#)
7. Select the appropriate printer driver.

You are now ready to print to the SuperScript 1450N through the Novell Server queue.

Windows NT/2000 Clients

There are two methods for configuring a NetWare Queue for a Windows NT/2000 Client.

Network Printer Server Port

The recommended method to install the Novell Queue.

note: NT will not allow the user to change the name of this network printer. The printer icon created will have the Queue's name instead of the driver name. Performance on the other hand, should be better if the printer uses the Network Printer Server port instead of the Captured Printer Port.

1. Use **Add Printer**, and select **Network printer server**. Click **Next**.
2. In the **Connect to Printer** window, browse to the printer queue created for the SuperScript 1450, select it, and click **OK**.
3. In the warning window, select **OK** to install the SuperScript 1450 printer driver.
4. Click on the **Have Disk...** button.
5. Click on the **Browse** button to navigate the *SuperScript 1400 Series Solutions CD* to one of the following locations.
PCL6: `SS1450\Diskette\WinNT4\PCL6\Disk1`
PS: `SS1450\Diskette\WinNT4\PS\Disk1`

You are now ready to print to the SuperScript 1450N through the Novell Server queue.

Captured Printer Port

The first method involves creating a Capture Printer Port command to capture the Novell Queue and using it to connect to the printer.

note: This method allows the user the ability to rename the printer.

1. Install the printer driver for the SuperScript 1450 utilizing **Add Printer** from the **Printers** folder.
2. Select that **My Computer** will manage the printer.
3. Select the **Add Port** button.
4. Select **Local Port** and press the **New Port...** button.
5. When Windows asks for a port name, type in `LPT9:` and click **OK**.
6. Select **OK** in the next prompt. Then select **Close** to return to the **Add Printer Wizard**. LPT9 will be selected as the port.

Now you can capture the NetWare Queue created for the SuperScript 1450 on the Novell Server by using Network Printer Manager. To add the NetWare Queue to the SuperScript 1450, follow these steps.

1. Using NT Explorer, navigate to the Novell Server queue. Click on the queue that you will attach your printer to, right click, and select **Capture Printer Port**.
2. Select which port the Novell queue will use, and select reconnect at logon. In this example it is `LPT9`.

The printer's local port should now be mapped to the Novell Netware Queue and should now be ready to send jobs over the network.

CHAPTER 6

MACINTOSH NETWORKS

INTRODUCTION

The following chapter contains information on how to install the SuperScript 1450N software for the Macintosh.

note: Although the printer's Network Printer Manager is not available for Macintosh users, the printer's web pages are accessible to make some configuration changes to the printer.

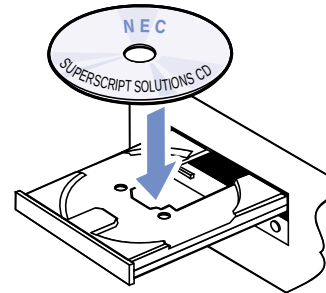
MACINTOSH REQUIREMENTS

Before you configure a Macintosh computer to communicate with the printer, the following requirements must be met.

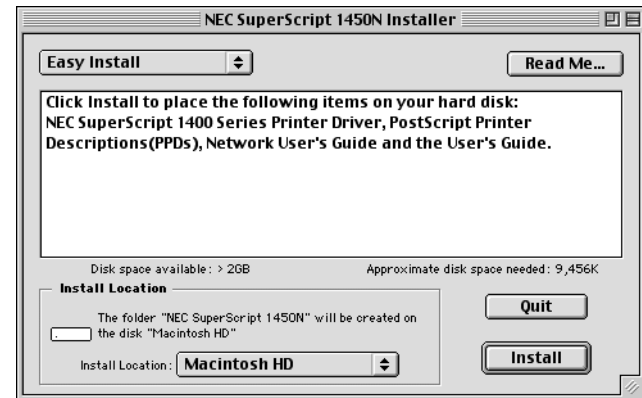
- EtherTalk software must be installed in your computer and active.
- The operating system must be Mac OS 7.1 or higher but Mac OS 8.6 is highly recommended.
- The standard Macintosh LaserWriter 8 printer driver must be installed. Check the Chooser in the Apple menu to assure that it is installed. If it isn't, use the Mac OS help system for information about installing it.

INSTALLING THE NEC SUPERSCRIPT 1450 PPD

1. Insert the *SuperScript 1400 Series Solutions CD* into the Macintosh and the **SuperScript Series CD** window will appear.

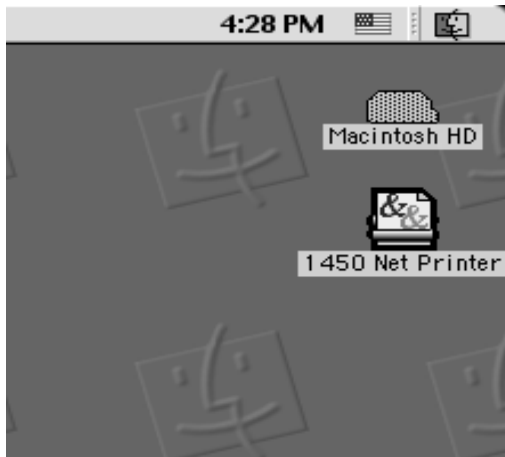


2. Double-click the **SuperScript 1450N Installer** icon to begin installing the PPD. Follow the instructions presented on the monitor.



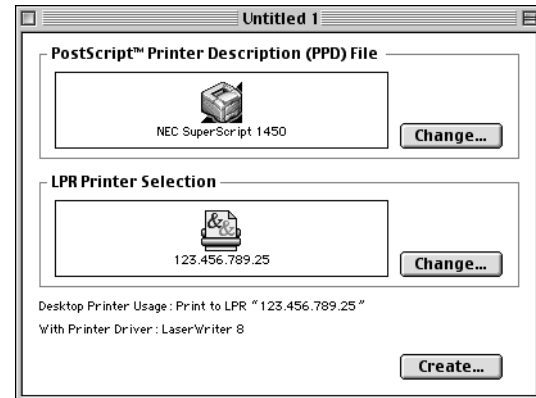
CONFIGURING TO USE THE PRINTER OVER A NETWORK

1. Select **Chooser** from the **Apple** menu.
2. In the **Chooser**, select the **LaserWriter 8** icon.
3. Select the appropriate zone in the **AppleTalk Zones** window.
4. A list of printers will appear on the right. Select the appropriate NEC 1450 printer.
5. Click the **Create...** button.
6. The LaserWriter 8 driver will configure the NEC SuperScript 1450 using the **NEC SuperScript 1450 PPD**, and an icon for the printer will appear on the desktop.



CONFIGURING TO USE LPR PRINTING

1. Open the **Desktop Printer Utility** located in Apple Extras: Apple LaserWriter Software.
2. Select **Printer (LPR)** from the window, and click **OK**.



3. Click the first **Change** button to change the PPD to the **NEC SuperScript 1450 PPD**.
4. Click the second **Change** button to type the IP Address for the printer.
5. Click the **Create...** button to save and name the printer and an icon for the printer will appear on the desktop.

CHAPTER 7

UNIX NETWORKS

INTRODUCTION

Here we provide basic instructions for installing the printer on your UNIX system in Solaris 2.x and SCO. For additional information, refer to your operating system administration manuals.

CONFIGURING THE IP ADDRESS

The 1450N must be assigned an IP address and routing parameters. We suggest you use the instructions in “Assigning the IP Address with NPM on page 11.

SETTING UP YOUR PRINTING MODE

Use these instructions to set up the printer for SCO Open Server Enterprise 5.0 and Solaris 2.x.

Installing the Printer in Your System

lpd is an implementation of the standard UNIX line printer daemon which lets you print across a TCP/IP network, without the need to install software on your workstation, and with all filtering and banners done by the 1450N. Remote printing uses the same commands (lpr, lpq, lpc) as local printing.

The process begins when the LPR call finds a printer on a remote system by looking at the remote (rm) entry in the `/etc/printcap` file for that printer. LPR handles a print job for a remote printer by opening a connection with the lpd process on the remote system and sending the data file (followed by the control file containing control information for this job) to the remote system. The printer-based lpd then filters the data and prints the job according to information contained in the control file and its own printcap file.

The following sections give specific lpd setup instructions for various systems. You must log in as *root* in order to execute the commands.

Adding the Printer to Solaris 2.x

Log into your system as root. Add the printer's IP address you already assigned into the `/etc/hosts` file. Using `lpsystem` follow these steps to open a terminal and enter the printer's IP address from the command line.

1. `lpsystem -t bsd <IP address of printer> [ENTER]`
Enter the 1450N print server host name from the `/etc/hosts` file. Your system may want its IP address instead of the remote host name.
2. `lpadmin -p <printrname> -s <remote host name or IP address> [ENTER]`
note: There is no space after the remote host name.
3. `Enable<printrname> [ENTER]`
4. `Accept<printrname> [ENTER]`

Then, make sure that the printer content type is set to PS by typing `lpstat -p -l` to display the current printer settings. If it is not set to PS, type the following on the command line to change the printer settings.

5. `lpadmin -p <printrname> -I postscript [ENTER]`
6. `lpadmin -p <printrname> -T PS [ENTER]`
note: Steps 5 and 6 apply only if the printer has a PS SIMM.
7. Print a test page:
`lpr -p <printrname> /etc/hosts [ENTER]`

To test that the printer was installed into the system, send a print job using any application in your operating system. Make sure that the printer you choose is the SuperScript 1450N that you installed earlier.

note: If the printer does not have a PS SIMM, you may experience “stepping text”.

