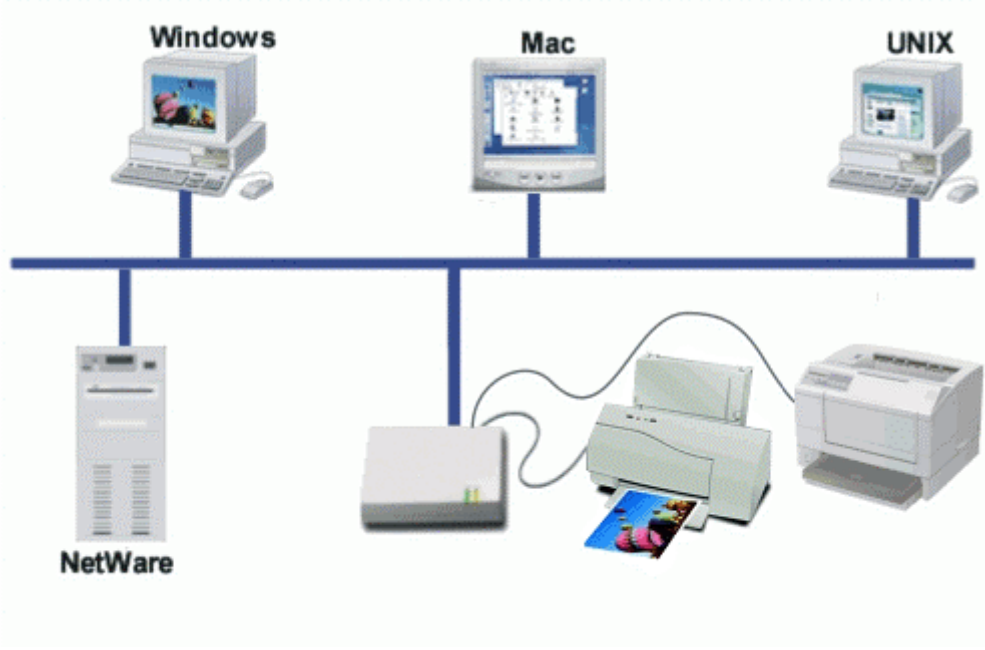
Print Server



User Guide

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Table of Contents

Chapter 1
Introduction

1

This chapter provides an overview of your Print Server's features.

Features

Congratulations on the purchase of your new Print Server. Your Print Server was designed to provide a simple and efficient network printing solution. It is packed with features, including:

- ***Versatility.*** The Print Server supports up to five protocols: NetWare, TCP/IP, SMB (Service Message Block), AppleTalk (EtherTalk), and NetBEUI. It features one or two Ethernet interface ports and operating system support includes Unix, Novell, and Microsoft Windows.
- ***Easy Installation.*** The Print Server makes adding printers or plotters to your network simple. The auto-sensing feature on the LAN interface means that there is no need to set jumpers or perform software configuration to select the network interface used.
- ***Easy Setup.*** A number of utility programs are supplied to simplify setup. For Windows 95/98/Me/NT/2000/XP users, the BiAdmin program makes it easy to configure the Print Server for a variety of network and server configurations.
- ***Web-based Interface.*** The Web-based interface provides an easy method of configuration in TCP/IP networks to every model.
- ***Compact Size.*** This allows the Print Server to be used even where space is limited.
- ***Remote Management Tools.*** A variety of software tools are provided. In most environments, both the Print Server and attached bi-directional printers can be configured remotely.
- ***SNMP Support.*** The Print Server can act as a SNMP agent, with it own MIB. This allows TCP/IP users to monitor, configure and troubleshoot the Print Server using their existing SNMP management tools.
- ***Internet Printing Protocol (IPP) Support.*** Some Print Server models can act as an IPP (Internet Printing Protocol) Server, allowing clients, suppliers, colleagues and others to print to your printer from anywhere on the Internet. Windows IPP Client software is also supplied.

Refer to the "Protocol Support" and "Feature Support" tables in Appendix A for details of which models support the different features.

Safety Instructions

For your own safety, and to protect your Print Server, please observe the following safety advice.

1. Unplug this device from its power source before cleaning. Use only a slightly dampened cloth for cleaning. Do not use liquid or aerosol cleaners.
2. Avoid using this product near water. Exposure to water poses an electric-shock hazard.
3. Do not place the Print Server on an unstable surface. The device may fall causing serious damage to the device.
4. This device should only be used with the power supply type specified on the marking label. If you are not sure of type of your local power supply, consult your dealer or the local power company.
5. Do not pinch, crimp or otherwise damage the power cord. If exposed to foot traffic, ensures that the cable is properly shielded and does not pose a tripping hazard.
6. If using an extension cord, makes sure the total ampere rating of the products using the cord does not exceed the extension cord's ampere rating.
7. Do not attempt to service this device, as opening or removing casing may expose you to dangerous voltage points or other risks. Refer all servicing to qualified service personnel.
8. The Print Server should be serviced by qualified service personnel under the following conditions:
    - The power cord is damaged or frayed.
    - Liquid has been spilled onto the product.
    - The product has been exposed to rain or water.
    - The product does not operate normally in accordance with the operating instructions.
    - The device has been dropped or the casing has been damaged.

Package Contents

You should find the following items packaged with your Print Server. If any items are missing, contact your dealer immediately.

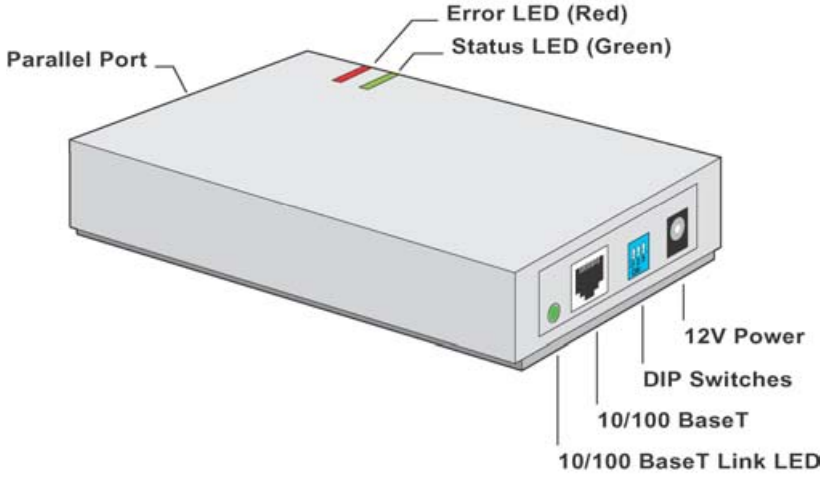
- The Print Server
- Power Adapter
- One CD-ROM containing all support programs and this manual
- Quick Install Guide

Models

This manual covers the following Print Server models. Details of the LEDs and DIP Switches are in this Chapter. Further details of each model are contained in *Appendix A - Specifications*.

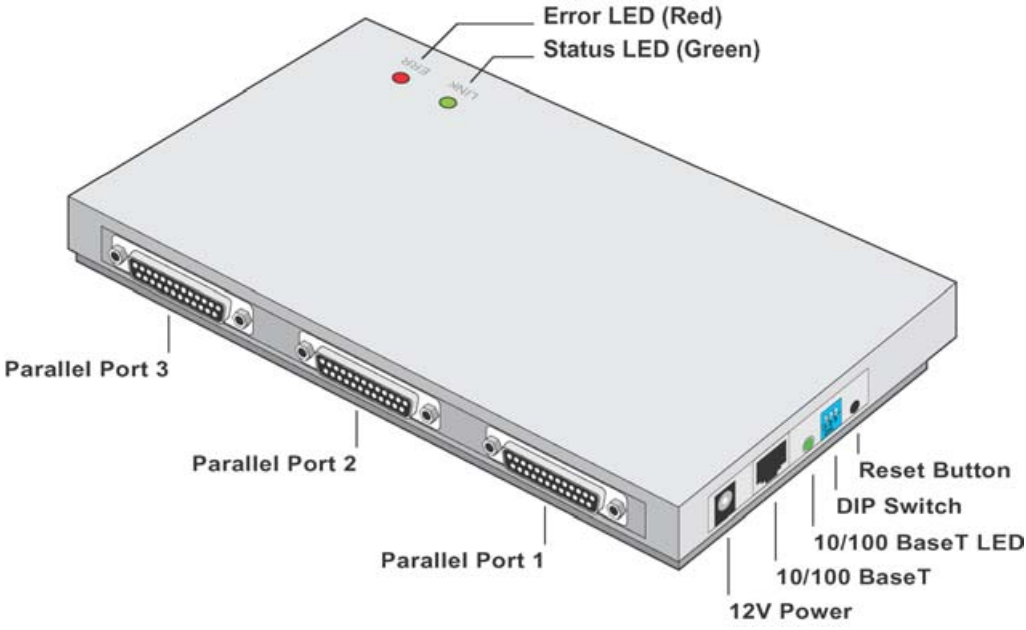
PS5100 Print Server

- 1 Parallel Port
- 10/100BaseT



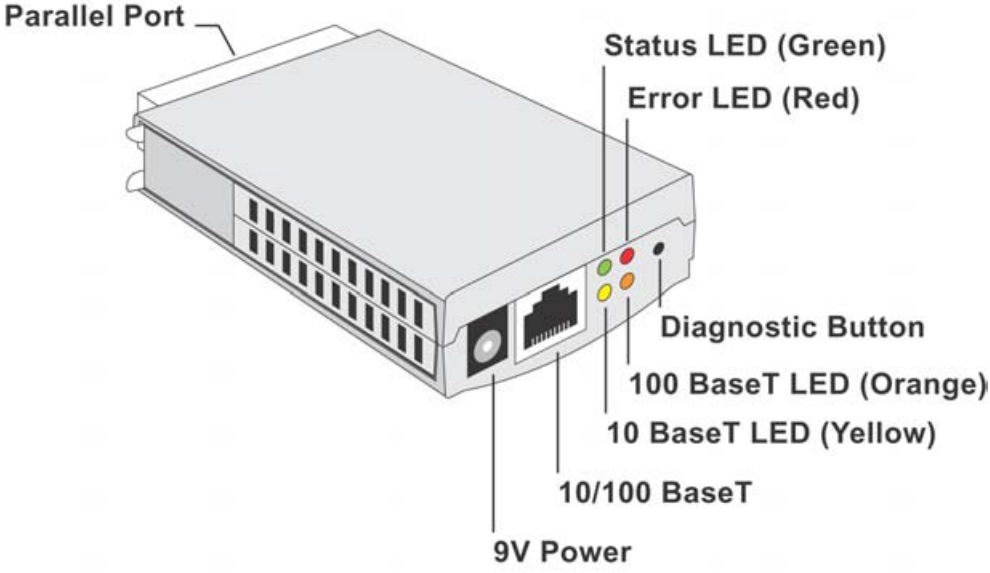
PS5300 Print Server

- 3 Parallel Ports
- 10/100BaseT



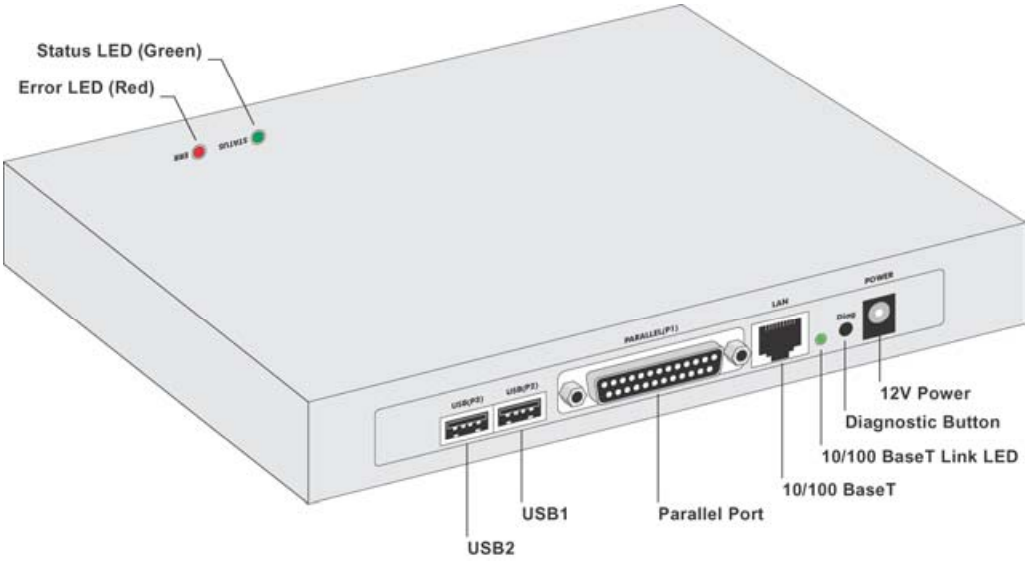
AS5100/560H Print Server

- Direct Attach
- 1 Parallel Port
- 10/100BaseT



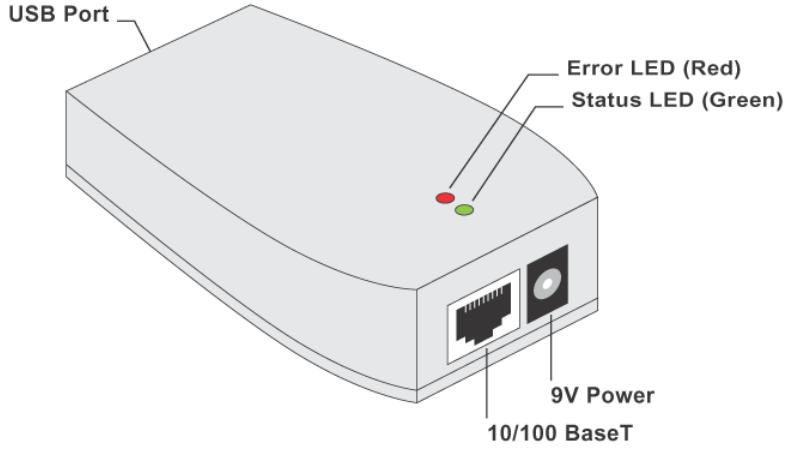
PS5120 Print Server

- 1 Parallel Port
- 2 USB Print Ports
- 10/100BaseT



PS5010 Print Server

- 1 USB Print Port
- 10/100BaseT



LED Indicators

All models have two LED indicators on the top. The Error LED is orange or red. The Status indicator LED is green. The LED indicator modes are described in the following table.

Green LED	Red/Orange LED	Status Description
Off	Off	No power.
On	On	Hardware error.
Flashing	Flashing	Firmware upgrade in progress.
On	Flashing (USB only)	No printer connected to the USB port.
On	Off	Normal operation - idle.
Flashing	Off	Normal operation - transmitting or receiving packets from the network.

DIP Switch Table

Some models are fitted with DIP switches.

- The default position for all switches is UP.
- Normally, there is no need to change the settings of the DIP switches.
- The purpose of these switches is described in the following tables. Any other possible settings are reserved, and should not be used.

PS5100, PS5300

SW1	SW2	SW3	Description
UP	-	-	Auto select LAN connection (Default) Switches 2 and 3 have no effect
Down	Down	Down	10BaseT - Half Duplex
Down	Down	UP	10BaseT - Full Duplex
Down	UP	Down	100BaseT - Half Duplex
Down	UP	UP	100BaseT - Full Duplex

Diagnostic Push Button

Print Server models AS5100, AS560H and PS5120 are fitted with a Diagnostic Push Button. The button is recessed; a pin or paper clip can be used to press it. This button has 2 functions:

- Restore the factory default settings
- Print a test page containing all current settings.

To restore the factory default settings:

1. Turn the Print Server OFF.
2. Press and hold the diagnostic button. While pressing the button, switch the Print Server ON.
3. If you continue pressing the button for 10 seconds, a diagnostic page will be printed, showing the new (default) settings.

To generate a Diagnostic print out

1. Ensure that both the Print Server and the printer attached to port 1 are ON.
2. Press the diagnostic button, and hold it in for 2 seconds.
3. The test page, containing the current settings, will be printed.

   Note:

   PostScript printers are unable to print this page. If you have a PostScript printer on Port 1, the test page will not be printed.

Chapter 2
LAN Installation

2

This chapter describes how to install the Print Server in your Local Area Network.

Procedure

1. Preparation

- Ensure the power is OFF. Do not connect the Print Server while power is On.
- Find the *Default Server Name* for your Print Server. The *Default Server Name* is shown on a sticker on the base of the device. It consists of 8 letters and/or digits. Record this name; it may be needed during configuration.

2. Connect the Printer or Printers

Connect the printer or plotter to the Print Server's printer port(s), as appropriate:

- **Direct Attach Models** - Plug the Print Server directly into the parallel port on the printer.
- **USB Ports** - Use the USB cable supplied with your printer to connect the printer to the Print Server's USB port.
- **Parallel Ports** - Use a standard Parallel port cable to connect the printer to the parallel port on the Print Server. Parallel printer cables should be less than 3 meters long.

3. Connect the Network Cable

- Connect the network cable to the proper connector on the Print Server. The Print Server will automatically recognize whichever connector is used.

4. Power Up

Plug in the power adapter cable and power up. Start-up will take only a few seconds.

Use only the Power Supply unit provided with the device. Power Supply units for different models are not interchangeable.

5. Check the LEDs

- The Red Error LED should flash, then turn Off. When the Red LED goes off and the Green LED remains lit or flashes, the Print Server is ready.
- For models with USB ports, the Red Error LED will remain flashing if the Print Server can't connect to the printer.
- If your model supports 10BaseT and 100BaseT, check the 10/100BaseT link LED or LEDs next to the LAN connection. If the auto negotiation **Fails**, the LED (or both LEDs, if there are 2) will be **Off**. In this case, set the DIP switches to suit your LAN, as described in the *DIP Switch Table* in Chapter 1.

Chapter 3
Print Server Configuration

3

This chapter provides an overview of the configuration process.

Overview

The Print Server is designed to support many different platforms, and the configuration required would depend upon the environment in which it is installed.