To Fix “Stepping Text” in NPM

1. Select **Operator Panel** from the **Settings** drop-down list.
2. Select the **Printer Menu** tab.
3. Select **Yes** next to **Auto Carriage Return**.
4. Print a test page.

Configuration Procedures

To Configure the Host Table:

1. Login into the computer as *root*.
2. Move to a shell command prompt.
3. Type `vi /etc/hosts` then press **ENTER** to display the Host Table (also known as the look-up table).
4. At the bottom of the table, add the IP address and a host name for the printer.
5. Press **esc** to exit edit mode.
6. Type `:wq!` then press **ENTER** to save the changes and exit the editor.

After the host table has been configured, add access to the printer.

To Add Access to the Printer:

1. From a shell prompt, type `admintool &` then press **ENTER** to start Admintool.
2. From the **Browse** menu, select **Printers** to list all the printers connected to the network.
3. From the **Edit** menu, point to **Add**, then select **Access to printer** to open the Add Access to Printer dialog box.
4. In the **Printer Name** text box, type in a name for the printer.
5. In the **Printer Server** text box, type in a server name for the printer.
Use the host name that was assigned to the printer. The host name was assigned in the Host Table.
6. In the **Description** text box, type in a description of the printer; for example, its location.
7. If you want this printer to be the default printer, select the **Default Printer** check box.
8. Click **Apply** to return to the Admintool main window.

Your UNIX computer is now ready to send print jobs to the printer.

To Print a File:

To print a file, move to a command prompt, then enter the following command, where *filename* is the name of the file you want to print.

```
/usr/ucb/lpr filename
```

Users can edit their startup file by including the path to the *lpr* program so that they do not have to always type `/usr/ucb` when they want to print.

Adding the Printer to SCO OpenServer 5.x

Log into your system as root. Add the printer's IP address you already assigned into the `/etc/hosts` file. Using `lpsystem` follow these steps to open a terminal and enter the printer's IP address from the command line.

1. Set up the SuperScript 1450N printer as a remote printer on a host that sends jobs to a Print Server using `lpd`. Use the following procedures to do this:
At the prompt, type: `mkdev rlp`
note: You cannot run `mkdev rlp` twice. If you have additional printers to be configured, use the `rlpconf` command.
2. You will now be asked a series of questions. Respond as follows. Do you want to install or remove a remote printer? Type: `I`
3. Do you want to change printer description file `/etc/printcap`? Type: `Y`
4. Write a printer name. For example, type: `lprprinter1`
5. Is `lprprinter1` a remote printer or a local printer? Type: `R`
6. Enter remote host name: type host name entered in `printcap` for the 1450N. For example, type: `lprprinter`
7. Confirm the information you have entered. Type: `Y`
8. Confirm the preceding connection as your system default. Type: `Y`
9. Enter another printer name or quit setup. Type: `Q`
10. Do you want to start the remote daemon now? Type: `Y`
11. Using a line editor of your choice, verify the following on your `/etc/printcap` file. If necessary, use the following steps to change the "rp" entry.
`lprprinter1:\`
`:lp=\`
`:rm=lprprinter:\`
`:rp=PORT1:\`
`:sd=/usr/spool/lpd/lprprinter1:`
12. Change the `:rp=lprprinter:` entry to `:rp=PORT1.`
13. Set this printer as the default printer and print a page, for example, from a browser, to verify that the installation was successful.

note: This information was based on the sample input in the earlier steps. Actual parameters may vary depending on prior setup.

CHAPTER 8

LINUX NETWORKS

INTRODUCTION

This section describes the hardware and software requirements for computers running on Red Hat 6.0 and higher, and how to install the SuperScript 1450/1450N software.

Software Requirements

For computers running a Linux operating system to connect to the printer, they must meet two software requirements:

- The operating system must be Red Hat 6.0 or higher.
- The NEC SuperScript 1450/1450N software must be installed.

Hardware Requirements

Hardware requirements are categorized into requirements for the computer and requirements for the printer.

Computer Hardware Requirements

The hardware required by your computer is a parallel port.

Printer Hardware Requirements

The printer comes with a built-in parallel port which can be used to connect the printer to the computer.

INSTALLING THE SOFTWARE

Installing the SuperScript 1450 Printer Driver involves inserting the *SuperScript 1400 Series Solutions CD* into your computer and following these instructions.

Copy Linux files and run install.sh

1. `>mkdir tmp` (Make a working directory)
2. `>mcopy/mnt/cdrom/linux/*. * tmp` (Copy the setup script files)
3. `>cd tmp` (Change the current directory to the working directory)
4. `>su` (Get the superuser's authority)
`>chmod 764 install.sh` (Change the file permission to executable)
5. `>./install.sh` (Run the installation program)
6. `>exit` (Return to normal user authority)
7. `>cd ..` (Return to the parent directory)
8. `>rm -rf tmp` (Delete the working directory)

Setting Up Your Printer Driver

1. Run PrintTool program in superuser or authorized mode using `> printtool &`
note: You must be logged in as *root* in order to run *printtool*.
2. Click the **Add** button and select the proper printer type for parallel connection. Click **OK**.
3. Set the proper setting values in **Edit XXXXXXXXX Entry** window. (For example, Name = `lp1`; Spool Directory = `...../lp1`) and click the **Select** button of the **Input Filter**.
note: (XXXXXXX is the printer type you select.)
4. Add the needed printer driver for the emulation that your printer supports. (For example, select **NEC SuperScript PCL5 Compatible** and check **Fix** stair-stepping text.)
5. Click the **OK** button twice.
6. Print a test page from PrintTool.

PRINTING

Print your documents using `lpr` or configure the printer setup of your application and select the print command of the application.

For example: `lpr -Plp1 yourdocument.ps`

note: `lp1` is the printer device name you have installed.
To print PS documents you need to have the PS SIMM installed.

Documents can also be printed using `groff`.

1. Install the printer as `lp1` and name it. For example, `J81` with `131.241.45.81` as the IP address.
2. Your printer must be the Default Printer. To check this, run `vi/etc/printcap` and you should see the word **Default** next to the printer name.
3. Create a PS file.
`groff-Tps-man/usr/man/man1/chown.1>/tmp/test.ps`
`cd/tmp/test.ps`
4. This command will change your printer to Default.
`export PRINTER=J81`
`echo $PRINTER should respond J81`
(It might be better to add this in the `$HOME/.bashrc` file.)
5. Test the printer using the command: `lpr test.ps`
6. Print from `groff` using the command:
`groff-Tlj4-man-1/usr/man/man1/chown.1`
7. An alternative approach to printing from `groff` (for a PS printer) is to use the command:
`groff-Tps-man/usr/man/man1/chown.1|lpr-PJ81`

CHAPTER 9

NETWORK SOFTWARE

NETWORK PRINTER MANAGER

Introduction

The SuperScript 1450N Network Printer Manager (NPM) is a multi-purpose tool for administering networked SuperScript 1450N printers. Use the NPM for performing the following administrative tasks.

- Viewing all SuperScript 1450N printers connected to the network
- Viewing the general settings for a specific printer
- Viewing the network interface settings for a specific printer
- Creating NetWare queues and servers
- Viewing protocol statistics for a specific printer
- Viewing the job queue for a specific printer
- Viewing the operational status of a specific printer
- Creating alerts for monitoring specific printers
- Upgrading the NIC firmware for a specific printer
- Adding ports to networked printer drivers
- Starting the Add Printer Wizard
- Viewing a printer driver's properties sheet
- Printing test pages
- Creating IPP Client and IPP Servers
- Supports Windows operating systems only

note: Please be advised that the NPM utility used to manage printers on a network does not support upgrading the flash firmware across different networks. In order to circumvent this limitation, you need to install the NPM utility on a PC located on the same network as the printer you are interested in upgrading.

Starting NPM

To Start NPM:

- From the Windows **Start** button, point to **Programs** then **NEC Network Printer Manager**, then select **Network Printer Manager**.

Procedures

For instructions about creating queues for networks using NetWare, see “Creating Netware Print Queues Using NPM” on page 26.

For instructions about using NPM to upgrade the firmware for a printer’s controller board, see Appendix D on page 65.

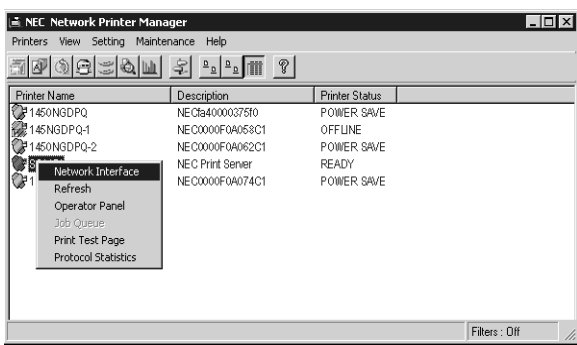
For detailed information about using NPM to perform other tasks, see Network Printer Manager Help.

To View Help:

1. Start Network Printer Manager.
2. From the **Help** menu, select **Contents** to start the help system.

Main Window

When NPM is started, it begins to search the network for all SuperScript 1450N printers that are connected to the local area network. Once found, they are listed in the main window. The name, description, status, and to display the IP address. Select **View**—>**Details**—>**Columns** and select **IP Address**.



Printers Menu

Use the Printers menu for adding a printer port, starting the Add Printer Wizard, viewing a printer driver, viewing a job queue for a specific printer, and for exiting the NPM.