- The Print Server usually requires configuration, but if there's a DHCP server on your network, then the device is just plug-and-play. A Windows-based setup Wizard is also provided on the CD-ROM to simplify this task.
- PCs wishing to use the printer attached to the Print Server always require configuration. See *Chapter 4- Client Configuration* for details.
- If using a **NetWare Server** (V3, 4, or 5 in "compatibility" mode), the supplied Setup Wizard can also configure the NetWare Server for basic operation.
    - For advanced configuration and management, the BiAdmin program (detailed in *Chapter 5 - BiAdmin Management Utility*) is recommended.
    - If using NDPS, refer to *Appendix B - Network Server Configuration*.
- If you wish to use a queue-based printing system using **Windows NT Server/Windows 2000/Windows XP**, the Network Server must be configured as detailed in *Appendix B - Network Server Configuration*. However, it is not necessary to use a Network Server-based queue; client PCs can print directly to the Print Server using the *Peer-to-peer Print Driver* installed by the *User* setup option on the CD-ROM.

Using the Windows Wizard

The Windows-based Wizard runs on Windows 95, 98, NT4.0, Me, Windows 2000 and XP.

It will configure the Print Server for your Network environment.

If using NetWare, the Wizard can also configure the NetWare Server, provided:

- You are logged into the required NetWare server with ADMIN rights.
- NetWare Client32 is installed on the PC you are using for configuration.

Procedure

1. Insert the supplied CD-ROM into your drive. If the setup program does not start automatically, run SETUP.exe in the root folder.
2. The Wizard program can be executed by clicking the "*Setup Wizard*" button on the Autorun screen, it's not necessary to install the Wizard program to your PC.
3. Within the *Setup Wizard*, select the Print Server you wish to configure, click *Configure*, and step through the Wizard.
4. Follow the prompts to complete the installation.

Note: To install the Wizard on your PC, use the "Installation" option.

If the desired Print Server is not listed:

- Check all cables to the Print Server.
- Check the Print Server's LEDs:
  - The Red LED should be OFF and the Green LED should be ON or flashing.
  - If your model supports 10BaseT and 100BaseT, check the 10/100BaseT link LED next to the LAN connection. If the auto negotiation fails, the 10/100BaseT Link LED will not light when the device is powered up. (If there are 2 LEDs, neither will light.) In this case, set the DIP switches correctly for your LAN. See the ***DIP Switch Table*** in Chapter 1 for details of the DIP Switch settings.
- Check that your PC and the Print Server are on the same LAN segment. (If you don't have a Router or Gateway on your LAN, you only have 1 segment.)
- Check that your PC has either the TCP/IP or NetBEUI network protocols installed. See *Checking your Network Protocols* on page 12 for details.

Alternatives to the Configuration

If you do not have a Windows 32 platform available, use one of the following methods to configure the Print Server.

Web Browser	Only available on 100BaseT models. See *Chapter 6 - Web Interface Setup* for details.
FTP	Using this method, the configuration file is downloaded from the Print Server, edited, then sent back. No software needs to be installed. See the UNIX manual for details. The Unix manual is on the CD-ROM, in the `Manual\Unix` folder
Quickset	Command-line DOS program, intended only to configure the Print Server for use with NetWare V2, 3 and 4. This program also has a limited ability to configure the NetWare Server itself. This program is on the CD-ROM, in the `Utilities\DOS` folder. Instructions for using the program are in a sub-folder of the `Manual` folder on the CD-ROM.

Advanced Configuration and Management

The BiAdmin management utility is provided for advanced configuration and management. This program is installed by default when the ***Administrator*** install option is chosen.

- See Chapter 5 for details on using BiAdmin.
- For instructions on using BiAdmin for NetWare configuration, see the ***NetWare*** manual on the CD-ROM. It is located in the `Manual/Netware` folder.

Chapter 4
Client PC Configuration

The chapter details the client configuration required on LAN clients to use the printer or printers attached to the Print Server.

Overview

Before performing client configuration, the Print Server must be installed on your LAN, and configured as described in Chapter 3. Both the Print Server and the attached printer must be powered ON.

Printing Methods

The Print Server supports a number of printing methods:

- ***Peer-to-peer Print Driver*** is used by the ***User*** installation on the CD-ROM. The print jobs are stored (queued) on your PC, and sent to the Print Server when it is available.
- ***Server-based Print Queue*** means that all print jobs are stored (queued) on the Network Server (e.g. NetWare, Windows NT/2000) and then sent to the Print Server. This allows the Network Administrator to modify the Print Queue. For example, an important job can be moved to the head of the queue.
- ***Windows SMB*** printing is a Microsoft standard for using a "Network Printer". No additional software needs to be installed on your Windows PC, and printing from MS-DOS programs is supported. However, because the Print Server can not store files, large print jobs may cause problems.
- ***AppleTalk*** is also supported, and normally no configuration of the Print Server is required. See the Macintosh section of this chapter for details of client configuration.

Which printing method should I use?

- If using Windows 95, 98, NT, Me, 2000, or XP, the easiest method is to install the *Peer-to-peer Print Driver* on the CD-ROM, by selecting the ***User*** installation.
- If using Windows, and you need to print from MS-DOS programs, or you don't wish to install additional software, use SMB.
  However, SMB is not suitable for large, complex documents, so if you need this as well as MS-DOS printing, you should install BOTH the *Peer-to-peer Print Driver* and SMB printing. MS-DOS programs can use the SMB printer, Windows programs should use the *Peer-to-peer Print Driver*.
- If your LAN has Network Servers (e.g. Windows NT, Windows 2000 Server, NetWare) use the method advised by your Network Administrator. The Print Server can print via a queue located on a Network server, if desired.
- **Unix** users - refer to the ***Unix Manual*** on the CD-ROM, in the Manual/Unix directory.
- **Macintosh** users - refer to the Macintosh section of this chapter.

Checking your Network Protocols (Windows 9x)

Your PC must have EITHER the TCP/IP or NetBEUI protocols installed. (All versions of Windows after Windows 95 have TCP/IP installed by default.)

- If using the ***Peer-to-peer Print Driver***, the installation program will check this for you.
- If using ***Windows SMB Printing***, you must check manually, as follows:

1. Select the *Settings* - *Control Panel* - *Network* option on the Start Menu. You should see a screen like the one following:

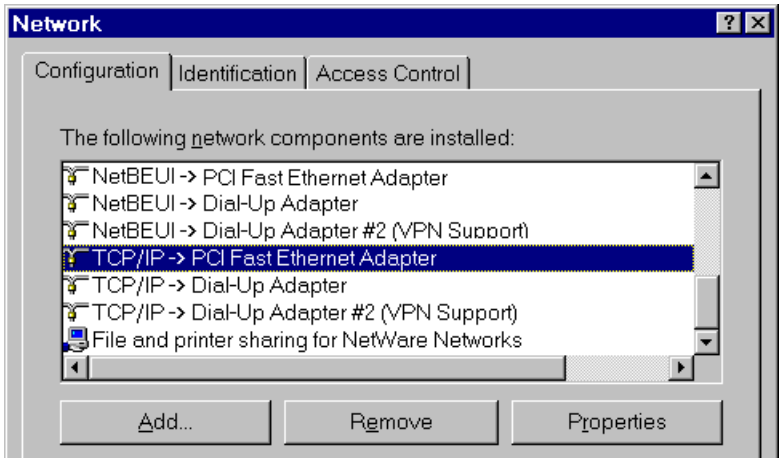


Figure 1: Network Configuration

   - The top line in the list (NetBEUI -> PCI Fast Ethernet Adapter) indicates that the NetBEUI protocol is installed on this PC. Your PC will show the name of the your Network card rather than "PCI Fast Ethernet Adapter".
   - The highlighted line (TCP/IP -> PCI Fast Ethernet Adapter) indicates that TCP/IP is installed. Your PC will show the name of the your Network card rather than "PCI Fast Ethernet Adapter".

2. If neither line is present:
   - Install the NetBEUI protocol by selecting *Add* - *Protocol* - *Microsoft* - *NetBEUI* - *OK*. You may be prompted for your Windows CD-ROM.
   - If required, you can also install TCP/IP. However, depending on your LAN environment, TCP/IP may require further configuration.
3. If either protocol is already installed, proceed with installation.

Windows Peer-to-peer Print Driver

With this printing method, print jobs are stored (queued) on your PC, and then sent to the Print Server when it is available.

Setup

Before performing the following procedure, the Print Server must be installed on your LAN, and configured as described in Chapter 3. Both the Print Server and the attached printer should be powered ON.

1. Insert the supplied CD-ROM into your drive. If the setup program does not start automatically, run SETUP.exe in the root folder.
2. Choose ***Installation***, then select the ***User*** option. This will install the *Peer-to-peer Print Driver*.
3. Follow the prompts to complete the installation. (Refer to the *Windows* section of *Chapter 8 - Troubleshooting* if there is a problem with the installation.)
4. The *Print Driver Setup* will then run.
5. The LAN will be searched for Print Servers, and a screen like the following will be displayed.
   - If desired, click *Refresh*.
   - The name of the attached printer will be displayed if possible. If "No printer" is displayed, check that the printer is properly connected and powered on.

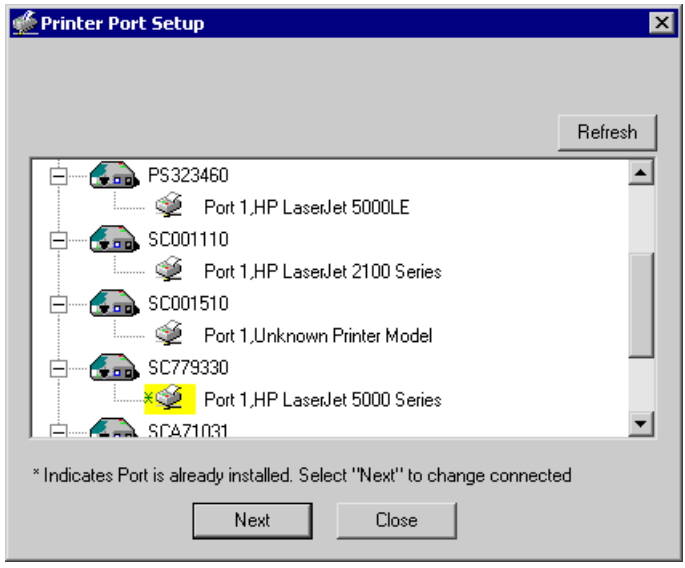


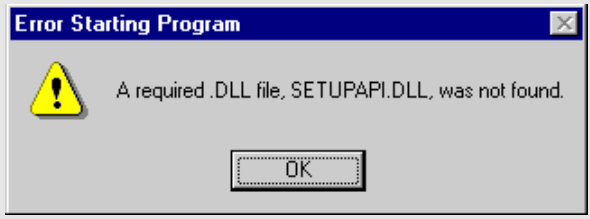
Figure 2: Print Port Setup (Peer-to-peer Print Driver)

If your Print Server is not listed:

- Click the "Refresh" button.
- Check that both the Print Server and the printer are properly connected, and powered on.
- Check that the Print Server has been configured. (Use the ***Setup Wizard*** on the CD-ROM.)
- If using TCP/IP, try installing the NetBEUI protocol. (See the earlier section *Checking your Network Protocols* for details.). Then try again.

6. Select the desired printer port, and then click the "Next" button. A pop-up message will inform you if the port has been created successfully.

If you see the following error message, either install Internet Explorer 4 or later, or follow the procedure in the "Trouble Shooting - Windows" section of Chapter 8.



7. Then a screen like the following will be displayed:

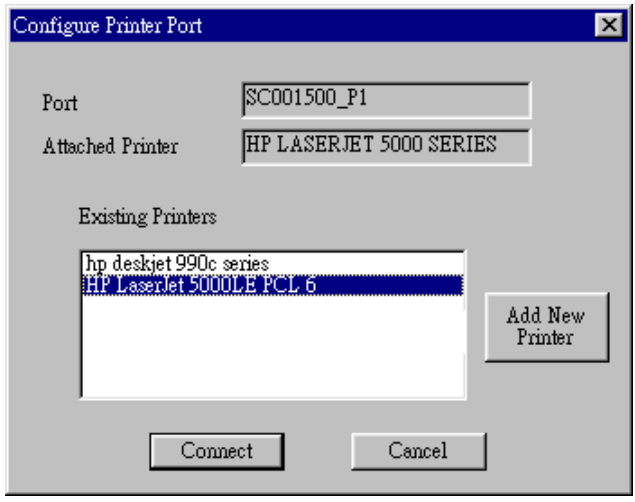


Figure 3: Configure Printer Port

8. Select the correct Windows printer in the *Existing Printers* list, and click the "Connect" button.

   If the correct printer type is not listed, click "Add New Printer" to run the Windows *Add Printer* wizard. Step through the Wizard and install the required printer:

   - Select the correct Printer Manufacturer and Model, or use the "Have Disk" option if appropriate.
   - We recommend changing the Printer name to indicate which device is on. (e.g. HP2100 on SCA43600_P1)

- If prompted about Sharing the printer, do NOT enable Sharing.
- When the Printer installation is finished, it will be listed in the *Configure Printer Port* screen above. Select it and click "Connect".

9. Installation is now complete. You can now print using this printer.
   - To install additional Printers, repeat steps 6 to 8.
   - Use the ***Start*** menu to run this program in future. The default installation is *Start - Programs - PrintServer Driver - Print Driver Setup*.

Management

- Print jobs can be managed like any Windows printer. Open the *Printers* folder (*Start - Settings - Printers*) and double-click any printer to see the current print jobs.
- If the printer attached to the Print Server is changed, just run this program again, and select the correct printer.
- To delete a port created by this setup program, use the Windows *Delete Port* facility:
  - Right-click any printer in the *Printers* folder, and select *Properties*.
  - Locate the *Delete Port* button. This button is on the *Details* or *Ports* tab, depending on your version or Windows.
- If the Print Server's IP Address is changed, and you can no longer print, delete the port (see procedure above) and re-install it.

Port Options

The options for the *Peer-to-peer Print Driver* are accessed via the *Port Settings* button.

Use *Start - Settings - Printers* to open the Printers folder, then right-click the Printer, and select *Properties*. The *Port Settings* button is on the *Details* or *Ports* tab, depending on your version of Windows.

An example screen is shown below:

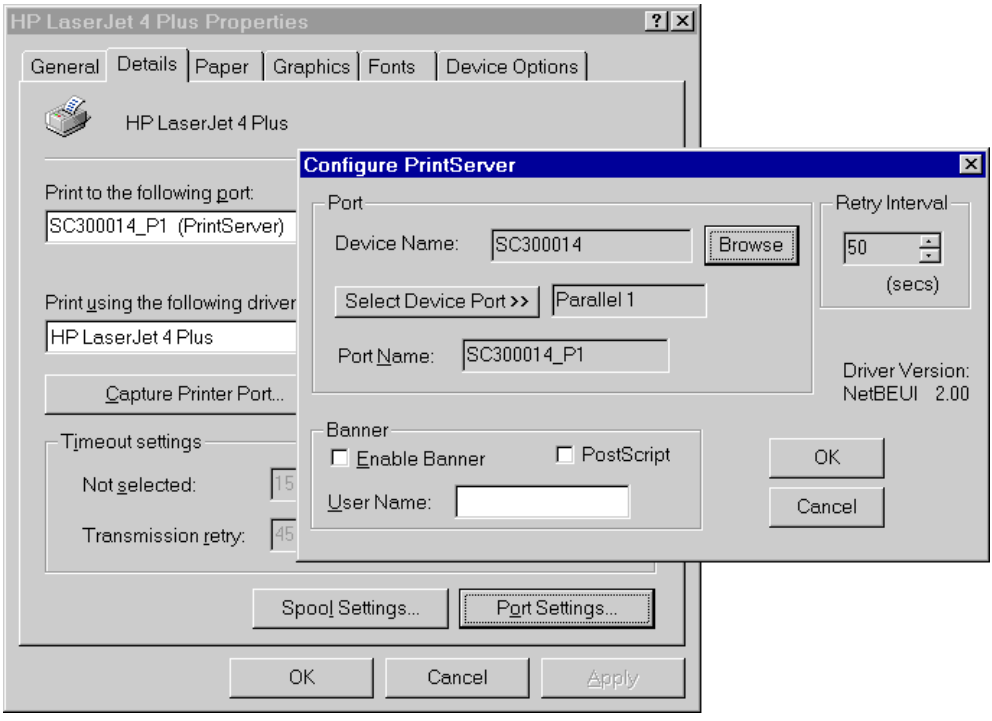


Figure 4: Port Settings (Peer-to-peer Driver)

Items shown on this screen are as follows:

Port	If desired, click *Browse* to select a different Print Server. If the selected device has multiple ports, the *Select Device Port* button can be used to select the port. The *Port Name* can not be changed after installation. This name is shown in the Printer's *Properties*.

Banner	Check this option to print a banner page before each print job. • If using a PostScript Printer, check the *PostScript* box. • The *User Name* will be printed on the banner page.
Retry Interval	Sets how often Windows will poll the Print Server to establish a connection when the printer is busy. Increase this value if you get too many warning messages.

Windows SMB Printing

This method requires no additional software to be installed, but the NetBEUI or TCP/IP protocol must be installed on your PC. Use the following procedure to install the Print Server's printer as a Windows SMB network printer:

1. Double-click the *Network Neighborhood* icon on the desktop.
2. On the *View* menu, select *Details*.
3. Locate the desired Print Server, as shown below:
   - If it is the same Workgroup as your PC, it will be listed on screen.
   - If it is in a different workgroup, double-click *Entire Network*, then double-click the appropriate Workgroup to open it.

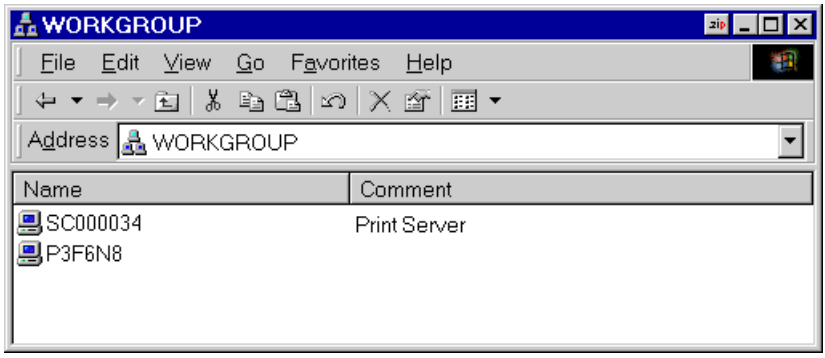


Figure 5: Network Neighborhood

4. Double-click the Print Server icon to view a Printer icon for each printer port. The "Comment" field may indicate what type of printer is connected to the port.
5. To install a printer, right-click the desired printer icon, and choose "Install", as shown below. This will start the *Add Printer* wizard.