View Menu

Use the View menu for controlling how information is displayed in the main window and for displaying the button bar.

Settings Menu

Use the Settings menu for viewing the network interface properties and for creating alerts for a specific printer.

Maintenance Menu

Use the Maintenance menu for viewing the operational status, protocol statistics, and printing a test page for specific printer. Printer firmware is upgraded from here.

Help Menu

Use the Help menu for starting the NPM help system, and for determining which version of the NPM you're running.

Network Interface Window

The **Network Interface** window can be opened from the **Settings** menu. Use this window for viewing and configuring the NIC for a specific printer. It can also be used for creating NetWare printer queues and servers.

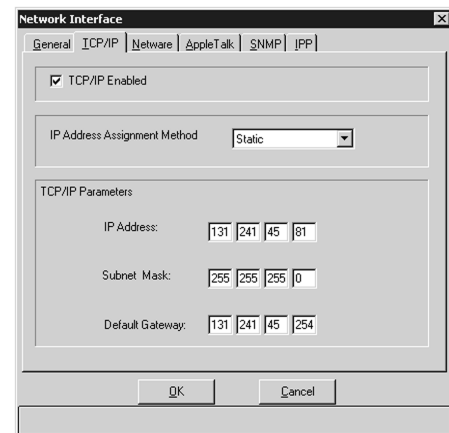
General

This tab provides general information about the printer. You can also set a Password from this tab.



TCP/IP

Use this tab to assign the IP Address to the printer.



NetWare

Use this tab to enable Network and set various parameters.



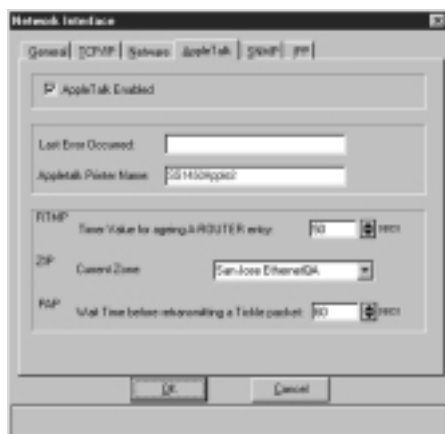
SNMP

Use this tab to enable Authentication Traps and associated parameters.



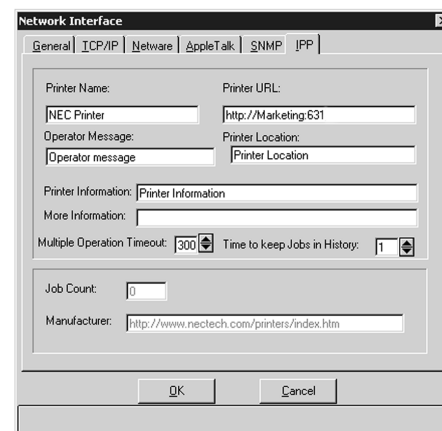
AppleTalk

Use this tab to enable AppleTalk and set various parameters.



IPP

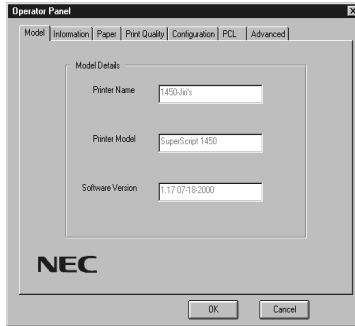
Use this tab to set Internet Printing Protocol parameters.



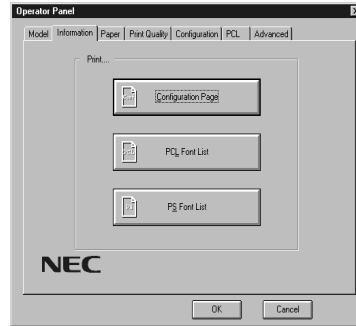
Operator Panel Window

The Operator Panel window is started from the **Setting** menu by selecting **Operator Panel**. Use the tabs in this window for adjusting the basic properties for a specific printer.

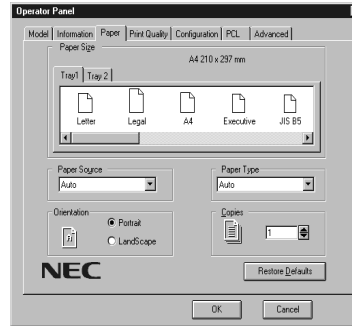
Model



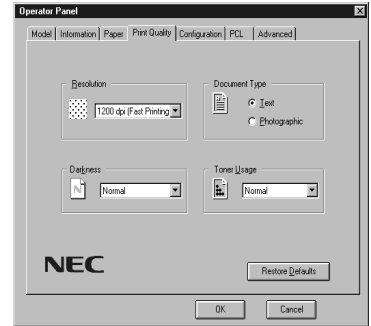
Information



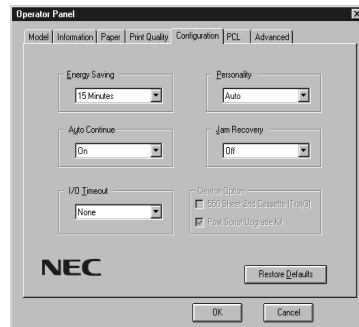
Page



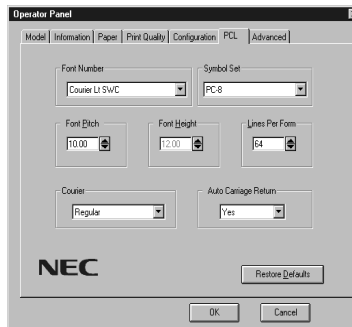
Print Quality



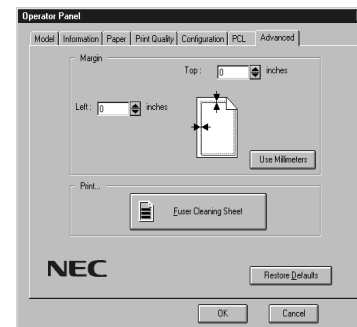
Configuration



PCL



Advanced



Alerts Window

Use the *Alerts* window for monitoring specific printers and their conditions. When a condition occurs with the printer, an alert message box will appear (outside of NPM). Alert messages can be recorded in a log file.

To set an alert:

1. From the **Settings** menu, select **Alerts** to open the *Alerts* window.
2. From the **Printer Available** list, select the printer you want to monitor.
3. Click **Add** to move the printer to the **Printer to Monitor** list.
4. Assure **Enable Alerts** is selected.
5. Click the **Alerts** tab to bring it to the front.
6. From the **Available Alerts** list, select the alert you want to monitor.
7. Click **Add** to move the alert to the **Active Alerts** list.
8. If you want to record the alerts, click **Enable Logging of Alerts**, then click **Browse** to select a location to store the alert log.

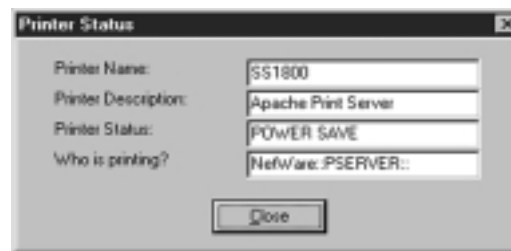
The contents of the log can be viewed from the *View Log* tab.

9. Click **OK**.

When the Network Printer Manager (NPM) is made aware of an alert, it will display an message outside the NPM.

Printer Status Window

The *Printer Status* window can be started from the **Maintenance** menu by selecting **Printer Status**. Use it for viewing the operational state of a specific printer. Shown below is the *Printer Status* window.



General



Alerts



Protocol Statistics Window

The *Protocol Statistics* window is started from the **Settings** menu. Use it for viewing packet, framing, and error activity at a specific printer's NIC. Five tabs are used for presenting information about the following types of network traffic.

Upgrading the Firmware

Upgrading the Controller Board firmware is described in Appendix D.

TCP/IP Traffic



IPX Traffic



AppleTalk Traffic



SNMP Traffic



DLC Traffic



SUPERSCRIPT 1450/1450N WEB PAGES

Introduction

The SuperScript 1450/1450N Web Pages are a web site for viewing and administering the printer. The web pages contain many of the same controls as the NEC Network Printer Manager (NPM). The main difference is that NPM can create NetWare printer and server queues.

Use the web pages for performing the following administrative tasks.

- Viewing printer operational status.
- Setting up a printer.
- Viewing instructions about using a printer.
- Viewing a printer's settings.
- Viewing a printer's network interface settings.
- Viewing a printer's protocol statistics.
- Printing a Network Configuration page.

Installation

There is no installation required. The pages are located directly on the printer's Controller Board.

Locating the Home Page

After the printer is connected to your network, and assigned an IP address, any popular web browser can be used to navigate to the SuperScript 1450N printer's IP address.

1. Open your Internet browser on your computer.

note: It should be Netscape Navigator 4.x and higher, Microsoft Internet Explorer 4.x and higher, or any equivalent browser.

2. In the Location box on Netscape Navigator, or the Address box on Microsoft Internet Explorer, type: "http://" followed by the IP address, and then press Return.

note: You may set a bookmark for easy access.



Home Page

The printer's home page is the starting point for navigating to all the other printer web pages. The left side of the page displays information about the operational status for a specific printer.

Network Administration Pages

Use the network administration pages for viewing and configuring the network settings for a specific printer.

General Information

Use the *General Information* page for getting a general view of the entire NIC configuration. From this page, click on **Admin** to view the individual Network Administration pages.