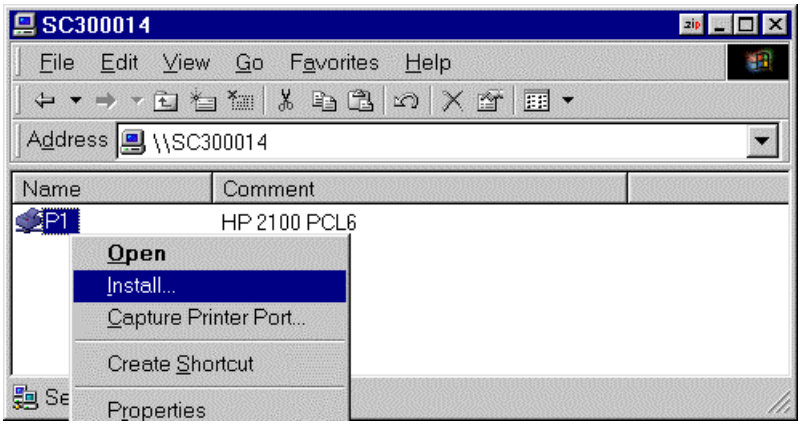


Figure 6: Install SMB Printer

6. Follow the prompts to complete the installation.
   - For information about the question "Do you print from MS-DOS programs?", see *Printing from MS-DOS Programs* below.
   - Select the Printer Manufacturer and Model to match the printer connected to this port on the Print Server, and complete the Wizard.
7. This printer will now appear in your *Printers* folder (*Start - Settings - Printers*) and can be used like any other printer. However, SMB printing is not suitable for large complex print jobs - you should use the *Peer-to-peer Print Driver* instead.

Printing from MS-DOS Programs

Windows can redirect print data from a parallel port on your PC (e.g. LPT1) to a network printer. This redirection is called "Capture Printer Port", and is useful for MS-DOS programs.

The MS-DOS program is configured to use LPT1 (parallel port 1 on the PC), but Windows "captures" the print data and sends it to the network printer.

Capture Settings

Capture settings can be set by:

- Saying "Yes" to the prompt "Do you print from MS-DOS programs?" when installing a Network Printer.
- OR, using the ***Capture Printer Port*** menu option shown in Figure 6 above.

This will result in a dialog like the following, where you can select the port on the PC to be captured. Normally, this will be LPT1 (parallel port 1 on the PC).

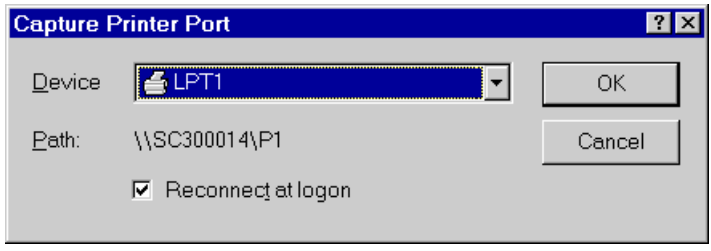


Figure 7: Capture Printer Port

The *File* menu in the ***Printers*** folder also has options for *Capture Printer Port* and *End Capture*.

Windows with Server-based Print Queues

1. Open your *Printers* folder, and start the *Add Printer* Wizard.
2. When prompted, select *Network Printer*.
3. When prompted for *Network Path or Queue Name*, click the *Browse* button, and locate the Server and Printer (or Print Queue) which your Network Administrator advised you to use.
4. Click OK, then *Next*.
5. Select the correct printer Manufacturer and Model, as advised by your Network Administrator, and click *Next*.
6. Follow the prompts to complete the Wizard.

The new printer will be listed with any other installed printers, any may be selected when printing from any Windows application.

Windows LPR Printing

1. Open your *Printers* folder, right-click the desired printer and select *Properties*.
2. When prompted, choose the *Ports* tab and click the *Add Port* button.

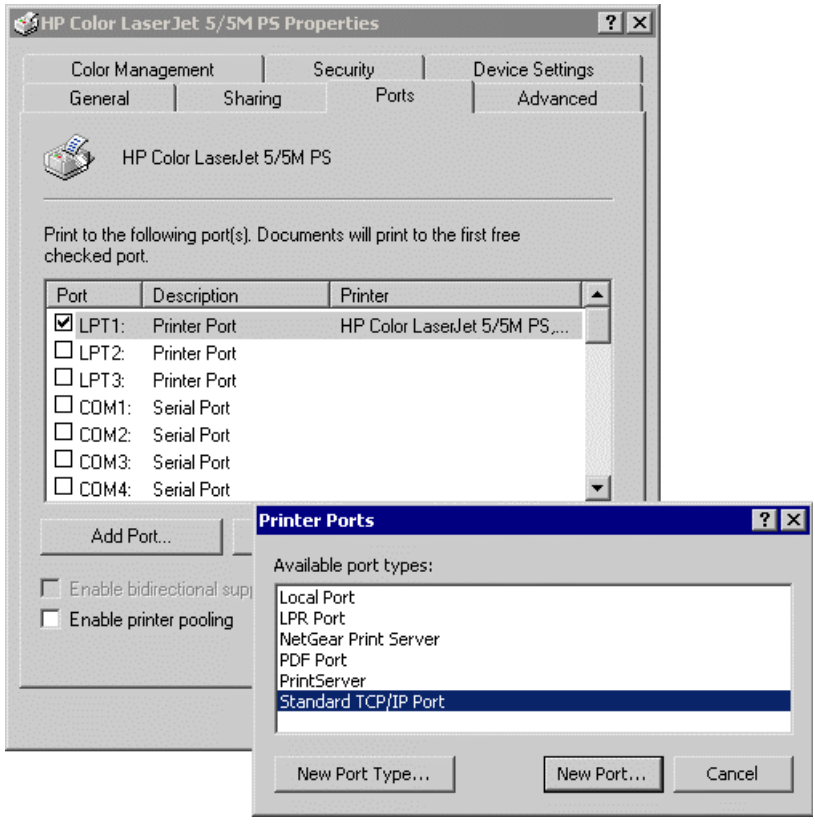


Figure 8: Properties Screen

3. Choose *Standard TCP/IP Port*, then click *New Port*.
4. Enter the *Printer Name or IP Address*, click *Next*.
5. Enable *Custom*, and click *Setting* button.

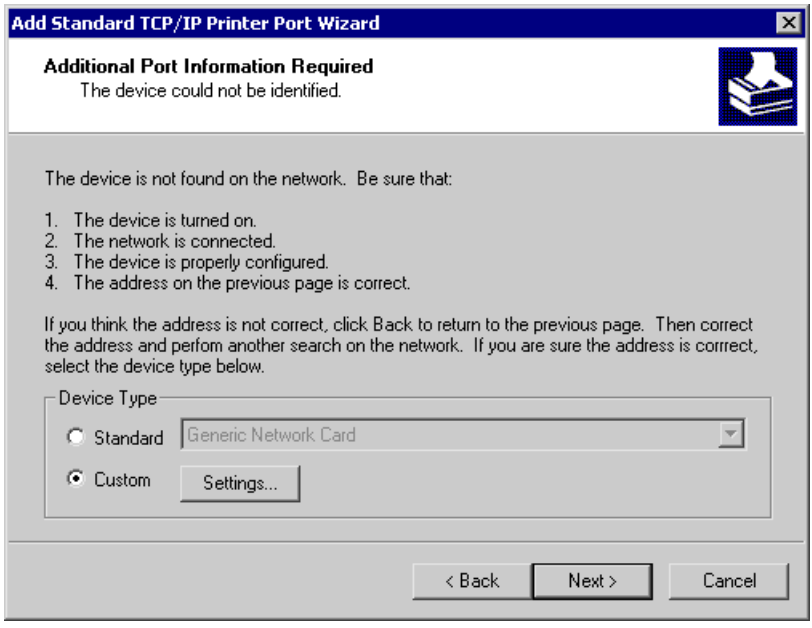


Figure 9: Add Standard TCP/IP Printer Screen

6. Choose *LPR* in the Protocol section, then enter *Queue name* and enable the *LPR Byte Counting*.

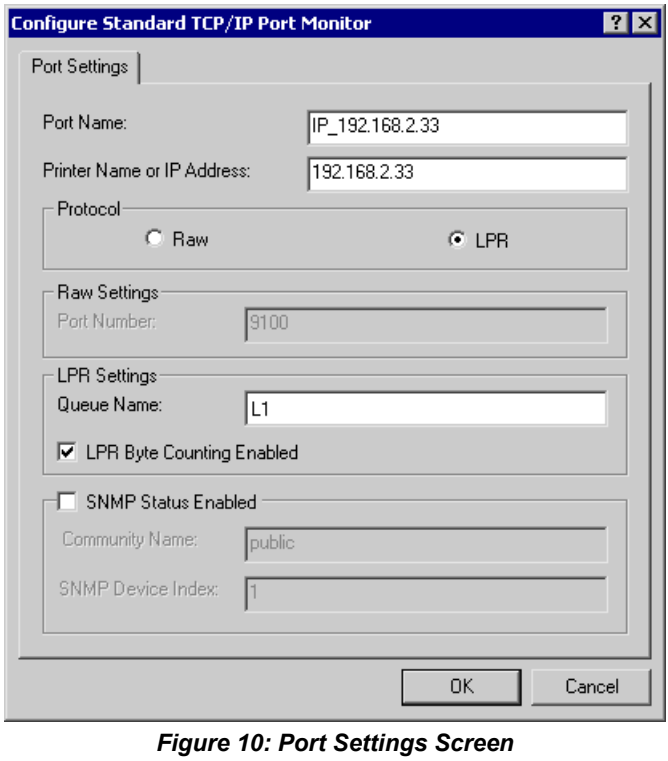


Figure 10: Port Settings Screen

7. Follow the prompts to complete the Wizard.

The new printer will be listed with any other installed printers, any may be selected when printing from any Windows application.

Windows using NDPS

Before using NetWare NDPS (NetWare Distributed Printing Service), one or more NDPS Printer Agents must be created on the NetWare Server. See Appendix B for details of this procedure.

Also, on your workstation**,** ensure that:

- Novell IntranetWare Client v2.2 (or later) is installed on your PC.
- You have access to the Novell Printer Manager utility (e.g. Nwpmw32.exe).

Procedure

1. Start the Novell Printer Manager utility.
2. Select *Printer* - *New* from the menu, then click *Add*.
3. Select the required printer and click *Install*, then *Close*.

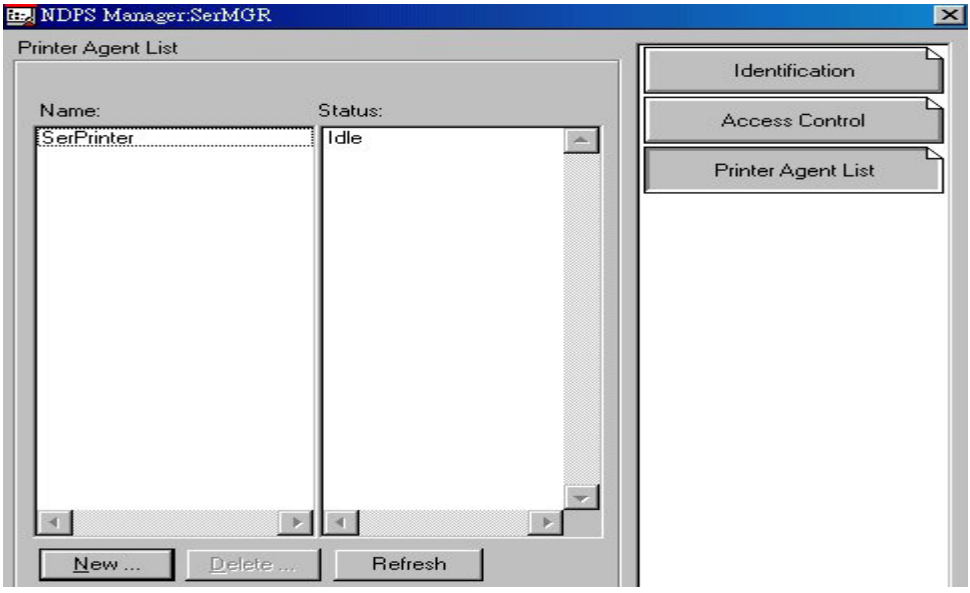


Figure 11: NDPS Manager - Client

4. The printer (e.g. SerPrinter in the example above) appears in the main Printer Manager window in the *Name* list, and is available for print jobs. Printer drivers are automatically downloaded from the server as required.
5. The printer will appear in your Windows printer list, and may be used from by any Windows application.

Macintosh (AppleTalk)

The Print Server supports AppleTalk (EtherTalk), PAP, ATP, NBP, ZIP and DDP protocols, enabling Macintosh computers on the network to view and use the Print Server as a regular AppleTalk printer.

Normally, no configuration is required.

Software Requirements

System 9.x OS or newer.

AppleTalk Setup

1. Click the apple icon and choose Control Panel.
2. Click AppleTalk.
3. Ensure that *Ethernet* is selected under *AppleTalk Connection*.
4. Click *Chooser*. The Chooser panel will open.
5. Click on either the *LaserWriter 8* icon (recommended) or the *LaserWriter 7* icon. LaserWriter 8 makes use of the fonts installed in the printer itself, so the printing response time is quicker. LaserWriter 7 uses the fonts installed in the computer, which increases network traffic and takes more printing time.
6. Choose a PostScript printer from the list.
7. Click *Create* and it will search PPD automatically.
8. Select a printer description from the list.
9. Click *Select*.
   Configuration is now complete.

Printing

Printing with the Print Server installed in an AppleTalk network is identical to normal printing. Just select *File* - *Print* and choose the desired printer.

Advanced Setup and Management

In a mixed Windows PC/Macintosh environment, you can use BiAdmin to configure the Print Server. See Chapter 5 for details on installing and using BiAdmin.

Macintosh OS X

If using LPR printing, you need to configure the printer. But no configuration is required if using AppleTalk.

LPR printing Setup

1. Select *Printer List* icon.

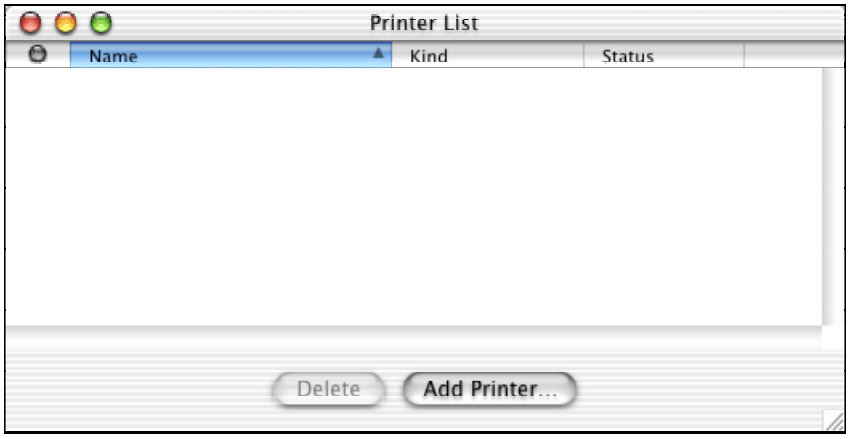


Figure 12: Printer List

2. Click *Add Printer* button.
3. Choose *LPR Printers Using IP*.

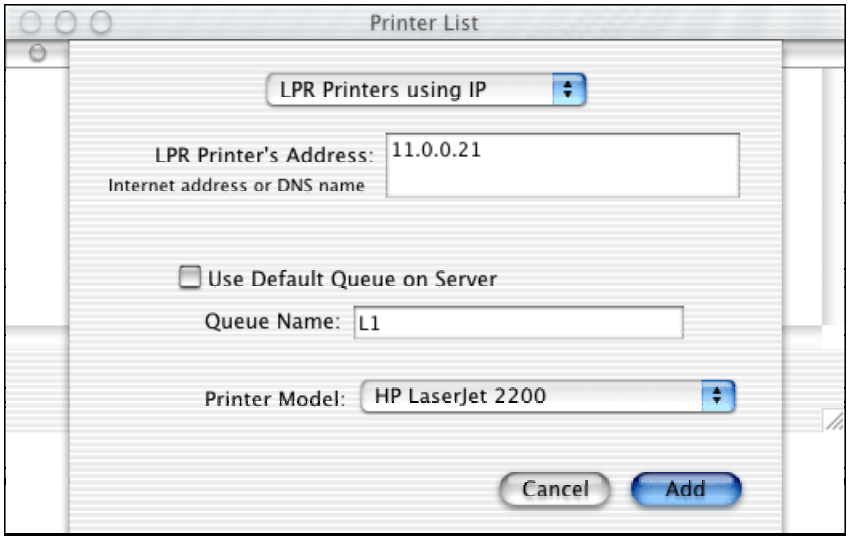


Figure 13: LPR Screen

4. Enter the *Printer's Address* and the *Queue Name*.
5. Select the *Printer Model* from the drop-down list.
6. Click *Add*.
   Configuration is now complete.

Chapter 5
BiAdmin Management Utility

5

This chapter describes the installation and operation of the BiAdmin Configuration & Management program.

Requirements

This program requires:

- Windows 95, Windows 98 or Me
- Windows NT 3.51, Windows NT 4.0, Windows 2000 or XP

Additional Recommendations:

- Screen resolution of 800 * 600 or greater.
- If using Novell NetWare, installation of Novell's *Client 32 for Windows* is strongly recommended. This will greatly enhance the ability to BiAdmin to work with NetWare servers.

Installation

Use the supplied CD-ROM. This CD-ROM will usually auto-run. If auto-run is disabled on your PC, run the SETUP.exe program in the root folder.

- Select ***Installation*** and this will give you the options of BiAdmin installation
  - BiAdmin is always installed if the ***Administrator*** option is chosen.
  - If using the ***Custom*** option on the CD-ROM, select *BiAdmin.*

Operation

- Start the program by using the icon created by the setup program.
- When run, the program searches the network for all active Print Servers, then lists them on screen, as shown by the example screen below.

Main Screen

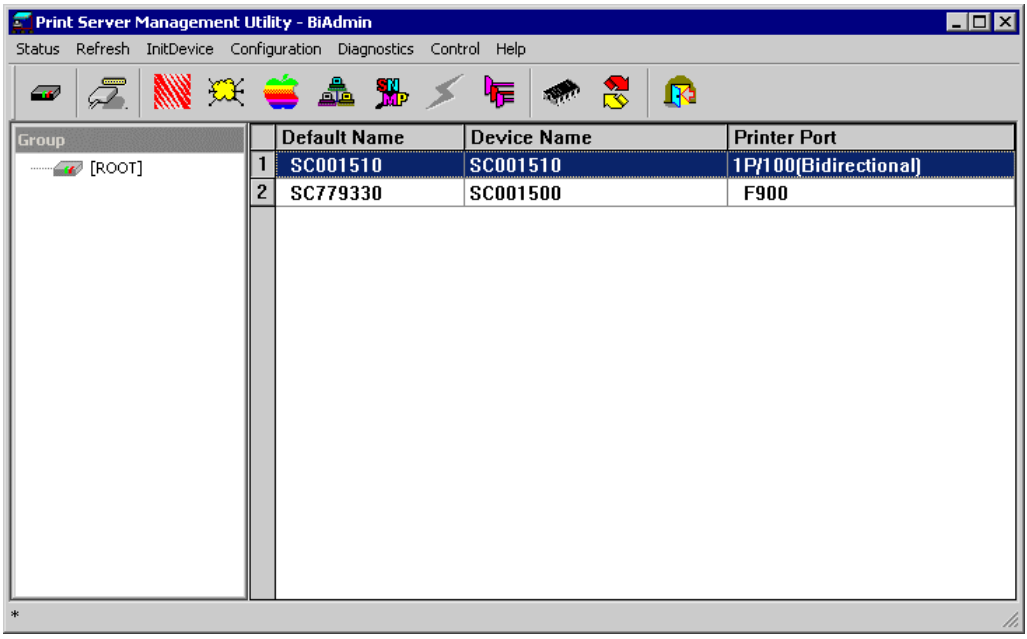


Figure 14: BiAdmin Main Screen

Groups

On the left side of the screen is a column for *Groups*. Each Print Server may be placed in a group, using the *Configuration-System Configuration-Groups* menu option.

- If a group is selected, only Print Servers in that group will be listed on the right side of the screen.
- By default, all Print Servers will appear in the [ROOT] group.
- A Print Server can only be a member of one (1) group, and will always be a member of a group.
- Use the *Configuration-System Configuration-Groups* menu option to select a group for the current Print Server.
- To create a new Group and add the current Print Server to it, just enter a group name in the dialog. (See example screen below)

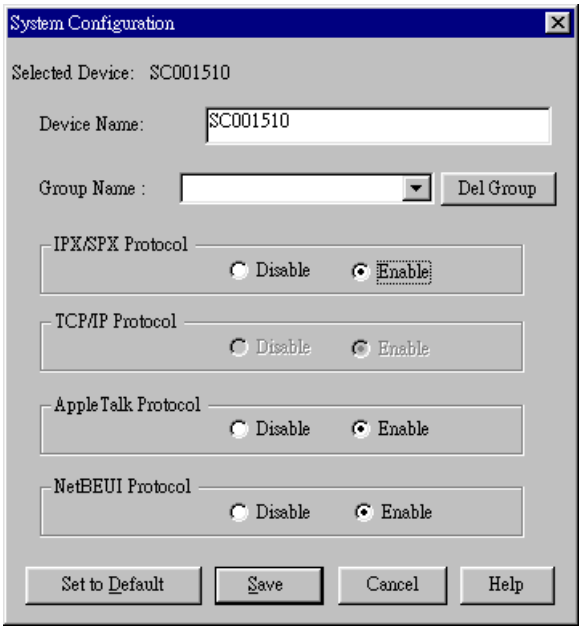


Figure 15: System Configuration - Groups

Device List

On the right side of the screen is a list of all Print Servers found on the network. For each device, the following data is shown:

- **Default Name**. The *Default Server Name* is shown on a sticker on the base of the device.
- **Device Name**. If you have not changed the name, this will be the same as the *Default Server Name*.
- **Printer Port**. The number and type of ports is shown in the right column.

If the desired Print Server is not listed, try the following:

- Check that the device is installed and ON, then *Refresh* the list.
- Use the *InitDevice - Find* menu option to search for the Print Server. You need to know the *Default Name* of the Print Server. The *Default Server Name* is shown on a sticker on the base of the device.
- If the Print Server is on another LAN segment, use the *InitDevice - Attach Remote* menu option to locate and display the Print Server.
- For networks using ONLY TCP/IP, Print Servers without an IP Address will not appear. Use the *InitDevice - Set IP Address* menu option to assign an IP Address, then *Refresh* the list. You need to know the *Default Name* of the unlisted device in order to assign an IP Address. The *Default Server Name* is shown on a sticker on the base of the device.

Status Icons

Once a Print Server has been selected, the Icons become active.

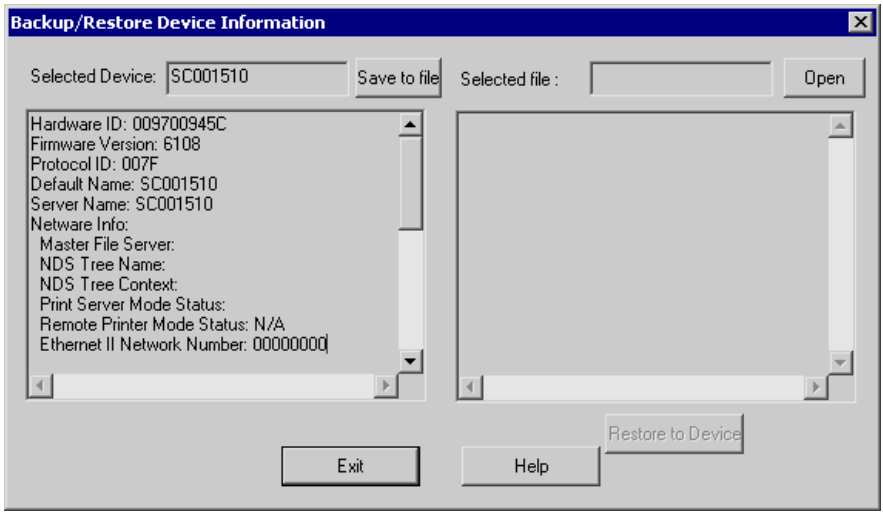
The icons provide status information as well as access to the selected Print Server settings. If an icon is grayed out, that option or protocol is unavailable.

Device Information

Menu equivalent: ***Status - Backup/Restore Device Information***

All of the settings for the current device are displayed in a read-only scrollable list in the left panel.

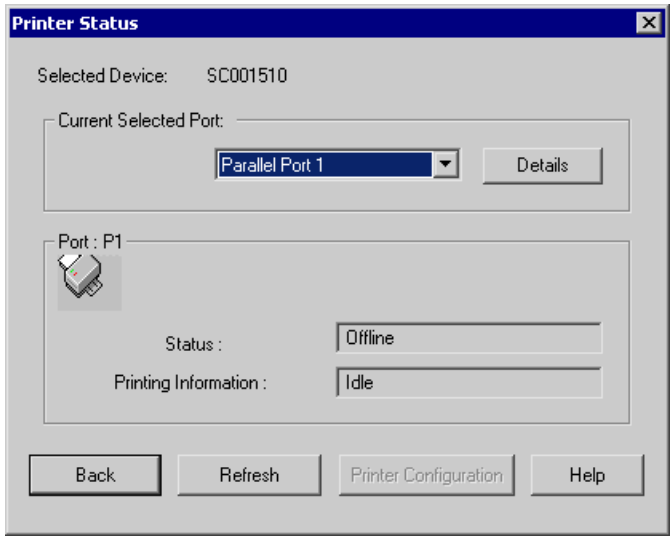
You can use the "Save to File" and "Restore to Device" buttons on this screen to save a copy of the selected device's CONFIG file to your PC, or restore a previously saved file to the selected Print Server.



Printer Status

Menu equivalent: ***Status - Port Status***

After selecting this icon, a *Detail* button will be available to show more information about the printer.



Configuration Icons

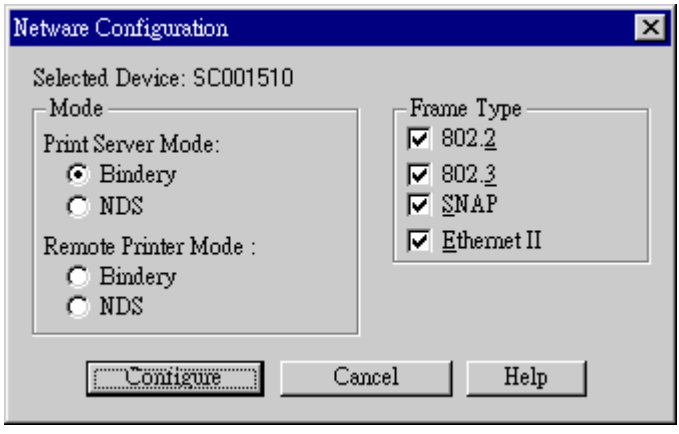
The following icons are available. Refer to the on-line help for details of the data on each screen.

NetWare

Menu equivalent: ***Configuration - NetWare***

BiAdmin supports configuration of both the Print Server and Novell NetWare servers.

- You need to be logged into the NetWare server(s) with ADMIN rights.
- The screens you will see, and the operations which can be performed, depend on whether or not you have ***Novell NetWare Client 32*** installed.
  - If ***Novell NetWare Client 32*** is installed on your PC, BiAdmin allows you to configure both the Print Server and the NetWare server from within BiAdmin.
  - If this ***Novell NetWare Client 32*** is NOT installed, you can configure only the Print Server itself, not the NetWare server.
- The **NetWare Manual** (in the Manual\NetWare folder on the CD-ROM) contains detailed information on using BiAdmin with NetWare Servers.

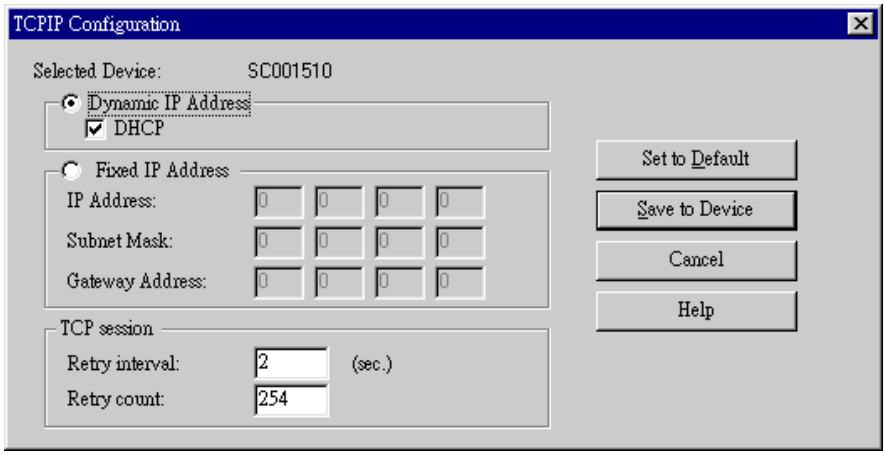


TCP/IP Configuration

Menu equivalent: ***Configuration - TCP/IP***

Selecting this icon will allow configuration for TCP/IP. Some models may also display the setup data for the proprietary "Internet Printing" feature (printing via E-Mail).

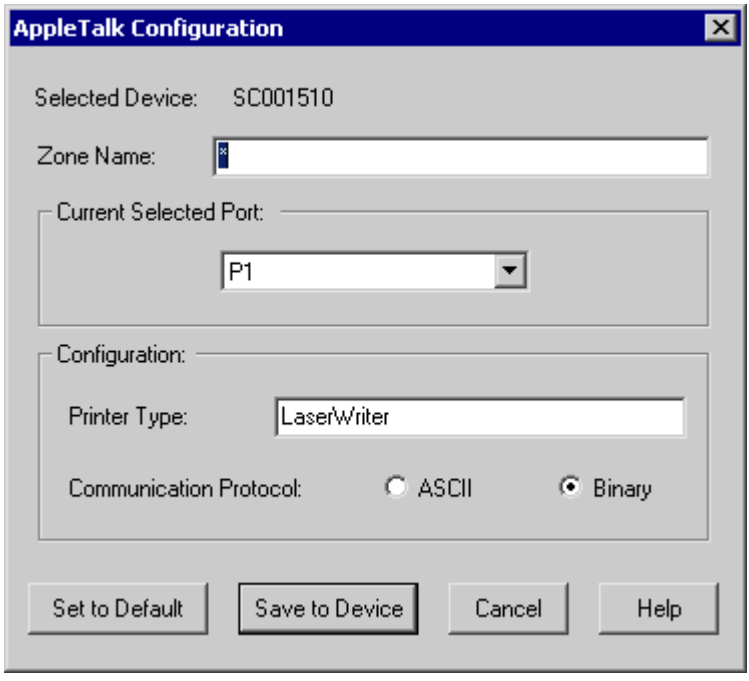
PS5120, PS5010 and AS5100 also support Auto-IP function. If the Print Server is set to " Dynamic IP Address ", but there's no DHCP server found on the network, the Print Server will get an IP from the range of 169.254.1.1 ~ 169.254.254.254 automatically. Even though the device was initialized with an Auto-IP executed, the device will change to DHCP whenever a DHCP server was detected.



AppleTalk Configuration

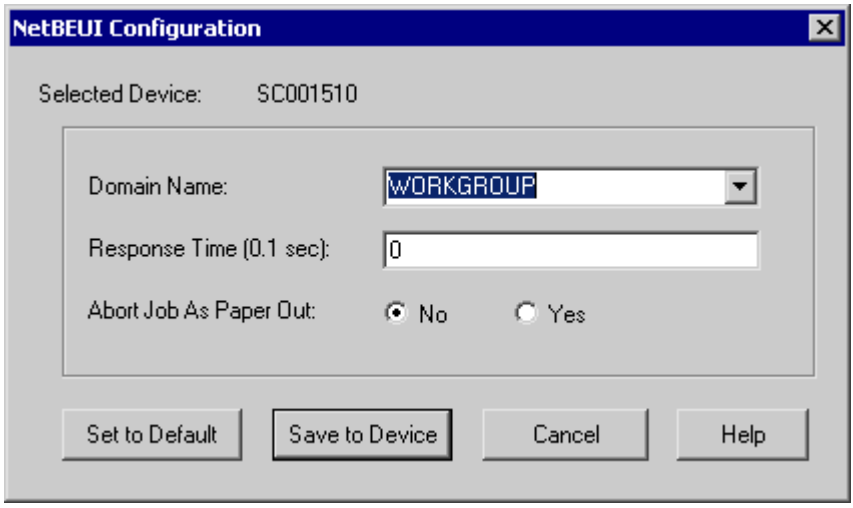
Menu equivalent: ***Configuration - AppleTalk***

Generally, no Print Server configuration is required in order to use AppleTalk.



NetBEUI Configuration

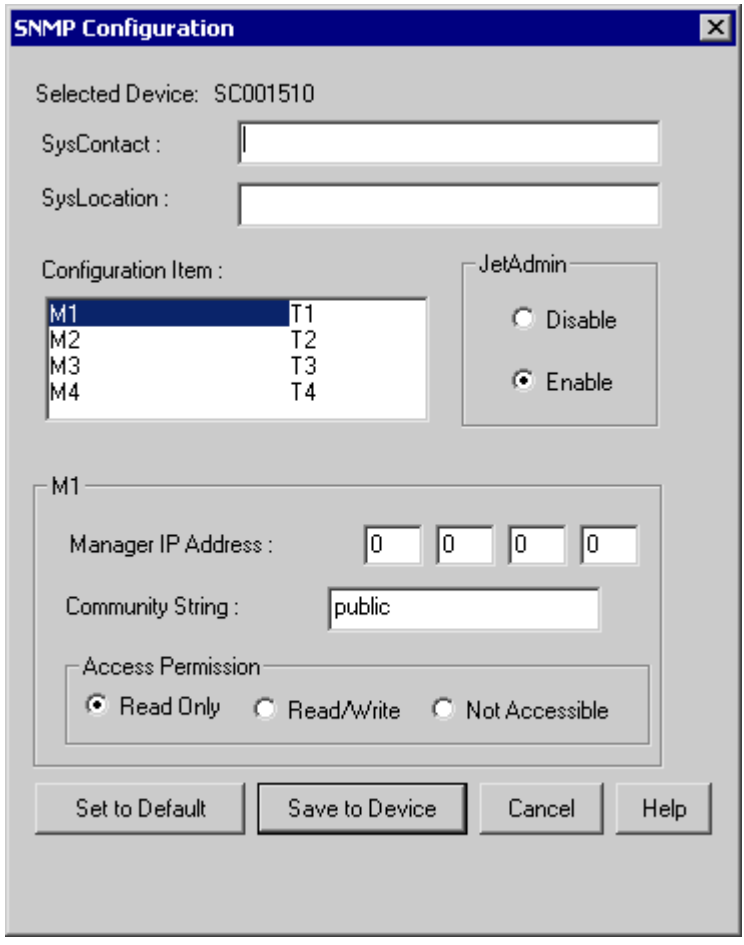
Menu equivalent: ***Configuration - NetBEUI***



SNMP Configuration

Menu equivalent: ***Configuration - SNMP***

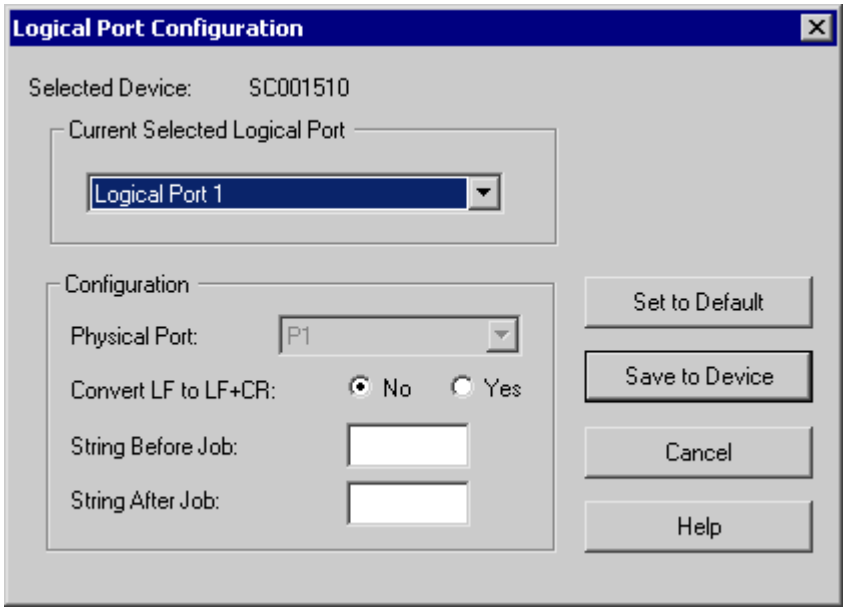
Configuration is only required if using Simple Network Management Protocol. See Chapter 7 for details.