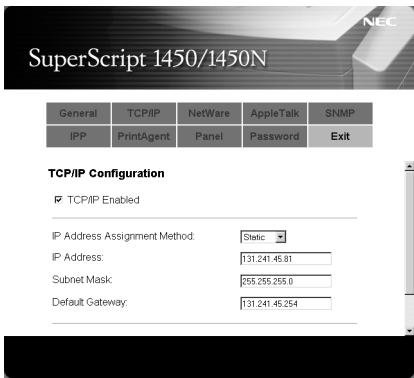
General Configuration

Use this page for naming the printer and creating password protection.



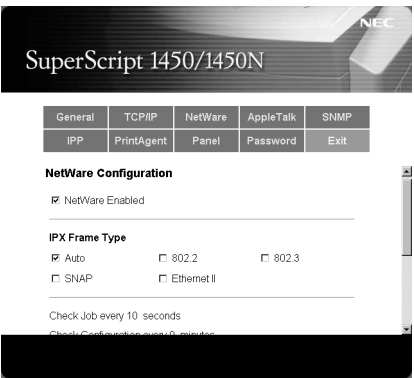
TCP/IP Configuration

Use this page for adjusting the network addressing for the NIC.



NetWare Configuration

Use this page for turning on and adjusting the NetWare protocol stack.



AppleTalk Configuration

Use this page for turning on the AppleTalk protocol stack and for giving the printer an AppleTalk Printer Name.

The screenshot shows the 'AppleTalk Configuration' window. At the top, there's a title bar with 'SuperScript 1450/1450N' and the NEC logo. Below the title bar is a menu bar with 'General', 'TCP/IP', 'NetWare', 'AppleTalk', and 'SNMP'. Under 'AppleTalk', there are sub-menus: 'General', 'PrintAgent', 'Panel', 'Password', and 'Exit'. The main content area has a section titled 'AppleTalk Configuration' with a checkbox 'AppleTalk Enabled' which is checked. Below this is a text field for 'AppleTalk Printer Name' containing 'SS1450Apple2'. There's also a 'Last Error Occurred:' label and a 'RTMP (timer value for aging A-ROUTER entity)' field with a value of '50'.

SNMP Community

The screenshot shows the 'SNMP Configuration' window. At the top, there's a title bar with 'SuperScript 1450/1450N' and the NEC logo. Below the title bar is a menu bar with 'General', 'TCP/IP', 'NetWare', 'AppleTalk', and 'SNMP'. Under 'SNMP', there are sub-menus: 'General', 'PrintAgent', 'Panel', 'Password', and 'Exit'. The main content area has a section titled 'SNMP Configuration' with a tabbed interface showing 'Traps' and 'Community Names'. The 'Community Names' tab is active. It contains two sections: 'Community Name 1' with a checked checkbox, a text field for 'Community Name' containing 'public', and 'Access Permissions' with 'Read Access' checked and 'Write Access' unchecked. 'Community Name 2' has an unchecked checkbox, a text field for 'Community Name', and 'Access Permissions' with both 'Read Access' and 'Write Access' unchecked.

SNMP Configuration

Use this page for turning on SNMP and for configuring SNMP traps. Two pages are used for making the configurations: the *SNMP Trap Configuration* page, and the *SNMP Community Configuration* page.

SNMP Trap

The screenshot shows the 'SNMP Configuration' window with the 'Traps' tab selected. It contains three sections: 'Enable Authentication Traps' with an unchecked checkbox, 'Enable Address Pair 1' with an unchecked checkbox, an 'IP Address' field containing '0.0.0.0', and a 'Community Name' field. 'Enable Address Pair 2' has an unchecked checkbox and an 'IP Address' field containing '0.0.0.0'.

IPP Configuration

Use this page for configuring IPP.

The screenshot shows the 'IPP Configuration' window. At the top, there's a title bar with 'SuperScript 1450/1450N' and the NEC logo. Below the title bar is a menu bar with 'General', 'TCP/IP', 'NetWare', 'AppleTalk', and 'SNMP'. Under 'SNMP', there are sub-menus: 'General', 'PrintAgent', 'Panel', 'Password', and 'Exit'. The main content area has a section titled 'IPP Configuration' with fields for 'Printer Name' (containing 'NEC Printer'), 'Printer URL' (containing 'http://131.241.45.81:631'), 'Operator Message' (containing 'Operator message'), 'Printer Location' (containing 'Printer Location'), 'Printer Information' (containing 'Printer Information'), and 'More Information'.

Panel

Use the **Panel** button to access the pages for specifying various printer settings. To return to the General Configuration main page, click on **Back**.

Information Menu

SuperScript 1450/1450N

Information

Paper

Print Quality

Configuration

PCL

Advanced

Back

Information Menu

Configuration Sheet

Print

PCL Font List

Print

Configuration Menu

SuperScript 1450/1450N

Information

Paper

Print Quality

Configuration

PCL

Advanced

Back

Configuration Menu

Energy Saving: Off

Personality: Auto

Auto Continue: On

Jam Recovery: On

I/O Timeout: 0

Device Option: ☐ 550-Sheet 2nd Cassette (Tray 3)

Paper Menu

SuperScript 1450/1450N

Information

Paper

Print Quality

Configuration

PCL

Advanced

Back

Paper Menu

Tray 1 Paper Size: Letter (8 1/2 x 11 in)

Tray 2 Paper Size: Folio (8 1/2 x 13 in)

Paper Source: Auto Select

Paper Type: Auto

Orientation: Portrait

Copies: 1

PCL Menu

SuperScript 1450/1450N

Information

Paper

Print Quality

Configuration

PCL

Advanced

Back

PCL Menu

Font Number: 1

Symbol Set: Roman-8

Font Pitch: 0.00

Font Height: 0.00

Lines per Form: 0

Counter: Regular

Append CR to LF: No

Print Quality Menu

SuperScript 1450/1450N

Information

Paper

Print Quality

Configuration

PCL

Advanced

Back

Print Quality Menu

Resolution: 300 dpi

Document Type: Text

Darkness: Light

Toner Usage: Normal

Apply

Reset

Advanced Menu

SuperScript 1450/1450N

Information

Paper

Print Quality

Configuration

PCL

Advanced

Back

Advanced Menu

Top Margin: 0.0 inches

Left Margin: 0.0 inches

Use Millimeters

Internal Cleaning Sheet

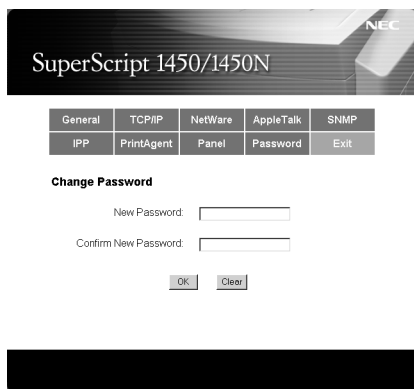
Print

Apply

Reset

Change Password

Use the *Change Password* page for changing a password. From the Network Administration main page, click the **Password** button to view this page.



NEC IPP CLIENT

Introduction

NEC Internet Printing Protocol (IPP) is a client-server type protocol that allows the server side to be either a separate print server or a printer with embedded networking capabilities.

The NEC IPP Client is a program that transmits data to the NEC IPP Server using NEC IPP.

The NEC IPP Server is installed in SuperScript printers with the Network Interface Card (NIC).

The user is able to print by transmitting data to be printed through the NEC IPP Client program to the NEC IPP Server on the host computer supporting TCP/IP.

NEC IPP is an application level protocol that can be used for distributed printing using Internet tools and technologies. IPP supports network printing over the Internet as well as LAN environments. Since print data can be transmitted to distant printers, NEC IPP provides inquiry about the status of printers and print jobs.

IPP allows the user to do the following:

- Internet printing
- Multiple document handling
- Modification of document properties
- View remote job queue
- View local job queue
- View printer status
- Validate the job before printing

The Address Bar

The Address Bar consists of two buttons. One is for specifying the printer's address, and the other is for inquiring about the printer's attributes.

To retrieve printer attributes, the printer address has to be specified in the Links field with the proper URL format, e.g., <http://165.213.105.80:631>.

To inquire about printer attributes or document data to be printed, the printer address should follow the URL format, i.e., http://printer's_IP_address:631, where **631** is the port number for IPP.

The button for inquiring about printer attributes provides the same information that **Printer Attributes** under the Printer menu provides. Printer attributes are displayed in the printer attributes window if the information is successfully retrieved. Click on the **More Details...** button for more information.

The Document Window

This window allows the user to add or delete “.txt”, PCL and PS documents to be printed, and consists of the following items.

Document Management Window

Displays the file name of the document to be printed.

Add

Click on the **Add** button to add a document to be printed.

Delete

To delete a document, select the document from the Document Management window, and click the **Delete** button.

The Printer Attributes Window

To view the attributes of the printer specified in the Address Bar, click on the printer icon beside the Address Bar. Printer attributes appear in the Printer Attributes window and consist of the following items.

Item	Description
Printer-name	Shows the name of the printer.
Printer-location	Shows the location of the printer.
Printer-info	Shows brief information about the printer.
Printer-more-info	Shows Internet links to web sites or ftp sites that include more information about the printer.
Printer-driver-installed	shows web sites that allow the user to download an up-to-date printer driver for the specified printer.
Printer-make-and-model	Shows the model name of the printer.
Printer-more-info-manufactur	Displays links to web sites that include more information about the specified printer.

The Printer Menu

Properties

Allows the user to specify the properties of the print data before it is transmitted. Only the items supported by the printer are activated. Select an activated item to modify its value in the Properties window.

Item	Description
JP (Job Priority)	Determines job priority. It is activated only if the IPP Server provides a job priority management function.
JH (Job Hold Until)	Allows the user to determine the time at which to print the job at the IPP Server.
JS (Job Sheets)	Allows the user to print a cover sheet for the print job. You can choose the cover sheet format, if the printer provides various formats for cover sheets.

Item	Description
MD (Multiple Document Handling)	Specifies printing order and mode for multiple document handling. It is activated if the IPP Server provides a multiple document handling function, and the printer has more than one output tray.
COP (Copies)	Takes effect if MD is supported, otherwise it is assigned to 1.
FIN (Finishings)	Specifies binding of printed documents such as staple, punch, cover, or bind. It can be used with a printer providing this function.
PR (Page Range)	Specifies page ranges to be printed in the document.
S (Sides)	Determines simplex or duplex printing of the document. It allows the user to specify either horizontal or vertical binding in case of duplex printing.
NP (Number Up)	Specifies the number of pages to be printed on a single printed page.
OR (Orientation Requested)	Specifies page orientation (i.e., portrait or landscape)
M (Media)	Specifies paper tray for printing. The user can select one of the available paper trays on the printer.
PS (Printer Resolution)	Determines print resolution. It can be used to modify default resolution information specified in the print data. However, a higher resolution than the original resolution of the document cannot be applied to the printing of the document.
PQ (Print Quality)	Determines print quality such as print density or print mode.

Item	Description
DF (Document Format)	Allows the user to change the default document format. The default document format is determined depending on the driver that created the print data. Application/Ocetec-stream, which provides an automatic format recognition function, is recommended to avoid an abnormal print result.
DN (Document Natural Language)	Specifies the language of the print data.
C (Compression)	This function can only be used if the printer provides a compressed print data extraction function.

Local Job Queue

Displays the details of your own print job(s) such as file name, printer address, date/time, original/processed size, and status. In addition, it allows you to cancel processing or waiting jobs listed in the Local job Queue. In the case that the job is successfully cancelled, the IPP Client will display a message telling you that the job was successfully cancelled.

Remote Job Queue

Displays the details of all print jobs such as file name, printer URL, job URL, and job ID. It allows the user to cancel their own job listed in the Remote Job Queue by clicking on the **Cancel Job** button, and update information by clicking on the **Update Information** button. By clicking on **Details**, the user can inquire about the print format of the transmitted print data.

Printer Attributes

Displays attributes of the specified printer such as printer name, location, detailed information, model name, and printer driver address. To view printer status and various IPP functions supported by the printer, click on the **More Info** button.

Exit

Exits the IPP Client program.

Operations Menu

This menu allows the user to manage and print documents to be printed.

Print Job

Allows the user to print specified documents.

Select File

Allows the user to select a document file to be printed from the print list in the document window.

Delete File

Allows the user to delete a document file to be printed from the print list in the document window.

Options Menu

This menu allows you to control functions of the IPP Client depending on the user's settings. A submenu, **Customize Options** provides the following options.

Properties Retrieval Method

Allows the user to retrieve printer properties or attributes from either the local database, or the remote printer. The properties retrieval is performed as if "Contact printer" were selected for the following cases, even if "Take from local database" is selected.

1. Accessing the remote printer properties for the first time.
2. The validation period of the properties in the local database is expired.

Validate the Job Before Printing

Allows the user to verify in advance whether the print data with the specified properties can be properly printed. If it is not possible to print the document with the specified properties, the printer will show the user a related message through the IPP Client and cancels data transmission for print job. This function enables the user to avoid unnecessary data transmission.

Attribute-fidelity

This option can be selected to print the document only when user specified properties can be applied to the print job. If this option is selected and there is at least one property which cannot be applied to the document to be printed, the IPP

Client displays an appropriate message and the printer will not print the document. If this option is not selected, the printer prints the document with only the applicable properties.

Send All Job Template Attributes

The IPP Client transmits documents to be printed with the property information to the printer.

If this option is selected, the IPP Client transmits all property information defined.

If this option is not selected, the IPP Client transmits only updated property information.

However, if the printer properties are retrieved with the "Take from local database" option, the retrieved properties might differ from the printer properties of the printer itself. In this case, the document might not print as expected. To avoid this kind of error, select this option.

Printer Property Information Validation Date

The user can specify a printer property validation period for the local database. The user can input a number by unit of "days." If the validation period of the property information is expired, printer properties or information is retrieved from the printer instead of the local database. The validation period can have a value from 1 to 365.

View Menu

The menu allows the user to show the Tool Bar and/or the Status Bar in the program window.

Tool Bar

This section consists of a Standard Buttons bar and an Address bar.

The Standard Button bar consists of icons linked to frequently used menus including Properties, Local Job Queue, Remote Job Queue, Print, and Help.

The Address bar is one of the basic items used to specify the printer's address, and to inquire about a printer's attributes.

Status Bar

This section is located on the bottom of the program window, and displays brief explanations for selected menu items or buttons. In addition, it displays a brief explanation for the icon pointed to by the mouse.

IPP Settings

Adjusting settings before printing can optimize the transmission of documents to be printed to a printer.

Specifying a Printer

The user can specify the printer wanted by typing the printer's IP address with port number in the **Links** field of the **Address Bar** or by choosing one of the printer URLs in the **Links** pull down menu.

Customizing

The user can customize print options depending on various environmental factors, such as network condition or a printer's properties. The following options are recommended.

Choosing Printer Property Retrieval Method

	Take from local database	Contact the Printer
Network is fast		X
Network is slow	X	
Printer properties are frequently changed		X
Printer properties are not frequently changed	X	

Validate the Job before Printing

The user can validate a print job before data transmission for printing. Though this option causes more network load for verification, the user transmits only data that can be printed. If the user does not select this option, transmission of a document that cannot be printed may occur resulting in unnecessary load to the network, IPP Client, and printer. Thus selecting this option is recommended when the network is fast.

Attribute-fidelity

This option can be selected to print the document only if all specified properties can be applied to the print job.

If this option is selected and there is at least one property which cannot be applied to the document, the printer will not print the document.

If this option is not selected, the printer prints the document with only the applicable properties. The user should select this option to print a document only when all specified properties can be applied to the print job.

Setting Job Properties

Properties, under the Printer menu, allows the user to set the print job properties. the properties window shows job properties that can be modified.

The modified properties, which should be supported by the printer, can be transmitted with the document to be printed. The user can type the values of the properties or select them from the list.

In general, it is recommended to specify the DF (Document Format) property as “application/octet-stream,” which enables the automatic document format recognition function for printing. After setting job properties, they are transmitted with the document to be printed.

IPP Printing

For Internet printing using a conventional printing method, the user can utilize the IPP PortMonitor after installing the IPP Client. To use the functions supported by IPP, the user can use the installed IPP Client.

IPP Client

The IPP Client may transmit the print file created by the printer driver or a pure text file to the printer. the pure text file can be created without any specific process. But the print file should be created with the following procedures.

Converting a Document to a Print File

1. Open the document to be printed using the appropriate program.
2. Select the print function.
3. Choose **Print to File** in the Print dialog window.
4. Click on **Print**.
5. Type the file name to be saved in the window.
6. Select **OK** to save the print file made from the document.

Add Document

The user can add to the print file to be printed from the IPP Client. To add documents to be printed click on the **Add** button in the Document Management window.

Specifying a Printer

The user can specify the printer by specifying the printer’s address in the **Links** field of the **Address Bar**.

Job Properties Configuration and Customization

The user can specify or customize the print job properties after document addition and printer specification.

Print

Click on the **Print** icon, or click on the **Print Job** button from the Operations menu to transmit the document to the printer.

APPENDIX A

TROUBLESHOOTING

BASIC TROUBLESHOOTING

Symptom	Possible Cause or Resolution
NIC not communicating	1. Restart the printer. 2. Set NIC to default settings, restart printer, then configure the NIC. 3. Assure the printer is on.
SNMP communication failure	Perform ping test. If ping test passes, community names may be limited by permissions (see Network Printer Manager).
UNIX host cannot print	1. Verify connection with ping test. 2. Verify printer's name on the host's lookup table. 3. Use lpstat or lpadmin to verify the printer is enabled.
Printer not visible in Chooser	1. Ping the NIC from the Macintosh computer to verify the network connection. 2. If communication is through a router, verify that the router supports AppleTalk.
Printer drops characters	1. If a client is sending PostScript print jobs, assure the PostScript option is installed in the printer. 2. Assure the PostScript SIMM is securely installed. 3. Increase printer memory.
Test page is not printed	Restart the printer.
NIC flash upgrade process failed	Repeat the upgrade process.

NETWORK PRINTING PROBLEMS

Use the checklists in this section to identify the cause of network printing problems. If a problem persists, contact NEC Printer Technical Support at their web site (www.nectech.com) or phone 1-800-632-4650.

Printer Operation Checklist

Verify that the printer is plugged in, turned on, and online—the green Ready light on the Operator Panel should be lit, or nothing will print.

Network Settings Page Checklist

On power-up, the 1450N prints out a Network Configuration Page which has useful information for troubleshooting.

- Check the Network Configuration Page to see which protocols are enabled and active.
- Confirm that the network protocol you configured appears on the page. If not, it should be reconfigured correctly for the network printer.

Network Users Checklist

Determine if other network users can print. If they cannot and they are all on the same network operating system, the problem is most likely in the network configuration.