Logical Port Configuration

Menu equivalent: ***Configuration - Logical Port***

Logical port (printers) can be used in the NetWare and Unix environments.



Other Icons

Upgrade

Menu Equivalent: ***InitDevice - Upgrade***

This option allows you to upgrade the firmware for the selected Print Server. Before using this option, you need to obtain the .BIN file for the firmware upgrade, and copy it to the same directory as BiAdmin.

Refresh

Menu Equivalent: ***Refresh***

Select this icon to update the Print Server device listing after changing the name or IP Address.

Exit

Menu Equivalent: ***Status - Exit***

Exit the BiAdmin program. This does not save any changes you have made; you must *Save to Device* on each screen.

Menu Options

Status Menu

Device Info	Same as *Device* button. Display all the configuration and status information about the selected Print Server. The data is presented in a scrolling, read-only window.
Port Status	Same as *Printer Status* button.
Exit	Same as *Exit* button.

InitDevice Menu

Reset Device	This will cause the device to reboot. This should be done after making any configuration changes, or if the device stops responding after some problems.
Restore Factory Default	This will restore ALL device values to their factory defaults. To restore only the current screen, use the *Set to Default* button on the screen.
Set Password	Set the password for the selected Print Server.
Set IP Address	For TCP/IP networks only: • If a Print Server does not appear on the main screen, use this option to set a Device IP Address, Gateway IP Address, and Network Mask to the Print Server. • This should only be necessary if your LAN is using ONLY the TCP/IP protocol. In other cases, BiAdmin will use IPX/SPX to locate the Print Server even if it doesn't have a valid IP Address. • To locate the Print Server, enter the *Default Name*. The *Default Server Name* is shown on a sticker on the base of the device. • Enter the required IP Address, Network Mask, and Gateway IP Address. • After saving the data to the device, refresh the listing. The Print Server should then appear in the device list on the main screen.
Attach Remote	This is used to connect to a Print Server device on another LAN segment. If your LAN does not have a Router, ignore this option.
Connected Protocol	This option allows you to designate which LAN protocol will be used for communication between the selected device and this application. You should select ONE protocol only.
Upgrade	Upgrade the firmware in a Print Server. See **Upgrade Icon** for details.
Find	Use this option to use the IPX/SPX protocol to locate a Print Server on the LAN. Simply enter the *Default Name* of the Print Server you wish to locate. The *Default Server Name* is shown on a sticker on the base of the device.

Configuration Menu

The ***System*** option allows you to:

- Change the name of the selected Print Server.
- Change the "Group" for the selected Print Server.

- Set the Network Protocols used the selected Print Server. (Any protocols not used on your LAN may be disabled. This may improve performance.)

The ***Configuration Menu*** also contains selections for each of the following. These have the same effect as the corresponding Icon:

- NetWare
- TCP/IP
- AppleTalk
- NetBEUI
- SNMP
- Logical Port

Diagnostics menu

Print Test Page	Use this option to print a test sheet from the selected Print Server port. The test print out will include status information.

Control Menu

Abort Mail Print Job	This menu option refers to print jobs which has been received through the proprietary "Internet Printing" feature (printing via E-Mail). This menu option can be used to terminate a print job which is not printing correctly.

The "Abort Mail Print Job" menu option can NOT be used to cancel IPP (Internet Printing Protocol) print jobs.

Chapter 6

Web-Based Management

6

This chapter explains how to use your Web Browser to configure the Print Server models

Overview

The Print Server models incorporate the HTTP server. This allows you to connect to the Print Server and configure it using your Web Browser. Most browsers should work, provided they support tables and forms.

Preparation

Because it supports dynamic IP Address allocation using DHCP, BOOTP, or RARP, the Print Server ships with an IP Address of 0.0.0.0. This is NOT a valid IP Address.

Therefore, you must do ONE of the following:

- Check your **DHCP server** (if you have one), and determine the IP Address allocated to the Print Server.
- Use the **Diagnostic Button** (if fitted) to print a report which includes the current IP address. (Press the Diagnostic Button, and hold it for 2 seconds.)
- Use the **Setup Wizard**, **BiAdmin** or another Print Server utility to allocate a valid IP Address to the Print Server.
- Add an entry to the **`arp`** table to associate the hardware address of the Print Server with the desired IP address, as follows:

  `arp -s IP_Address 00:c0:02:xx:xx:xx` (Unix)

  `arp -s IP_Address 00-c0-02-xx-xx-xx` (Windows)

  Where:
  `IP_Address` is the IP Address you wish to assign to the Print Server.
  `00:c0:02:xx:xx:xx` is the hardware address of the Print Server.

Example (Unix):

```
arp -s  192.168.0.21  00:c0:02:12:34:56
```

Example (Windows):

```
arp -s  192.168.0.21  00-c0-02-12-34-56
```

Note: The hardware address of the Print Server is shown on a sticker on the base of the device.

Connecting to the Print Server

1. Start your Web Browser.
2. In the *Address* box, enter *HTTP://* followed by the IP Address of the Print Server.

   e.g.

   ```
   http://192.168.0.21
   ```

3. You will then be prompted for the password. If no password has been set, just press ENTER.
4. Use the menu bar on the top of the screen to move about. Remember to save each screen before changing to a different screen.

Configuration Screens

Depending on your models, the Web-based interface may look different to the images shown in the User's Manual.
The functions have not changed, and the description of each setting is correct. Only the appearances are different.

AppleTalk

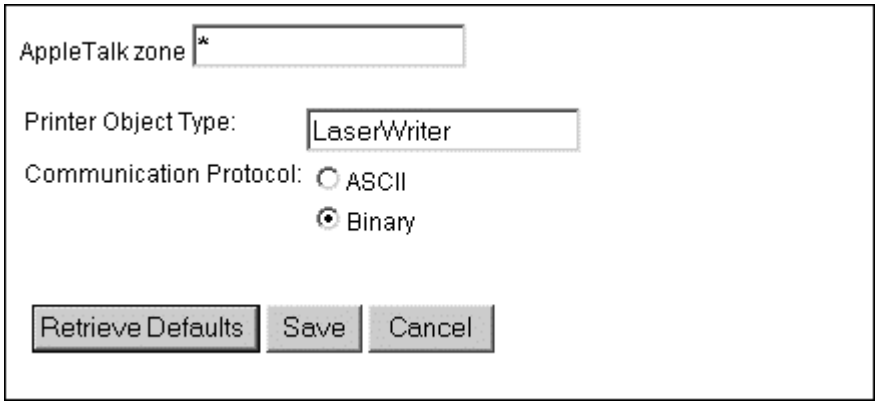


Figure 16: AppleTalk Screen

AppleTalk zone	This determines which Apple systems can gain access to this printer.
Printer Object Type	These are text fields, used to describe the printer driver used for each port. The Print Server is designed to work with LaserWriter (or 100% compatible) printers.
Communication Protocol	Sets whether the port uses ASCII or Binary Communication Protocol.. The default is Binary.

NetBEUI

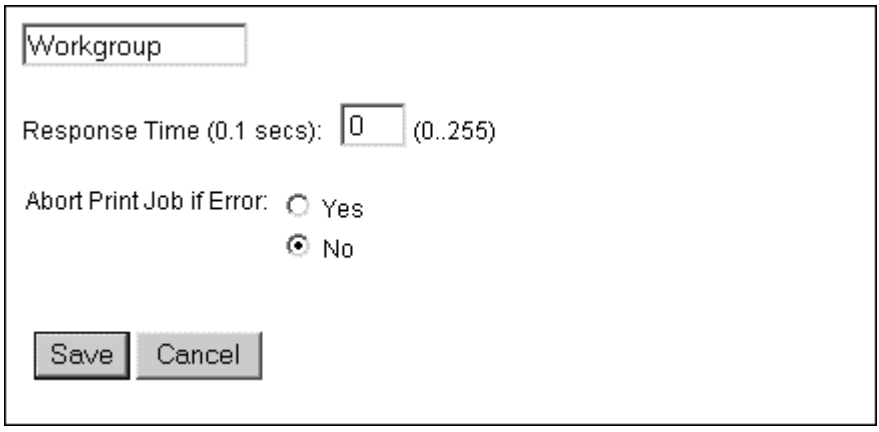


Figure 17: NetBEUI Screen

Domain Name	Enter the designated work group to be serviced by the Print Server. This field is not case sensitive, so names with different case will be considered to be the same name.
Response Time	Set how fast jobs are sent to the printer. The default value of zero (0) delay should be increased only if your printer cannot cope with no delays.
Abort Job if Error	YES terminates a print job if a printing error occurs. NO (default) will try to continue but may cause print errors. If print errors occur, try setting this value to YES.

NetWare

The NetWare screen is not be available for model PS5120 and PS5010.

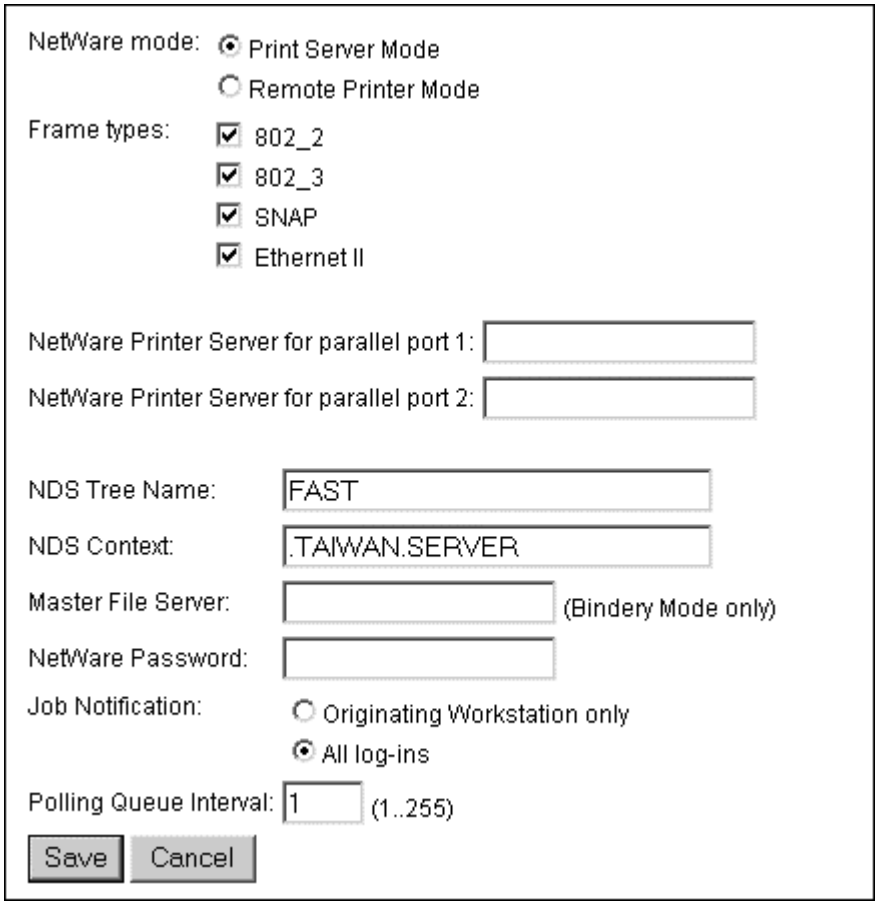


Figure 18: NetWare Screen

General	
NetWare Mode	Select *Print Server* or *Remote Printer*, as appropriate. The default is *Print Server*.
Frame Type	Select the frame types used by your network. (Ethernet 802.2, Ethernet 802.3, Ethernet SNAP, and Ethernet II) By default, all frame types are enabled.
Remote Printer Mode	
Novell Printer Server for P1	NetWare print server to service the Print Server's parallel port 1.
Novell Printer Server for P2	NetWare print server to service the Print Server's parallel port 2 (P2), if fitted.
Print Server Mode	
NDS Tree Name (NDN mode only)	The File Server's NDS tree name. (root name)
NDS Context (NDS Mode only)	Path to the NDS Context. This does not include the Context itself, and each OU should be separated by a period. e.g. `department.company`

Master File Server (Bindery Mode only)	Name of the Print Server's master file server.
NetWare Password	The password on the NetWare Server. The Print Server device needs this password to connect to the NetWare server.
Job Notification	The options are: • Job notification at only the workstation where the print job originated. • Job notification at all workstations that you have logged into.
Polling Queue Interval	Defines how often the Print Server will poll the queues to be serviced.

SNMP (Simple Network Management Protocol)

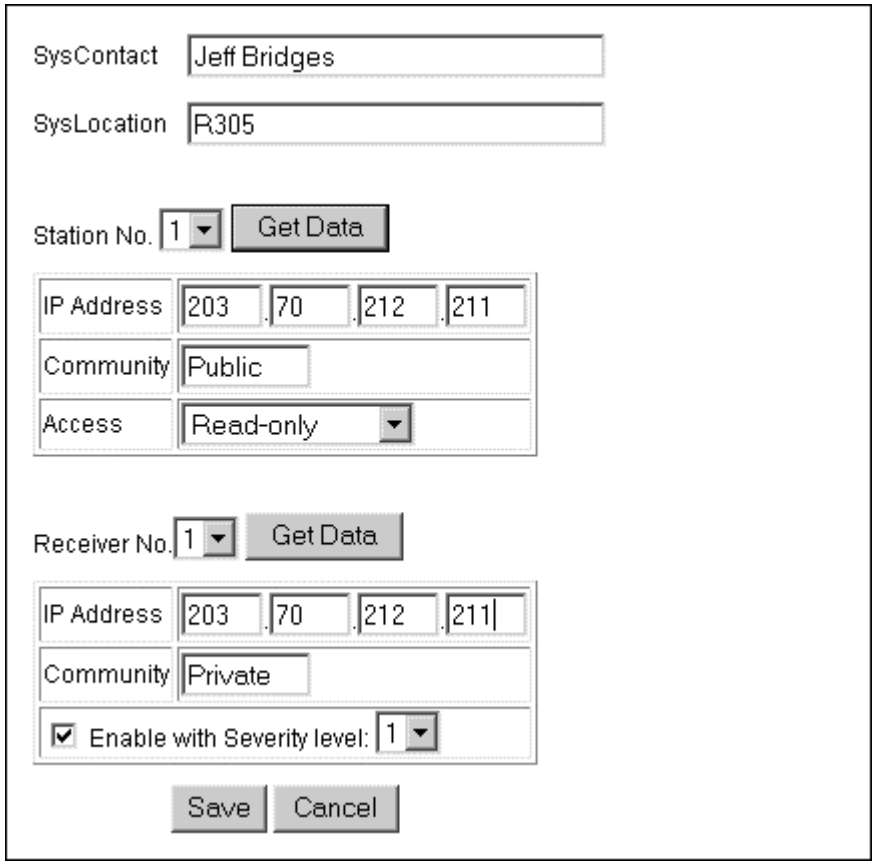


Figure 19: SNMP Screen

SysContact	Text Field - Name of the contact person.
SysLocation	Text Field - Location of the contact person.
Management Stations	
Station No.	Select the Management station (1..4), and click the ***Get Data*** button to update the display for the selected item.
IP Address	Enter the IP Address of the management station, which has the SNMP program installed.
Community	This is a text field. Enter the name of the community.

Access	Select the desired level of access.
Trap Receivers	
Receiver No.	Select the Trap Receiver number (1..4), and click the ***Get Data*** button to update the display for the selected item.
IP Address	Enter the IP Address of the Trap Receiver, which will be sent the Trap message.
Community	This is a text field. Enter the name of the community.
Enable	Check to enable; select the severity level. **Note:** Currently, all traps are level 1.

TCP/IP

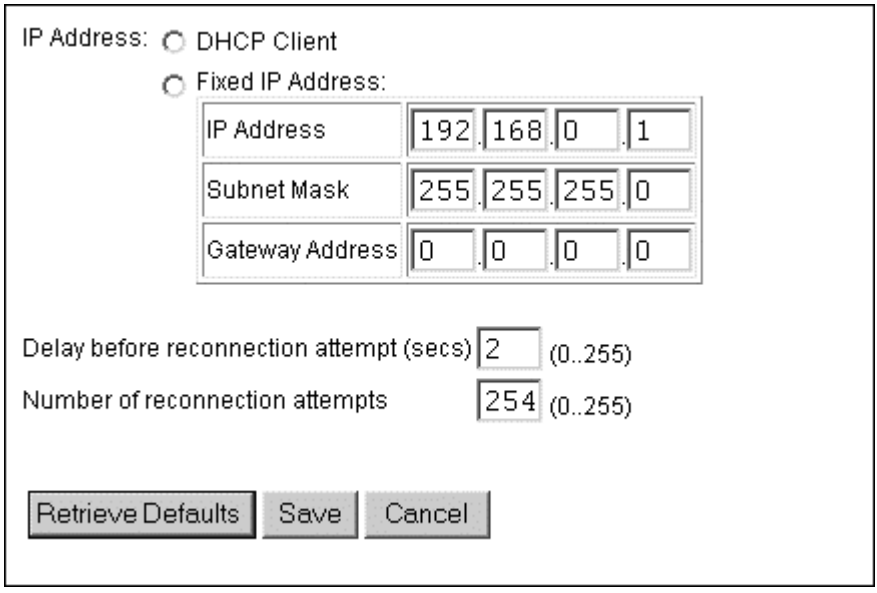


Figure 20: TCP/IP Screen

IP Address	IP Address assigned to this device. If using dynamic IP Addresses (DHCP, BOOTP, rarp), this should be left at 0.0.0.0.
Subnet Mask (Network Mask)	If the Router (Gateway) Address is 0.0.0.0, the Subnet Mask should also be left at 0.0.0.0. If you have a router, enter the Subnet mask for the segment to which the Print Server is attached.
Gateway Address	If your network segment has a router or gateways, enter its IP Address here. Otherwise, leave the address as 0.0.0.0.
Connection	
Delay before reconnection attempts	Sets how long the Print Server should wait before retrying a TCP/IP connection which is lost. Allowable values are from 0 to 255 seconds, with 2 as the default.
Number of reconnection attempts	Set how many attempts at reconnection will be made. After that, the TCP/IP session will be terminated. Allowable values are from 0 to 255, with 254 as the default.

Configure Server

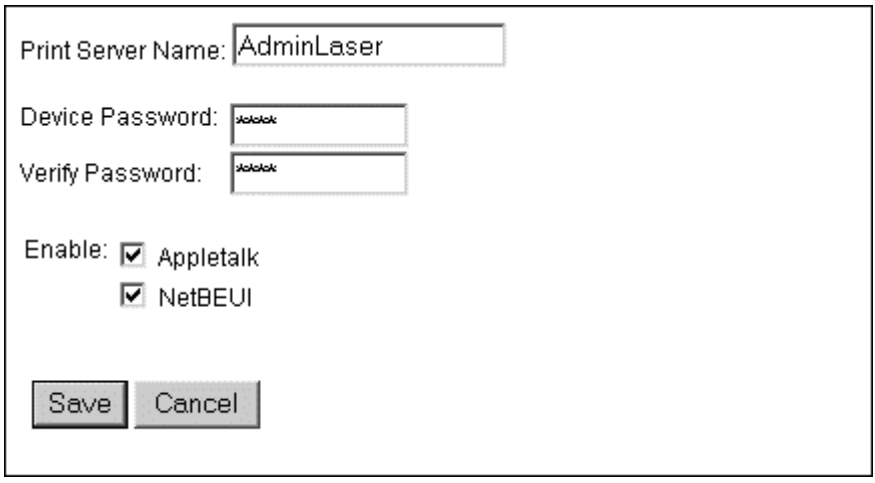


Figure 21: Configure Server Screen

Print Server Name	Change the default name if you wish. The new name must not contain any spaces or blanks.
Password	Enter the device password, and again in the ***Verify*** field. Once a password is entered, it is required in order to gain access and change the configuration.
Enable Protocols	Non-TCP/IP protocols (depend on the protocols supported by the model) may be disabled if they are not required on your LAN.

Other Screens

Server Status

This screen shows server system data and the current settings for all of the other screens. It is read-only; no data can be input on this screen.

Printer Ports

This screen displays the current status of each port. For each port, the following data is listed:

- **Connected Printer**- the model name of the printer connected to the port, if the printer name is known. (If the printer is not bi-directional, this information is unavailable.)
- **Status** - the current status of the printer (On-line, Off-line, Out of paper)
- **Printing Information** - this will show either *Idle* or *Printing*.

Logical Printers

Logical Printers (ports) can be used under Unix or NetWare. For each Logical Printer, the following fields are available:

Logical Printer (Port)	Select the Logical Printer Port you wish to configure. (L1 to L3 or L1 to L8, depending on your model) Click the ***Get Data*** button to update the display with the current data for the selected logical printer.
Port	Select the Printer Port which the Logical printer will use.
Pre-string	The printer control string (**in hex**) to be sent to the printer before each print job. This string cannot exceed 15 characters.
Post String	The printer control string (**in hex**) to be sent to the printer after each print job. This string cannot exceed 15 characters.
Convert LF to CR+LF	If checked, LF (line feed) characters are changed to CR+LF (carriage return + line feed).

Internet Printing

See page 47 for details of this feature.

Chapter 7
Special Features

7

This chapter covers the special features of the Print Server.

Overview

The Print Server has three (3) special features:

- Print Servers support IPP (Internet Printing Protocol).
- All models support the proprietary *Internet Mail Printing* system.
- SNMP (Simple Network Management Protocol) is supported by all models.

Internet Printing Protocol (IPP)

IPP (Internet Printing Protocol) is a new standards-based system to allow remote printing from a PC to any accessible printer. Normally, the printer will be attached to a computer or other device which functions as an **IPP Server**.

For client PCs, it is necessary to install a compatible **IPP Client** program. The Client must also know the IP Address or URL or the IPP Server.

IPP support is available ONLY on the AS5100, AS560H, PS5120 and PS5010. Do NOT attempt to use IPP on other models.

IPP Server Configuration

The Print Server contains the necessary firmware to act as an **IPP Server**. No additional configuration is necessary. However, the following requirements must be met.

- The Print Server must have a valid IP Address. For printing via the Internet, the Print Server's IP Address must be external (allocated by your ISP), rather than an IP Address on your local LAN.
- Any Router, Gateway or Firewall linking your LAN to the Internet must NOT block the IPP protocol.
- You must advise clients of the correct URL or IP Address of the IPP Server. To use a URL rather than an IP Address, you need to register the domain name for the URL.
- Unless clients are using Windows 2000, you must provide your clients with the supplied IPP Client software. If it is not convenient to provide the CD-ROM, supply the IPP_CLIENT.EXE file, located in the IPP folder.

IPP Client Setup - Windows 95/98/Me/NT 4.0/XP

The IPP Client Software can be installed on any of the following systems:

- Window 95/98/Me/2000/XP
- Windows NT 4.0

Installing from the CD-ROM

1. Insert the CD-ROM in your drive. If the program does not start automatically, run the SETUP program in the top-level folder.
2. Follow the prompts until you reach the *Select Installation* screen, and select *IPP Client*.
3. At the next screen, select the *Install IPP Client* option.
4. Click *Next*, and step though the remaining screens to complete the installation.

Installing using IPP_CLIENT.EXE

1. Run this program to unzip the included files.
2. The IPP Setup program will then run.
3. Follow the prompts to complete the installation.

IPP Client Configuration (Windows 95/98/Me/2000/XP/NT 4.0)

1. Run the "Add IPP Port" program entry created by the installation. A screen like the following will be displayed.

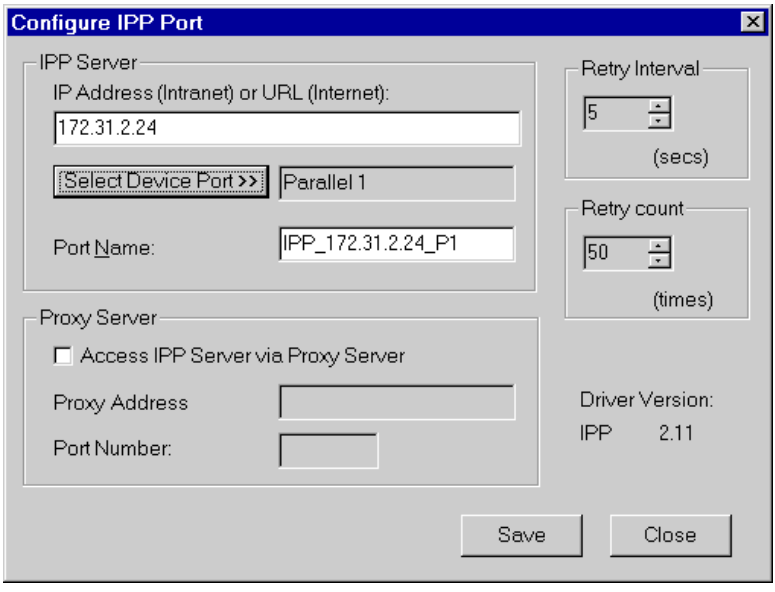


Figure 22: IPP Port

2. If Internet access from your location is via a Proxy Server, check *Access IPP Server via Proxy Server*, and enter details of your Proxy Server. (This will be the same as your Browser configuration.)
3. Enter the IP Address or URL of the IPP Server.
4. Click *Select Device Port* to view the available ports on the IPP Server, and select the appropriate port. A connection to the IPP Server will be established at this time.

5. Click *Save* to create the IPP port on your system. You will see a message confirming that the port has been created, then the following dialog:

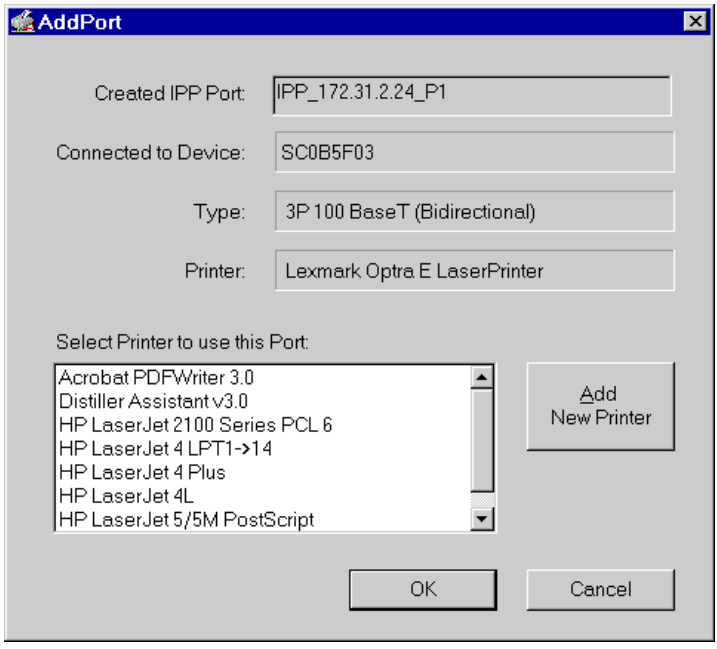


Figure 23: Select Printer for IPP Port

6. Either select an existing printer to use the new port, and click OK.

   OR

   Click the *Add New Printer* button to create a new printer to use the IPP port. This will start the *Add Printer* wizard. Follow the prompts to complete the process. Ensure that the new printer uses the IPP port.

Installation is now complete.

- To create additional IPP Ports, repeat the entire procedure.
- The Proxy Server and other options are set individually for each IPP Port.

Changing the IPP Port Settings

After the IPP port is created, you can reach the screen shown in Figure 22: IPP Port using the Windows *Port Settings* button:

1. Open the *Printers* folder (*Start* - *Settings* - *Printers*)
2. Right-click the IPP Printer, and select *Properties*.
3. Locate and click the *Port Settings* button (*Details* or *Port* tab, depending on your version of Windows).

There are 2 settings - *Retry Interval* and *Retry Count* - which can be adjusted if you have problems connecting to the IPP Server.

- **Retry Interval** sets the time interval (in seconds) between connection attempts. Increase this number if you have a poor connection, or the remote server is very busy.
- **Retry Count** sets how many connection attempts will be made. Increase this number if you have a poor connection, or the remote server is very busy.

IPP Client Setup - Windows 2000/XP

Windows 2000 has its own IPP Client, and there is no need to install the supplied IPP Client Software. To use Windows 2000's IPP Client with the Print Server, follow this procedure:

1. Start the *Add Printer* wizard.
2. Select *Network Printer*, and click "Next" to see the *Locate your Printer* screen, as shown below.

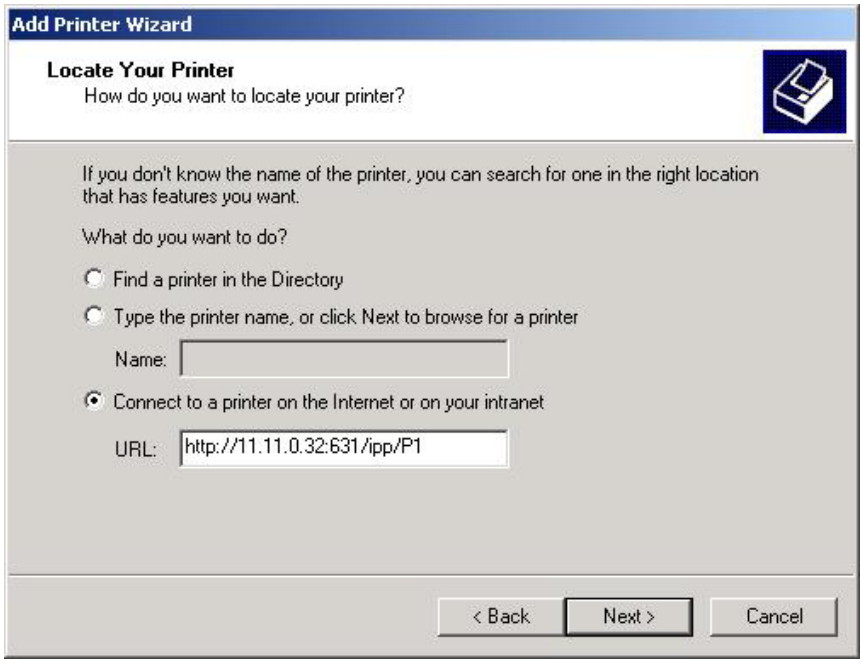


Figure 24: Windows 2000 - Locate your Printer

3. Select *Connect to a printer on the Internet or on your Intranet*, and enter the URL of the IPP Server as follows, where `ip_address` represents the IP Address of the IPP Server, and 631 is the port number.

Port 1	`ip_address:631/ipp/P1`
Port 2 (if exists)	`ip_address:631/ipp/P2`
Port 3 (if exists)	`ip_address:631/ipp/P3`

These entries are case sensitive. They must be entered as shown, with "ipp" in lower case, and P1, P2 and P3 in UPPER case.

4. If the connection can be established, and the printer on that port is on-line, the following dialog will be displayed.

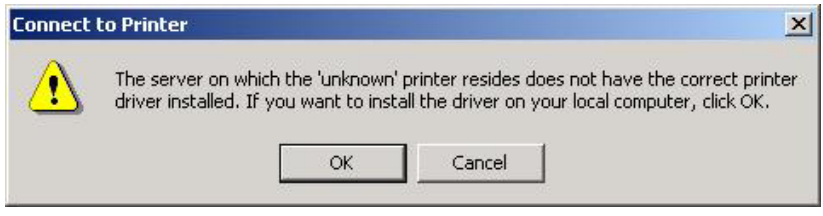


Figure 25: Windows 2000: No printer driver

5. Click "OK", and then select the printer manufacturer and model to match the printer connected to the port on the IPP Server.
6. Click "Next", and complete the Wizard.
   The IPP printer is now ready for use.

Using IPP Printers

The IPP Printer can be selected and used like any other Windows printer. If the IPP Server is not on your network, your Internet connection needs to be active.

If you wish to check the availability of the remote IPP Server, you can use the *Query IPP Printer* program installed with *Add IPP Port*.

An IPP Server may be unavailable for any of the following reasons:

- It is powered off.
- A printer problem has caused the IPP Server to cease responding, and a restart (reboot) is required.
- The Server's IP Address has changed.
- The Internet connection for the IPP Server is down.
- Network congestion causes the connection attempt to time out.

If using the supplied IPP Client software, there are 2 settings - *Retry Interval* and *Retry Count* - which can be adjusted if you have problems connecting to the IPP Server.

See the previous section Changing the IPP Port Settings for details.

Internet Mail Printing

The Internet Mail Printing System allows users to print data to your printer across the Internet. Users send the Internet Print Server an E-Mail, with the print job normally sent as an attachment to the E-Mail. The Print Server will retrieve the E-Mail and print it.

System Requirements

Mail Server

- **Accessibility.** The Mail Server must be accessible by the intended clients or users. Normally, this means a permanent connection to the Internet.
- **Protocols.** The Mail Server must support the POP3 and SMTP protocols. The Internet Printing System uses these protocols and the most common E-Mail formatting standards:
  - MIME (Multipurpose Internet Mail Extensions)
  - Base64 Encoding (for mail attachments)

Internet Print Server

- **TCIP/IP Protocol.** The LAN must use the TCP/IP protocol.
- **Mail Server Access.** The Print Server must be able to access the Mail Server using a single IP address.
- **Mail Account.** The Print Server must have a Mail Account. Users print by sending an E-Mail to this mail account.

User (Client) Requirements

- **Internet Connection.** Either through a LAN, or dial-up.
- **E-Mail address.** This is used to notify the user that their print job has been done, or if there any problems.
- **Printer Driver.** Users must have a printer driver which matches the printer connected to the remote Internet Print Server.
- **Print Capture Software.** To print more than plain text, users require InterNet Printing Port software to capture the print job and convert it into an E-Mail attachment.
  The Internet Printing Port software is available for the following operating systems:
  - Microsoft Windows 95
  - Microsoft Windows NT 3.51 or later.

Internet Mail Printing Configuration

The Print Server must be configured with the data in the following table.

The supplied **BiAdmin** utility program, or the Web interface (on 100BaseT models) can be used to set the following entries on the TCP/IP screen.

Mail Server IP Address	The IP Address of the E-Mail Server used by the Print Server.
Mail Account	The name of the E-Mail Account used by the Print Server.
Mail Account Password	Enter the password for the above Mail Account here.
Check Mail Interval	Sets how often to check for mail. Values range from 0 to 65,535 minutes, with 0 meaning a continuous connection and 1 as the default.
Print Banner	If YES (default), a banner page is printed to identify the owner of the print job.
Redirect Mail Account	Jobs which can not be printed will be sent to this account. If blank, unprintable jobs will be discarded.
Default Printer Number	Printer number for all Internet print jobs. Only one port can be selected. Users on the LAN can also use this port.
Print every E-Mail	If ON, then all E-Mail received is printed. Otherwise, only E-Mail from the InterNet Printing Port will be printed.
Activate Response Mail	If YES, all print jobs receive an E-Mail response. If NO, only users who set this option in their InterNet Printing Port software receive an E-Mail.
Printer Model ID String	This text field identifies the printer used for Internet printing. This value is sent to remote users upon request.

User Software

The software provided for remote users (InterNet Printing Port) should be installed by everyone intending to use Internet printing. Otherwise, remote users can print correctly only if:

- They send an E-Mail directly to the Print Server Mail Account, using their normal E-Mail application.
- The E-Mail contains plain text only.
- The Internet Print Server is configured with *Print every E-Mail* ON.

Installation of the InterNet Printing Port software will create a new printer port. After attaching the correct printer to this port, users can print to the Internet Printer using any Windows application.

Installation - User Software

1. Run the InterNet Printing Port installation program SETUP.EXE
2. Default values for the installation are:
   - **Directory -** C:\Program Files\Internet_Printer
   - ***Start Menu* folder -** InterNet Printing Port Driver
3. You will then see the *Configure Port* screen, as shown in the following screenshot.