Recent System Changes Checklist

- Verify that any hardware changes (installations, modifications, removals), to the printer or network, were done correctly.
- If you added a new software application, make sure the program is compatible and installed correctly on the network.

Hardware Connections Checklist

- Be sure that your cable is a Category 5 twisted pair cable with RJ-45 connectors for 10/100Base-T ethernet.
- Check that the network connector is plugged into the RJ-45 connector on the NIC.
- Try another cable to make sure you do not have a bad cable.
- If you are using a 10/100Base-T concentrator hub that does not support the link signal, use Manual Ethernet Port selection instead of the factory default, Automatic Ethernet Port selection.

TROUBLESHOOTING FOR NETWARE

Use the Network Administration Page options to troubleshoot in an IPX environment. The checklists in this section show what to look for.

NetWare Checklist

- Is the NIC name entered correctly? The factory-default name is `NEC_<serial number>`
The serial number is on the back of the NIC and also shown at the top of the Network Settings page.
- Did you assign print queues to the printer? It is recommended you assign each print queue to a specific printer NIC. If print queues are assigned to other network printers, the print jobs may be going to another network printer.
- Did you assign the printer to the type `Remote Other / Unknown`?

If the PCONSOLE settings are correct, the connection between the printer and network may have been broken. Turn the printer off and, using PCONSOLE, wait for the status message Not Connected. Turn the printer on and the status should change to Waiting for Job.

File Server Checklist

- Is there enough disk space on the file server and is it running?
- Is the correct file server associated with the printer? Use PCONSOLE to check.
- Did you have the proper rights to configure the printer?

Computer Checklist

- Is the network loaded onto the computer? See your NetWare documentation.
- Is the application set up to print to the printer? Are you using the correct driver?
- Is the workstation connected to the correct print queue? Print a file and verify that the file goes to the queue.
- Are the print queues assigned to the NIC-connected printer also assigned to another network printer? If they

are, the print jobs may be going to that printer.

- Is AUTO ENDCAP enabled? AUTO ENDCAP lets you send data to a network printer. If it is not enabled, enable it.
- Are text files printing but graphic files not? The printing may be timing out. Use NetWare's PRINTCON or CAPTURE to set a longer time-out period. Set the time to at least two minutes for graphics applications.

NIC Configuration Checklist

If all your hardware connections are correct, check the following

- The Network Settings page shows the status for the selected network interface card. This report includes the status of file servers and queues assigned to a printer along with a description of any problems.
- The printer may not be assigned to the correct print queues. Use PCONSOLE to direct print jobs to the correct queues, then check to see if the print job is in the queue.
- If devices were added or changed, use PCONSOLE to make sure you configured the new devices correctly.
- Make sure the printer name has been entered correctly. If you changed the name using the NIC Home Page, you must also change the name in PCONSOLE.
- You cannot use PCONSOLE Version 1.0 to configure the NIC. Contact Novell for an upgrade.

NIC/File Server/Printer Checklist

Check the following to see if the NIC and file server are sending data to the printer. If the NIC cannot log onto the file server, or cannot service jobs from a file server

- The network printer is not created on that file server. Use PCONSOLE to create the print server on the correct file server.
- Use PCONSOLE to check if the print jobs are being sent to the printer. Be sure the print job is in the print queue and waiting to be printed.

Computer to NIC Connection Checklist

To make sure the computer is communicating with the NIC,

perform these tests.

- Print a file from the workstation and make sure the print job gets to the print queue using PCONSOLE. If the print job does get to the queue, the problem is not with the workstation / NIC connection.
- Use CAPTURE to send data to the printer from a workstation software application. See your NetWare print server manual for information.
- Make sure another printer is not taking the print jobs from the queues before the NIC can service the job. To do this, disable the other printer and send another print job.

NIC Loses Its File Server Connection: If the network printer loses its connection to the file server, it will take approximately 5–10 minutes to reconnect. If the connection is not made after a reasonable amount of time, check the error conditions to troubleshoot the problem.

Unable to Print from a Different Context: You can print from any context providing you have sufficient rights to the print queue context.

TROUBLESHOOTING FOR NPM

Symptom	Possible Cause or Resolution
Printer is not receiving print jobs from NetWare clients	1. Use Network Printer Manager to confirm that the IPX configuration is correct and a print queue is serviceable. 2. Use Pconsole or Nwadmin to inspect the printer's configuration.
Printer does not print jobs from Win32 clients	1. Use Network Printer Manager to determine if the printer is installed. 2. Inspect NIC settings.
Printer does not appear in Network Printer Manager	1. Inspect the connection at NIC. 2. Inspect NetWare file server consoles for error messages. 3. Assure the printer is on. 4. Click refresh.
During Network Printer Manager installation, "Unable to copy sammon.dll" message appears	1. Assure a previous copy of Network Printer Manager has been removed. 2. Assure the computer is restarted after removal. 3. If problem continues, remove the sammon.dll file. It is located at in the \\windows\system directory. 4. Then restart the computer.
"Unable to configure printer notifications" message appears while Network Printer Manager is running.	Assure the computer was restarted after Network Printer Manager was installed.
"Unable to add the Port List..." message appears when using the Network Printer Manager to add a printer port.	1. Assure the computer was restarted after Network Printer Manager was installed. 2. Assure the computer has the TCP/IP or IPX/SPX network protocol stacks running.

TROUBLESHOOTING FOR MACINTOSH

- Is the Macintosh computer connected to the network through Ethernet, and has the correct network port been selected?
- Did you select the correct printer driver, zone, and printer name in the Chooser?
- If you renamed the printer in the Apple Printer Utility, you must turn the printer off then on, and then reselect the printer under its new name in the Chooser.
- If you placed the printer in a new zone, be sure you reselected the zone and the printer name in the Chooser.
- The default name for the printer is *SuperScript 1450N #*, where # is the sequential number of 1450N printers installed. If a user changes the name of SuperScript 1450N 2 to Mary's Printer, the last printer in line will be reassigned the name *SuperScript 1450N 2*, and the printer must be re-selected in the Chooser.

APPENDIX B

MICROSOFT INTERNET PRINTING PROTOCOL

INTRODUCTION

The Microsoft Internet Printing Protocol (IPP) is a part of the Windows 2000 operating system. To use Microsoft IPP, you need to do the following

- Install Windows 2000 server with Internet Information Services (IIS) 5.0
- Test the IIS.
- Use a web browser from another PC to determine if you can see the web server.

There are five steps involved to implement the Microsoft IPP Client program.

1. Set up the SuperScript 1450 printer.
2. Set up the Server IIS.
3. Set up a Win 2000 Client.
4. Set up a Win 95/98 Client.

INSTALLING MICROSOFT IPP

Set Up the SuperScript 1450 Printer

Before a user can send a job to a print queue that is visible by means of print Web pages, driver files must be sent from the print server and installed on the user's system. This installation operation occurs when a user views a print queue's web page and then selects its installation page. (The installation page cannot be replaced with a customized page.)

A user can install a URL-identified printer by running the Add Printer Wizard explicitly. When a user specifies a URL to the Add Printer Wizard, the client always connects to the server using [http](#).

note: This installation method must be used when installing printers that contain their own network cards and are therefore not connected to a server.

The installation process is not customizable beyond specifying the contents of the printer [.inf](#) file, which is the same [.inf](#) file used to install the printer on the print server.

You need to install the printer driver for Windows 2000 and connect the printer. The printer can be connected to LPT1 connected on a network.

1. In the **Printers** folder, select **NEC SuperScript 1450 PS** and right click on **NEC SuperScript 1450 PS Properties**.
2. In the NEC SuperScript 1450 PS Properties window, select the **Ports** tab and checkmark the desired port.
3. In the **Sharing** tab, select **Shared as:**.
4. Click on **Additional Drivers...** to install additional drivers for Win 95/98.
5. In the **Additional Drivers** window, checkmark the **Environments** and **Versions** you want to have installed.
6. In the **Insert Disk** window click **OK**.
7. In the Windows 95/Windows 98 Printer Drivers provide a path for the [.inf](#) file from the *SuperScript 1400 Series Solutions CD*.
For example, [E:\SuperScript 1450 \Diskette\Windows 2000\1400 Series Printer Driver](#)
8. In the **General** tab, select **Print Test Page** to make sure the printer is connected correctly.

Set Up Server IIS

1. In the Windows 2000 Server window, select **Start** → **Programs** → **Administrative Tools** → **Internet Services Manager**.
2. In the Internet Information Services window, right click on **Printers** and select **Properties**.
3. In the Printer Properties window, select the **Directory Security** tab, and click on **Edit...** in the **Anonymous access and authentication control** section.
4. Checkmark **Anonymous access** and click **OK**.
5. In the Virtual Directory tab, make sure **Read** is checked and the Local Path is correct in the Local Path section.
6. Run **mmc** and enable policies, being sure that Web-based printing On is enabled (the default if OFF.)

Set up a Windows 2000 Client

1. Open **IE** [http://131.241.45.116/printers/131.241.45.166=IIS server](http://131.241.45.116/printers/131.241.45.166=IIS%20server).
2. Click on the printer you would like to install.
3. Under **Printer Actions**, click on **Connect**.
4. In the **Add Web Printer Connection** window, click **Yes**.
5. In the **Digital Signature Not Found** window, click **Yes**.
6. In the **Enter Network Password** window, fill in **User Name** and **Password**, and click **OK**. Installation is done.