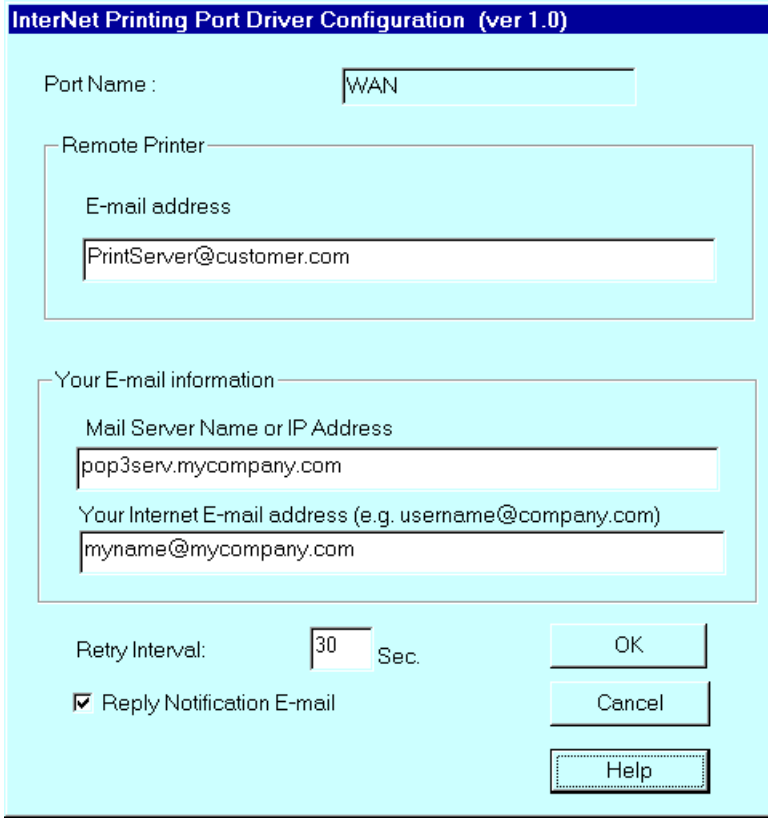


Figure 26: InterNet Printer Port

4. The following data must be provided.

Port Name	Enter a descriptive name (e.g. "WAN") for the new printer port.

Remote Printer E-mail Address	The E-Mail address for the Internet printer. Your print jobs will be sent to this E-Mail address.
Mail Server Name or IP Address	This is the name or IP Address of your Mail Server. If you are on a LAN, ask the LAN Administrator. If using a dial-up connection, use the data provided by your ISP.
Your Internet E-mail Address	The normal address that people use to send you E-mail.
Retry Interval (Seconds)	If unable to connect to the E-Mail server, retry after this time period (1 to 255 seconds, 30 is usually OK).
Reply Notification Mail	Check to receive an E-Mail when your print job has been processed.

5. On completion, a new printer port will have been created.

Using the new Port

The Windows Control Panel is used to connect the correct printer to the InterNet Printing Port. In Windows 95/NT, the procedure is:

1. Select the Printer which matches the remote printer, then choose *Properties*, as shown in the example below.

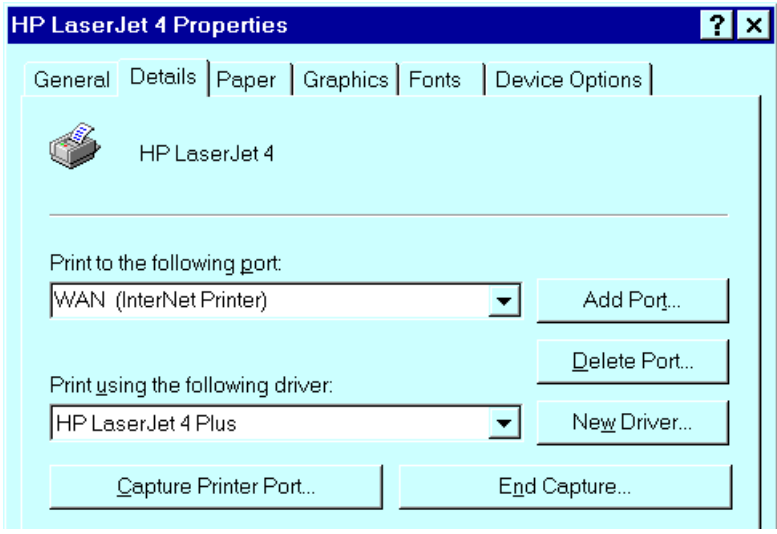


Figure 27: InterNet Printer Properties

2. Select the new port - WAN (InterNet Printer) in the example - as the port for this printer.
   - If you do not have the correct printer driver, or you wish to create another printer using an existing driver, use the Windows *Add Printer* facility.
   - Using the Windows *Port Settings* or *Configure Port* facility will reveal the same *Configure Port* screen shown in *Figure 26: InterNet Printer Port* on page 49.
   - If you wish to print to multiple Internet Printers, use the Windows *Add Port* facility to add a new InterNet Printer port. Ensure that the correct data is entered in each port, and that each port has a unique name.

Checking the Printer Driver

To make sure that the correct printer driver for the remote printer is installed on your system, you can use the InterNet Printing Port to send an E-Mail to the Internet Printer. The procedure is as follows:

1. Connect your default printer to the InterNet Printing Port.
2. Check that "Reply Notification Mail" in the InterNet Printing Port is ON.
3. From Notepad or another text editor, print a short message (e.g. "This is a test print") to the Internet Printer.

You will receive a reply E-Mail containing the "Printer ID" which will identify the printer attached to the Print Server. If this does not match the printer driver you are using, install the correct printer driver.

Printing through the Internet

1. Create or open the document you wish to print.
2. Select the Printer connected to the InterNet Printing Port.
3. If you do not have a permanent Internet connection, establish a connection now. (**Note**: The InterNet Printing Port will NOT establish a dial-up connection, but it will send the E-Mail the next time you are connected.)
4. Print the document.
5. The InterNet Printing Port will generate an E-Mail and send it to the remote printer. The document will be encoded and sent as an attachment to the E-Mail. You will see a progress screen similar to the example below:

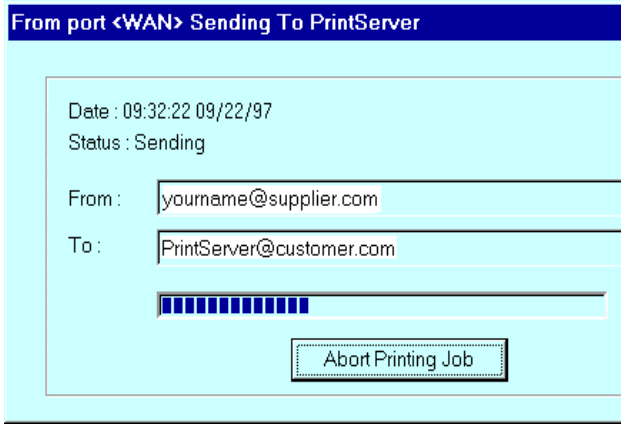


Figure 28 InterNet Printing Progress

6. Close the Internet connection if you opened it in Step 3.
7. If the "Notify after print job" option is set, you will receive an E-Mail when your job is printed.

Canceling a Print Job

Users cannot cancel a Print Job once it has been sent, but Print Jobs can be canceled at the Print Server. In **BiAdmin**, the *Control - Abort Mail Print Job* menu option can be used to cancel a print job which has already started printing.

SNMP

The Print Server supports SNMP (Simple Network Management Protocol). This allows network supervisors to monitor and control the Print Server using network management platforms such as HP OpenView, IBM SystemView, etc.

The appropriate MIB file must be imported into your SNMP management program using the *Import-Compile* command. Check your management program for details on this procedure. The MIB files are provided in the Mib folder on the CD-ROM, as follows:

Mib1p.mib	Single port models.
Mib2p.mib	Models with 2 parallel ports
Mib3p.mib	Models with 3 parallel ports

Configuring the Print Server for SNMP

Before using a SNMP Management station to manage the Print Server, the following settings should be assigned to it, in addition to the IP Address, Gateway Address, and Subnet Mask.

SNMP Settings

SysContact	Text Field - Name of the contact person.
SysLocation	Text Field - Location of the contact person.
Management Station IP Address(s)	Up to 4 Management Stations can be entered.
Trap Receiving IP Address(s)	Up to 4 Trap Receiving Stations can be entered.

Management Station Settings

For each Management Station, the following fields are available:

Access Permission	Options are: Read Only Read/Write Not Accessible
Community String	Leaving this blank will disable management by this station.

Trap Receiving Station Settings

For each Trap Receiving Station, the following fields are available:

Community String	Leaving this blank will disable management by this station.
Trap Enable	Use this option to Enable/Disable Trap Receiving by this station.
Trap Severity	In this version, all traps are level 1.

Chapter 8
Troubleshooting

This chapter describes some problem situations, which may arise, and the solutions to them.

Overview

If you encounter printing difficulties, please refer to the appropriate section.

If, after following the advice in these documents, the Print Server still does not function properly, please contact your dealer for further advice.

Hardware & LAN Problems

Problem No. 1	**All the Print Server's LEDs are off.**
Solution No. 1	Check the power supply or power connection.
Problem No. 2	**Print Server's status light continuously stays lit.**
Solution No. 2	Reset Print Server by unplugging the power supply and plugging it back in.
Problem No. 3	**Print Server's status light and power light stay on continuously and do not turn off.**
Solution No. 3	Reset the Print Server by unplugging the power supply or by pushing the reset push button, if fitted.
Problem No. 4	**The Print Server unit can not be found on the LAN, so configuration is not possible.**
Solution No. 4	**If using 10/100BaseT:** • Check the Hub. The link LED for the port to which the Print Server is connected should be ON. If it is Off, there is a problem in the network cable. • On the Print Server, check the LED(s) next to the connector. If the LED is not ON (or neither LED is On, if there are 2), the network connection is not working. Check the Ethernet cable and connectors. If they seem OK, set the DIP Switches of the Print Server to match your LAN environment. **If using TCP/IP:** • Ensure that there are no routers between the Print Server and the PC used for configuration. • Ensure that the PC used for configuration has the TCP/IP network protocol installed. Test its network connection by seeing if you can locate other LAN devices from the PC. (e.g. Use *Network Neighborhood* and try to browser the network.)
Problem No. 5	**I am using DHCP, and getting an IP Address conflict involving the Print Server.**

Solution No. 5	If the Print Server is left on, but the DHCP server is turned off, then the Print Server will retain its IP Address without the DHCP Server being aware of it. Simply reset the Print Server so it will obtain a new IP Address. This problem would also arise if you assigned static IP Address, which is within the range used by the DHCP server. If so, use another address which is NOT within the range used by the DHCP server.

AppleTalk (Macintosh)

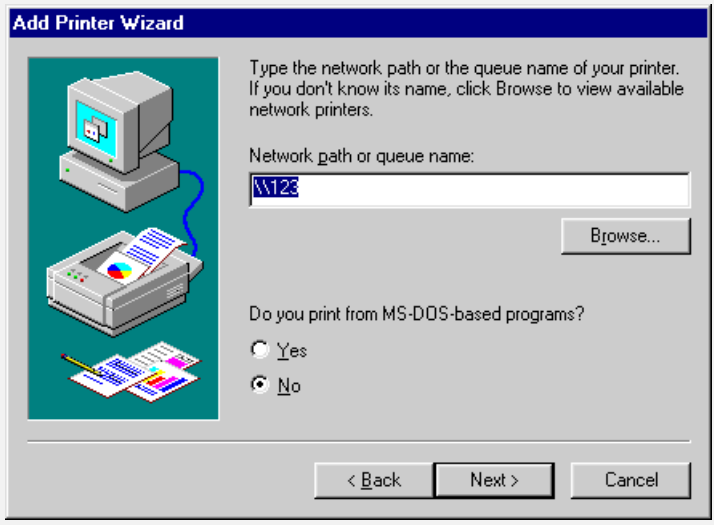
Problem No. 1	**Why do I get an incorrect printout?**
Solution No. 1	Some possible reasons are: • You may have chosen Binary encoding to print the file. Try to use ASCII encoding. • Some of the fonts, which are in your print file may not be supported by the printer. Try selecting LaserWriter 7 instead of LaserWriter 8.
Problem No. 2	**Can't find the Print Server's name in the Chooser.**
Solution No. 2	Try the following: 1. Make sure that AppleTalk is on (the button next to Active is highlighted in the Chooser). 2. Make sure the printer has been on and in the READY state for a few minutes. 3. Make sure the printer has not been renamed since its last appearance in the Chooser. 4. If the printer resides on a network with multiple zones, make sure the correct zone is selected from the AppleTalk Zones box in the Chooser.
Problem No. 3	**My document didn't print to the right printer.**
Solution No. 3	Check the following: • Another Print Server with the same name may have received your print job. Use the PSTOOL to reconfigure your Print Server name and ensure all Print Servers have unique names. • Make sure your application output encode is set to ASCII. If not, change it to ASCII.
Problem No. 4	**My file doesn't print with the correct fonts.**
Solution No. 4	Try changing your printer driver to LaserWriter 7.
Problem No. 5	**My EPS file doesn't print with the correct fonts.**
Solution No. 5	This is a problem that occurs in some application programs. Try downloading the fonts contained in the EPS file before printing the saved EPS file.

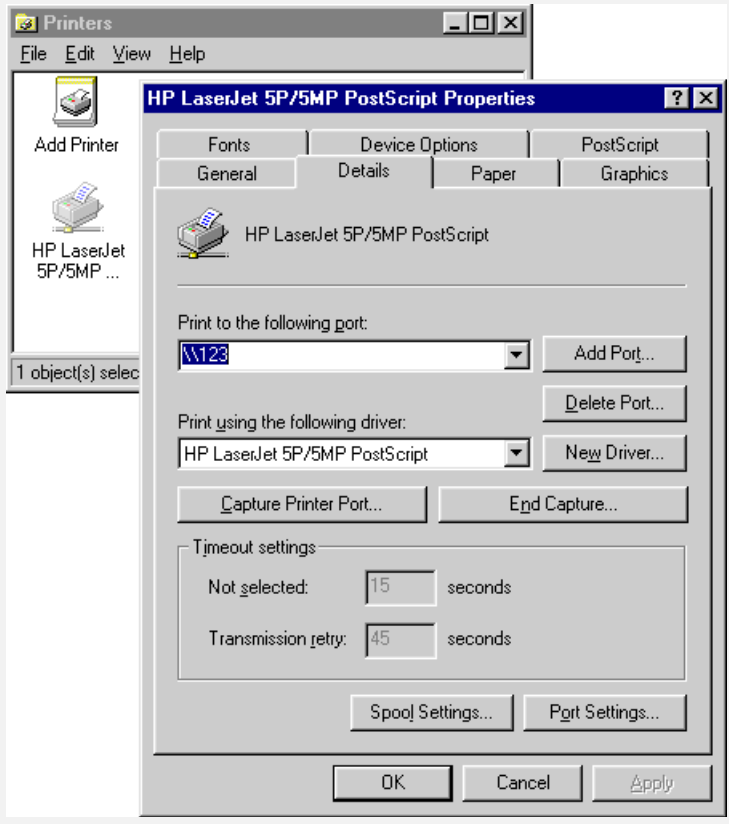
Problem No. 6	**I can't select the "Remaining from:" item in the print dialog box.**
Solution No. 6	If you have selected the Layout value, "2 Up", or "4 Up", you cannot access the *Remaining from* item. Choose other selections.
Problem No. 7	**A cover page prints either on the first or the last page of the document.**
Solution No. 7	Select one of these solutions: • Turn the cover page feature off. • Insert extra page breaks in your document to avoid the cover page printing on the first or last page of your document. • Install the Apple LaserWriter 7 driver. You are having trouble printing with the Apple LaserWriter 8 driver.
Problem No. 8	**Why do I have trouble printing with the LaserWriter 8?**
Solution No. 8	Your application software may not be compatible with the LaserWriter 8 driver or your system may not meet the requirements of the LaserWriter 8 driver. Use the Apple LaserWriter 7 driver instead.
Problem No. 9	**The colors on my printed output do not match the colors on my computer screen.**
Solution No. 9	When the printer receives a color file, it tries to match the printed output color to the screen color. Sometimes the printer cannot match up the colors as closely as wanted. To alleviate this problem, perform the following steps: • Choose "Calibrated Color/Grayscale" in the *Print* pop-up menu in the *Print Options* dialog box. The printer will make adjustments to match the colors. • Check your monitor to make sure all settings (for example, brightness) are adjusted correctly.
Problem No. 10	**When I send a print job, I get a PostScript Command error or no print out.**
Solution No. 10	Check the communication protocols. **The computer, Print Server and printer must all be configured to the same communication protocol**.(either Binary or ASCII). To configure your system: 1. Choose which protocol you are going to use. You should check your printer; it may not give you a choice. 2. Set your printer to the correct protocol. 3. Use the computer's *Print* submenu to configure your computer to use the protocol you have chosen. 4. Configure the Print Server to use the same protocol as the printer and computer.

Novell NetWare

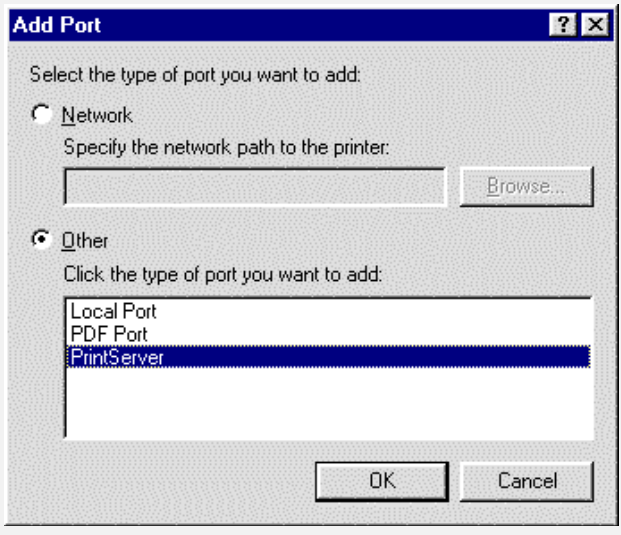
Problem No. 1	**My Print Server cannot print the jobs sent to the print queue.**
Solution No. 1	Try the following: 1. Check if the printer attached to the Print Server is on-line. 2. Check if your Print Server is logged into the file server (See Problem 2 below.). 3. Check the current status of the queues used by the Print Server, and ensure the queues are active. 4. Check if the NetWare printer number is correct. 0 = parallel port 1 of the Print Server. 1 = parallel port 2 of the Print Server. 2 = parallel port 3. 5. Check to see if the Print Server is a static queue server to the queue. Locate the Print Server Object, and check the *Queues Serviced by Printer*. Ensure that the correct queues are on the list. 6. The total number of queues to be serviced may be over the limit of 56. If so, reduce the number of queues.
Problem No. 2	**My Print Server is configured as a Novell Print Server, and cannot log in to a File Server.**
Solution No. 2	The following steps may solve this problem: 1. Check the Novell file server's name. If it is over 20 characters long, rename it using no more than 20 characters. 2. Check that the Print Server's configuration data, especially the password, is correct. 3. Check the NetWare server. If using Bindery mode, check the master file server to see if the login status of the Print Server is *Ready*. If it is not, check the error message and perform the required corrective action. 4. If the Print Server is servicing more than one file server, check to see that all required file servers are in the list of "File Servers To Be Serviced". If not, insert the required file server name to the list.