Set Up a Windows 98 Client

The set up is the same for a Windows 98 Client as the set up for Windows 2000. In case you do not see link **Connect**, you must install additional SW from Microsoft to enable IPP support.

VIEWING PRINT WEB PAGES

Users can view Web pages that display the status of a Windows 2000 print server and its connected printers with any Internet browser executing on any type of client platform. Microsoft provides a set of server-resident HTML files that generate these Web pages. Web pages for the print server and for each server-installed printer can be referenced by a client browser using URLs. Additional pages can be referenced by links from these pages.

For a Windows 2000 print server to support Web pages, it must be running either Windows 2000 Server software with the Microsoft Internet Information Server (ISS), or Windows 2000 Professional software with the Microsoft Peer Web Server.

To view a print server page, a user specifies the following URL format:

HTTP://ServerName/Printers

where **ServerName** is the server name (either a DNS name for Internet connections, or a WINS name for Intranet connections.) The URL points to an HTML file that generates the print server's page.

The server page provides a link to a print queue page for each print queue available on the server. Shared print queues can be accessed by all users. A user can also reference the print queue pages for shared printers by specifying a URL with the following format:

HTTP://ServerName/ShareName

where **ShareName** is the print queue's share name, as specified in its property sheet.

If a user selects a printer's link within the print folder, Microsoft Internet Explorer is automatically started and the print queue pages's URL is accessed. Alternately, as already described, a user can view a print server page or a print queue page by specifying the page's URL to any HTML browser.

APPENDIX C

WEB JETADMIN

WEB JETADMIN 6.0

Copying the Web JetAdmin Files

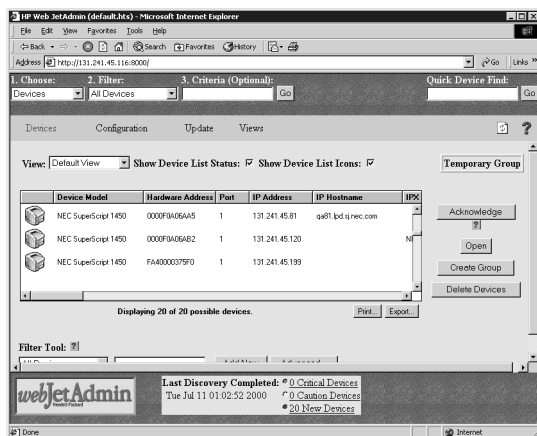
Before you can begin installing Web JetAdmin 6.0, you need to copy the files from the *SuperScript 1400 Series Solutions CD* to your computer.

Copy the directory at [nec_superscript_1450](#) to WJA's directory, the default directory path is

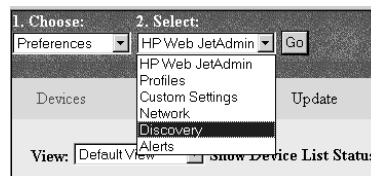
[C:\Program Files\HP Web JetAdmin\doc\devices](#)

Installing Web JetAdmin 6.0

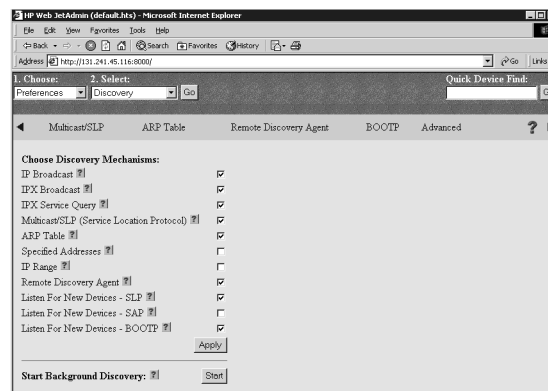
1. Launch **Web JetAdmin 6.0**. Before you can reset **Discovery** so that it can detect new devices (printers) you must clear the cache.



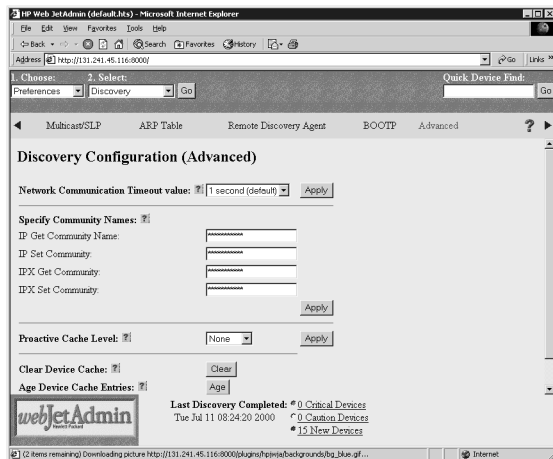
2. From the opening screen, set the **1. Choose:** drop-down menu to **Preferences** and the **2. Select:** drop-down menu to **Discovery**. Click on the **Go** button.



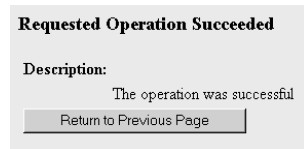
3. On the next screen, select **Advanced** from the horizontal links menu. If **Advanced** does not appear, use the arrow to scroll to the right.



- In the Discovery Configuration (Advanced) screen, click on the **Clear** button next to the **Clear Device** cache query.



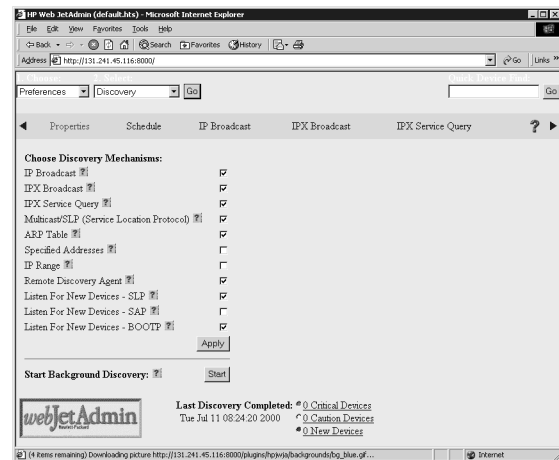
- When the **Requested Operation Succeeded** screen appears click on the **Return to Previous Page** button.



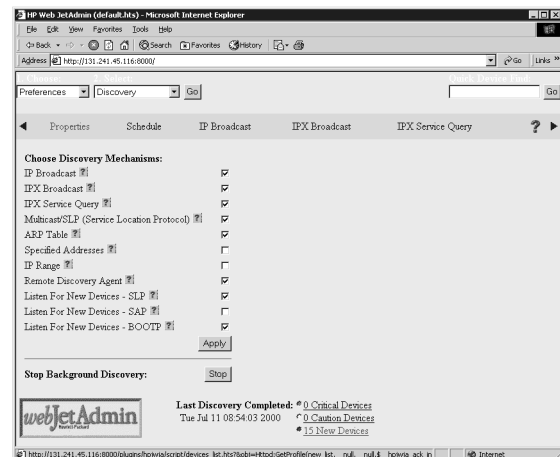
- When the **Discovery Configuration (Advanced)** screen reappears, **0 New Devices** should be reported on the **New** devices link.



- At the next screen check the query boxes as needed. Click the **Start** button next to the **Start Background Discovery** query.

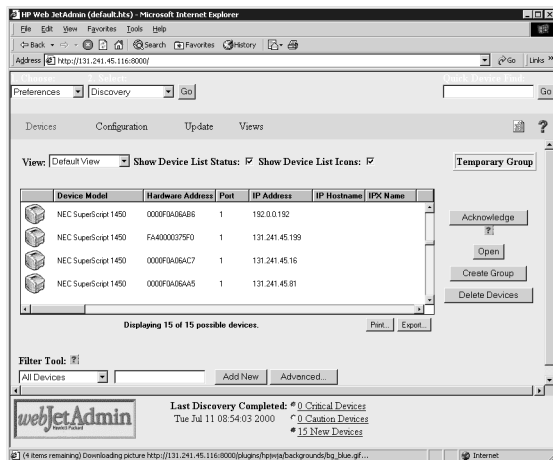


- Wait until the **Background Directory** query is finished.



- Click on the hyperlink at the bottom of the window to finish the installation.

10. In the new screen that appears select the **New Devices** link. The new printer will be displayed in the list.



WEB JETADMIN 4.0-5.6

If you are using Web JetAdmin, you must copy certain files from the *SuperScript 1400 Series Solutions CD* that came with your printer to Web JetAdmin folders so that the NEC SuperScript 1450 will appear properly.

Locating the Files

(This assumes your CD-ROM is drive E:)

Copying the Files

Copy Files to corresponding WebJetAdmin Folders (Path may vary depending on your Web JetAdmin version)

C:\Program Files\HP Web JetAdmin4.0\doc\devices\nec_superscript_1450.gif

C:\Program Files\HP Web JetAdmin4.0\doc\devices\Icons\Nss1450i.gif

C:\Program Files\HP Web JetAdmin4.0\doc\devices\Images\Nss1450.gif

C:\Program Files\HP Web JetAdmin4.0\doc\devices\nec_superscript_1450\CoverOpen.gif

C:\Program Files\HP Web JetAdmin4.0\doc\devices\nec_superscript_1450\NoPaper.gif

C:\Program Files\HP Web JetAdmin4.0\doc\devices\nec_superscript_1450\NoToner.gif

C:\Program Files\HP Web JetAdmin4.0\doc\devices\nec_superscript_1450\Offline.gif

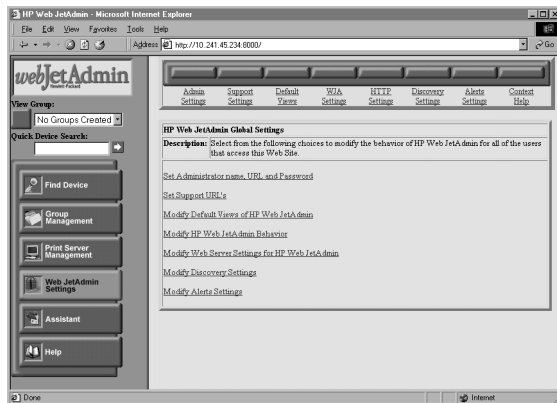
C:\Program Files\HP Web JetAdmin4.0\doc\devices\nec_superscript_1450\PaperJam.gif

Installing Web JetAdmin 4.0-5.6

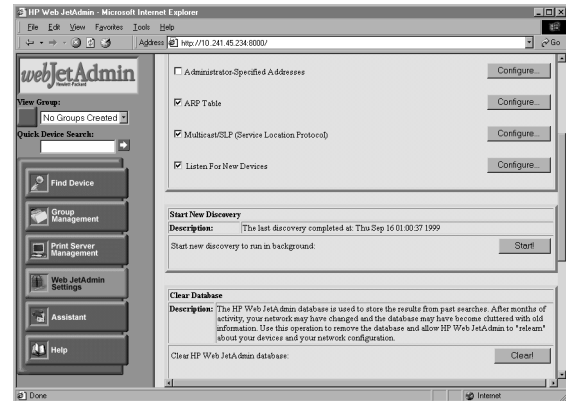
1. Launch Web JetAdmin 4.0-5.6.



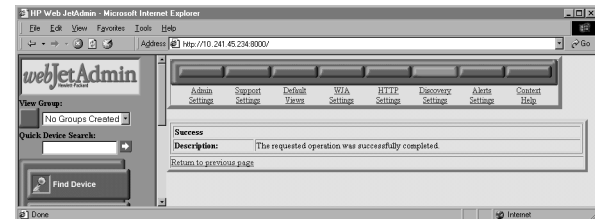
2. In the **Web JetAdmin** main page, click on **Web JetAdmin Settings**.
3. Click on **Modify Discovery Settings** on the right side under **HP Web JetAdmin Global Settings**.



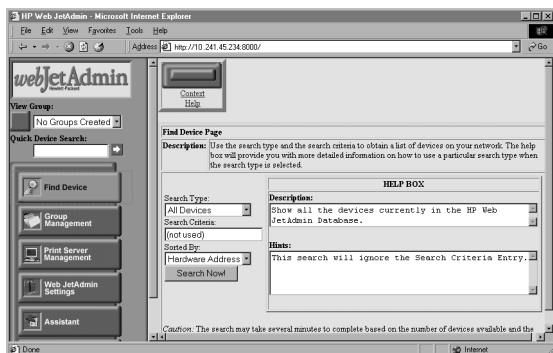
4. This displays the **Discovery Mechanisms** page. Scroll down to the **Clear Database** section and click on the **Clear!** button.



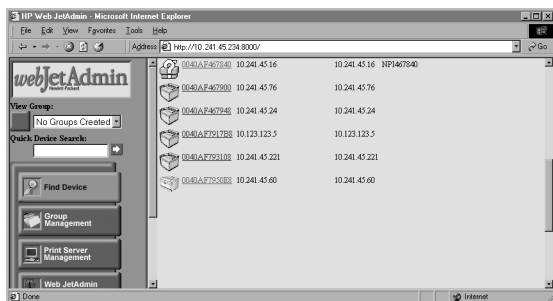
5. The **Success** page appears. At the top of the frame, click the **Discovery Settings** button to re-enter the **Discovery Mechanisms** page.



6. Scroll down to the **Start New Discovery** section and click on the **Start!** button. Check to see if the Discovery is still in progress by clicking on the **Discovery Settings** button. If it is done, click on the **Device** button, then click on **Search Now**.



7. When the list of discovered printers is displayed, select your printer based on its Network / MAC Address from the **Network Settings** page.



8. You will then see the printer's properties and status.

APPENDIX D

UPGRADING THE NIC FIRMWARE

INTRODUCTION

Located on the network interface card (NIC) are flash memory devices for storing the NIC firmware. The firmware contains instructions that are used by the NIC for communicating with a network. If for some reason the firmware must be upgraded, it can be easily done.

For information about NIC firmware upgrades, such as whether you need one or not, and how to receive them, visit NEC's web site at cssweb.nectech.com/printers/laser/1400Series/index.html

PREREQUISITES

Before the NIC firmware can be upgraded, the following prerequisites must be met.

- The NIC must be installed in the printer (see Chapter 2), physically connected to a network, and the NIC must be configured (see Chapter 4).
- A Windows 95, 98, NT 4.0, 2000 computer must be used for performing the upgrade.
- The computer must be configured to use TCP/IP. See your Windows User Guide or the Windows Help System for information about how to determine this.
- The IP Address for the computer must be known.
- The Network Printer Manager must be installed in the computer (see Chapter 3).
- A copy of the NIC firmware must be obtained from NEC's web site and stored on the computer.

note: Please be advised that the NPM utility used to manage printers on a network does not support upgrading the flash firmware across different networks. In order to circumvent this limitation, you need to install the NPM utility on a PC located on the same network as the printer you are interested in upgrading.

UPGRADE PROCEDURE

After the following procedure is completed, the printer will automatically reset itself so it can begin receiving print jobs.

Note: Some of the following steps may appear to be slow because of network traffic.

1. Click the Windows **Start** button, point to **Programs**, then **NEC Printer Manager**, and click **Network Printer Manager** to start the NEC Network Printer Manager. Once the manager starts, it will begin searching the network for the printer. Every SuperScript 1450 printer that is found will be listed in the Network Printer Manager.
2. From the **Maintenance** menu, select **Upgrade Firmware** to open the **Choose the Upgrade Firmware File** dialog box.
3. From the list, select the printer that must have its NIC firmware upgraded.
4. Click **Browse** to open the Open dialog box.
5. Navigate to the location of the upgrade file then select it.
6. Click **Open** to return to the **Choose the Upgrade Firmware File** dialog box.
7. Click **Start** to begin upgrading the firmware.
8. When the upgrade is completed, click **OK**.

APPENDIX E

SAFETY INFORMATION

OZONE EMISSION

The corona assemblies found in laser printers and photocopiers generate ozone gas (O₃) as a by-product of the electrophotographic process. Ozone is only generated while the printer is printing while the coronas are energized.

UL Standards for Ozone

The only existing standard for ozone emissions has been established by Underwriters Laboratory (UL). All SuperScript family printers meet this standard when shipped from the factory to our customers.

Employer Responsibilities

Because ozone can be an irritant, various regulatory agencies have established limits to the amount of ozone to which employees may be exposed. The employer is responsible for providing a safe work environment that meets the agencies' standards.

Recommendations for Minimizing Ozone Exposure

Almost all ozone concerns arise from abnormal site or operating conditions. The following conditions may generate an ozone complaint:

- Installation of multiple laser printers in a confined area.
- Extremely low relative humidity.
- Poor room ventilation.
- The exhaust port of the printer is directed towards the face of personnel.
- Read the installation instructions carefully before you plug in your printer, and follow all warnings.
- The existing ozone filter is in poor condition
- Long continuous printing is combined with any of the above.

Inspect your work environment for the operating conditions listed above if you believe ozone emissions are a problem in your area. Some people may be ultra-sensitive to ozone odor. If these situations are encountered, it is advisable to position the printer away from the sensitive user.

Laser Safety

This printer is certified as a Class 1 laser product under the U.S. Department of Health and Human Services (DHHS) Radiation Performance Standard according to the Radiation Control for Health and Safety Act of 1968. This means that the printer does not produce hazardous laser radiation.

Since radiation emitted inside the printer is completely confined within protective housings and external covers, the laser beam cannot escape from the machine during any phase of user operation.

CDRH Regulations

The Center of Devices and Radiological Health (CDRH) of the U.S. Food and Drug Administration implemented regulations for laser products on August 2, 1976. These regulations apply to laser products manufactured after August 1, 1976. Compliance is mandatory for products marketed in the United States. The printer's front panel indicates compliance with the CDRH regulations and must be attached to laser products marketed in the United States.

Caution! Use of controls, adjustments, or performance of procedures other than those specified in this user's guide may result in hazardous radiation exposure.

FCC STATEMENT

For United States

Federal Communications Commission Radio Frequency Interference Statement.

WARNING! Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

note: 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 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 should try to correct it by the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from the one to which the receiver is connected.
- Consult the dealer or an experienced radio or TV technician for help.

Use a shielded and properly grounded I/O cable to ensure compliance of this unit to the specified limits of the rules.

If your printer is the NEC SuperScript 1450 model or if you have installed the optional Network Interface Card (NIC), the printer meets the requirements of FCC Class A when connected to an Ethernet cable.

For Canada

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de Classe B présentes dans le règlement sur le brouillage radioélectriques édicté par le Ministère de Communications du Canada.

Declaration of Conformity

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

U.S. Responsible Party:	NEC Technologies, Inc.
Address:	1250 N. Arlington Heights Road Itasca, Illinois 60143
Telephone Number:	630-467-5000

Type of product: Laser Printer
Equipment Classification: Class B Peripheral
Model: SuperScript 1450, SuperScript 1450N



We hereby declare that the equipment specified above conforms to the technical standards as specified in the FCC Rules.

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