Windows Printing Problems

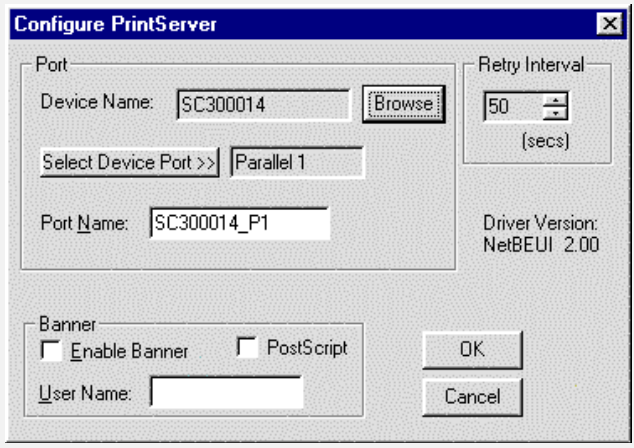
Problem No. 1	**When I tried to install the Printing software for Peer-to-Peer printing, I received an error message and the installation was aborted.**.
Solution No. 1	This may be caused by an existing installation of the printer port software. Before attempting another installation: • Remove the existing installation • Restart your PC **To remove an existing printer port installation**: 1. Open *Start - Settings - Control Panel - Add/Remove Programs* 2. Look for an entry with a name like "Shared Port", "Shared Printer Port", "Print Server Driver" or "Print Server Port". 3. Select this item, click "Add/Remove", and confirm the deletion.
Problem No. 2	**On Windows 95, I installed the Print Port Driver for Peer-to-Peer Printing, but when I selected a port on a Print Server and clicked "Add", the printer was not installed.**
Solution No. 2	Try installing the Printer using the standard Windows tools, as follows: 1. Start the *Add Printer* Wizard. 2. Select *Network Printer* when prompted "How is the printer attached to your Computer?", and click Next. 3. When prompted for the Network Path or Queue, enter a dummy value such as shown below. (Do NOT select *Yes* for "Do you print for MS-DOS programs?")  4. The printer wizard will display a message stating that "The Network Printer is off-line". This is OK. Continue the Add Printer Wizard until finished. 5. Go to the Printers folder (*Control Panel-Printers*). The printer icon will be grayed out indicating the printer is not ready. 6. Right-click the Printer, and select *Properties*. Then select the *Details* tab, as shown below.



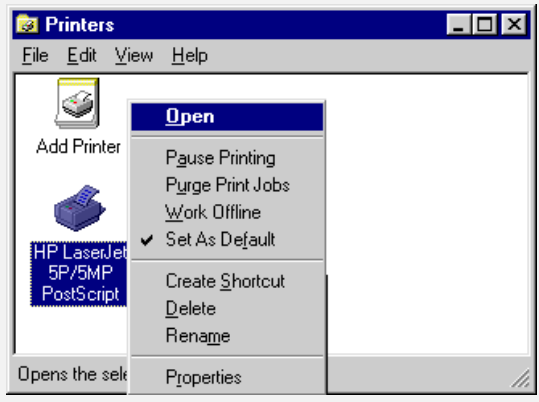
7. Click the *Add Port* button. On the resulting screen, select *Other*, then *Printer Server*, as the port to add, as shown below.



8. Click OK to see the *Print Port Configuration* screen, as shown below.



9. Click the *Browse Device* button, select the desired Print Server, and click OK.
10. Click OK to return to the Printers folders, and right-click on the Printer. Ensure that the *Work off-line* option is NOT checked.



The Printer should no longer be grayed out, and is ready for use.

Problem No. 3	**I connected and configured a WPS (Windows Printing System) printer as described, but I can't get the print job to print.**
Solution No. 3	Printer drivers for WPS printers poll the printer before sending print data. Since the printer is networked, the printer is not found and no data is sent. The solution is to add your printer as a network printer as described in Solution 1 above. **Note:** The screens shown in Solution 1 are from Windows 95. Other versions of Windows may look slightly different, but the process is identical. If using Window NT or 2000, do NOT enable Sharing for the printer.
Problem No. 4	**When printing from some software applications such as Power Point, it takes a long time and the print out is incorrect.**
Solution No. 4	The problem is due to the printer, which is being configured to **Start printing after the first page is spooled**. To change this setting: • Go to ***Control Panel - Printers*** and click on your printer. • Then select ***File - Properties - Details***. • When the Details screen appears, click the *Spool Settings* button. • When the Spool Settings dialogue box appears, choose *Start*

	printing after last page is spooled and click OK.
Problem No. 5	**A printing device connected to the Print Server port cannot print or prints garbage.**
Solution No. 5	Check the following: • Cable connection between Print Server and printer. • Printer driver in the application program or Windows matches the printer.
Problem No. 6	**The *Configuration* button on the *Printer Status* screen in BiAdmin is grayed out, even though my printer is bi-directional.**
Solution No. 6	The button is unavailable if the printer is busy. You must wait until the printer is idle.
Problem No. 7	**When I send a print job, cannot print or prints garbage.**
Solution No. 7	The problem may be due to the printer, if the printer you used is an old model with low speed, the following steps may solve this problem: Try the following: • Open the BiAdmin Utility. • Click the *Printer Status* icon. • Change the Printer Type setting to *Low Speed* or set the Handshake Signal setting to *Ack & Busy*.

Appendix A
Specifications

General Specifications

PS5100 Print Server	
External Power Adapter	12V DC
LEDs	3
Parallel Port	1 Centronic female DB-25 connector
Ethernet Connector	10/100BaseT
FCC / CE	Class B
PS5300 Print Server	
External Power Adapter	12V DC
LEDs	3
Parallel Port	Three Centronic female DB-25 connectors
Ethernet Connector	10/100BaseT
FCC / CE	Class B
AS5100 Print Server	
External Power Adapter	9V DC
LEDs	4
Parallel Port	1 Male DB-36 connector
Ethernet Connector	10/100BaseT
FCC / CE	Class B
AS560H Print Server	
External Power Adapter	9V DC
LEDs	4
Parallel Port	1 Male DB-36 connector
Ethernet Connector	10/100BaseT
FCC / CE	Class B
PS5120 Print Server	
External Power Adapter	12V DC
LEDs	3
Parallel Port	1 Centronic female DB-25 connector
USB Port (1.1)	2

Ethernet Connectors	10/100BaseT
FCC / CE	Class B
PS5010 Print Server	
External Power Adapter	9V DC
LEDs	2
USB Port (1.1)	1
Ethernet Connectors	10/100BaseT
FCC / CE	Class B

Environmental Specifications (all Models)	
Operating Temperature	0 ~ 40°C
Storage Temperature	-10 ~ 70°C
Shipping Temperature	-40 ~ 70°C
Operating Humidity	10 ~ 80%
Storage Humidity	5 ~ 90%
Shipping Humidity	5 ~ 100%

Parallel Port Pin Assignments

Direct Attach Models		
Pin	**Signal Name**	**Source**
1	-Strobe	H
2	+Data 1	Bi-Di*
3	+Data 2	Bi-Di*
4	+Data 3	Bi-Di*
5	+Data 4	Bi-Di*
6	+Data 5	Bi-Di*
7	+Data 6	Bi-Di*
8	+Data 7	Bi-Di*
9	+Data 8	Bi-Di*
10	- ACK	P
11	+ Busy	P
12	+ Paper Error	P
13	+ Select	P
14	-Auto Feed	H
15	Not Defined	
16	Logic GND	
17	Chassis GND	
18	Peripheral Logic High	P
19-30	GND	
31	-Init	H
32	-Fault	P
33-35	Not Defined	
36	-SelectIn	H

* Data signals will be driven by some but not all peripheral devices.

Other Models		
Pin	**Signal Name**	**Direction**
1	- Strobe	To printer
2	+Data 0	To printer
3	+Data 1	To printer
4	+Data 2	To printer
5	+Data 3	To printer
6	+Data 4	To printer
7	+Data 5	To printer
8	+Data 6	To printer
9	+Data 7	To printer
10	- ACK	To Server
11	+ Busy	To Server
12	+ Paper End	To Server
13	+ Select	To Server
14	- Auto Feed	To printer
15	- Error	To Server
16	- Init	To printer
17	- Select In	To printer
18-25	GND	Ground

Protocol Support

Model	TCP/IP	NetBeui	Netware IPX/SPX	AppleTalk
PS5100	√	√	√	√
PS5300	√	√	√	√
AS5100	√	√	√	√
AS560H	√	√	√	√
PS5120	√	√		√
PS5010	√	√		√

Feature Support

Model	HTTP Setup	E-mail Printing	IPP Support	SNMP Support	AutoIP	FTP/Telnet Support
PS5100	√	√		√		√
PS5300	√	√		√		√
AS5100	√	√	√	√	√	
AS560H	√	√	√	√		√
PS5120	√	√	√	√	√	
PS5010	√	√	√		√	

Regulatory Approvals

PS5100, PS5300, AS5100, AS560H, PS5120, PS5010

FCC Statement

This equipment generates, uses, and can radiate radio frequency energy. It 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 domestic environment.

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.

CE Marking Warning

This is a Class B product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Appendix B
Network Server Configuration

B

Windows NT Server

Preparing for TCP/IP Printing

If using Windows NT 3.51 or Windows NT 4.0, Microsoft *TCP/IP Printing Support* must be installed.

- If it is already installed, proceed to ***Adding a TCP/IP Remote Printer***.
- Otherwise, the procedure to install TCP/IP printing support is as follows.

Windows NT 3.51

1. Start the *Network* option in Control Panel. When the Network Settings dialog box appears, click the *Add Software* button to display the *Add Network Software* dialog box.
2. Select *TCP/IP Protocol And Related Components* in the Network Software list box, and then click the *Continue* button.
3. In the *Windows NT TCP/IP Installation Options* dialog box, check the *TCP/IP Network Printing Support* option.
4. Click the *OK* button. Windows NT Setup will display a message asking for the full path to the Windows NT distribution files. Provide the appropriate location and click the *Continue* button. All necessary files will be copied to your hard disk.
5. If you did not check the *Enable Automatic DHCP Configuration* option in the *Windows NT TCP/IP Installation Options* dialog box, you must complete all the required TCP/IP configuration procedures manually.
6. After you finish configuring TCP/IP, the *Network Settings* dialog box will reappear, click the *Close* button and then restart your computer for the changes to take effect.

Windows NT 4.0

1. Go to *Start-Settings-Control Panel-Network*.
2. Click the *Service* option and ensure that **Microsoft TCP/IP Printing** is enabled. If it is not enabled, select the *Add* option and enable it as usual.
3. If you added services in step 2, reboot the computer for the changes to take affect.

Adding a TCP/IP Remote Printer

Windows 3.51

1. From the *Printer* menu in **Print Manager**, select *Create Printer*.
2. In the resulting dialog box, enter data as follows:

Printer Name	Enter a name (up to 32 characters). This name appears in the title bar of the printer window.
Driver	Select the appropriate driver for the attached printer.
Description	Enter a printer description for other network users to reference.
Print To	Select *Other*.

3. A *Print Destinations* dialog box will appear after selecting *Other*. In the *Available Print Monitor* list, select *LPR Port*, then *OK*.
4. An *Add LPR compatible printer* window will appear. Enter data in the fields as follows:

Name Or Address Of Host Providing LPD	Enter the IP address of the Print Server.
Name Of Printer On That Machine	Enter the appropriate logical printer number. (e.g. L1)

5. When the *Create Printer* dialog box reappears, check the *Share This Printer On The Network* option.
6. The resource name shown in the *Share Name* box can be changed if you wish. In the *Location* box, you can enter information concerning the printer location. Network users will see this information when browsing to find this printer.
7. Complete any other configuration information in the *Create Printer* dialog box, save and exit.

Client PCs can now be configured as described in *Chapter 4 - Client Configuration*.

Windows NT 4.0

1. Go to Start-Settings-Printer and invoke the Add Printer wizard.
2. When prompted with This printer will be managed by, select **My Computer** and click Next.
3. Select **Add Port…**, then select **LPR Port** and click **New Port**.
4. In the *Name of Address of server providing lpd*: Dialog box, enter the Print Server's IP address.
5. In the Name of printer or print queue on that server dialog box, enter the appropriate logical printer number (L1..L3, or L1..L8, depending on the model) as previously configured on the Print Server.
6. Click OK. When returned to the Printer Ports window, simply select *Close* and then install your printer driver as usual.
7. When prompted whether or not the printer will be shared, select the **Sharing** radio button.
8. In the *Shared* dialog box, enter the shared printer name. (The shared name is how other users will see this printer.) Click OK to save and exit.

Client PCs can now be configured as described in *Chapter 4 - Client Configuration*.

Windows 2000 Server

1. Start the *Add Printer* Wizard, select *Network Printer*, then click *Next* to browse for the Print Server.
2. Locate and double-click the Print Server, select the desired port, and click *Next*.

   The following message will be displayed:

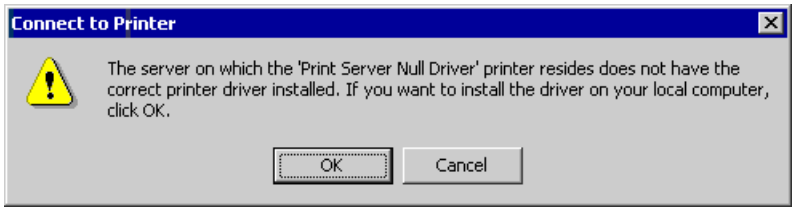


Figure 29: Windows 2000 Message

3. Click "OK", and select the correct Manufacturer and Model for this printer.
4. Follow the prompts to complete the installation.
5. In the *Printers* folder, right-click the new printer, and select *Sharing*.
   - Select "Shared As:" and enter an appropriate name for this printer. Users will see this name when browsing for the printer during installation.
   - If desired, click "Additional Drivers" and install printer drivers for other versions of Windows, such as Windows 98. This will assist users during the installation process.
6. Click OK to close this Window. Configuration is now complete.

Client PCs can now be configured as described in *Chapter 4 - Client Configuration*.

Novell NetWare

The Print Server fully supports both Bindery and NDS Novell systems.

With either Bindery or NDS, two (2) NetWare operating modes are possible -*Print Server* and *Remote Printer*. *Print Server* mode is recommended.

Novell Distributed Printing Services (NDPS) under NetWare 5 is also supported.

Configuration Methods (Bindery or NDS)

The following configuration methods are available. In each case, you must be logged into the required NetWare Server with ADMIN rights.

Also, if using Windows, Novell's **Client32** should be installed on your PC. Without Client32, only limited configuration changes can be made on the NetWare Server.

Setup Wizard

Using the Setup Wizard is recommended. This allows configuration of the Print Server in **NetWare Print Server Mode**, which is the recommended system.

BiAdmin

For more control and flexibility, or to use **NetWare Remote Printer Mode**, you can use the supplied BiAdmin management utility. Provided you have Novell's *Client 32* installed, BiAdmin will allow you to configure the NetWare Server as well as the Print Server.

- BiAdmin is installed by the ***Administrator*** menu option on the CD-ROM.
- See Chapter 5 for general information on using BiAdmin.
- The **NetWare Manual** (in the Manual\NetWare folder on the CD-ROM) contains detailed information on using BiAdmin with NetWare Servers.

Other Method

If you are unable to use Windows-based programs for configuration, the following method is available to configure the Print Server:

Quickset	Command-line DOC program, intended only to configure the Print Server for use with NetWare V2, 3 and 4. This program also has a limited ability to configure the NetWare Server itself.

- The program is provided on the CD-ROM, in the ***Utility*** folder.
- The documentation for the program is provided in sub-folders of the ***Manual*** folder on the CD-ROM.

Configuration Data

The Print Server requires the following "General" data, and the data for the mode (*Print Server* or *Remote Printer*) you are using.

General	
Device Name	The device name (Default Server Name) is shown on a sticker on the base of the device. Change this if you wish. The new name MUST NOT exceed 19 characters, nor contain any spaces.
Device Password	Default is NULL (no password).
NetWare Mode	*Print Server* or *Remote Printer*.
Frame Type	Select the frame types used by your network. (Ethernet 802.2, Ethernet 802.3, Ethernet SNAP, and Ethernet II) By default, all frame types are enabled.
Novell Remote Printer Mode	
Novell Printer Server for P1	NetWare print server to service the Print Server's parallel port 1.
Novell Printer Server for P2, P3 (if exist)	NetWare print server to service the Print Server's parallel port 2 (P2), parallel port 3 (P3), if these port exist.
Novell Print Server Mode	
NDS Tree Name	Not applicable. (NetWare NDS mode only)
Print Server NDS Context	Not applicable. (NetWare NDS mode only)

Master File Server (Bindery mode only)	Name of the Print Server's master file server.
Polling Queue Interval	Defines how often the Print Server will poll the queues to be serviced.
Job Notification by Connection ID	Set to Y*es* to receive a job notification at only the workstation where the print job originated, *No* to receive a job notification at all workstations that you have logged on.
NetWare Password	The password on the NetWare Server. The Print Server device needs this password to connect to the NetWare Server.

Setup for NDPS (NetWare 5)

Overview

- The Print Server must be configured as a valid device on your TCP/IP network.
- To use NDPS (Novell Distributed Printing Services), the Novell server must be running Novell NetWare 5, and the PCs (clients) must be running IntranetWare Client V2.2. or later.

The following procedure is designed to enable ***Public Access Printing*** under NDPS. *Public Access Printing* allows anybody on the network to access the printer.

Creating an NDPS Manager Object

If an NDPS Manager Object already exists, skip this procedure and proceed to *Creating an NDPS Printer Agent*.

1. Login to NetWare 5.0 Server as Admin and start the NetWare Administrator program Nwadmn32.exe.
2. Select the container on NetWare Administrator where you want the NDPS Manager object to reside. (e.g. TeSupp)
3. Select *Create* - *Object* from the menu bar to view the *New Object* dialog.
4. Select *NDPS Manager* as the object to create. The *Create NDPS Manager Object* window shown below will appear.

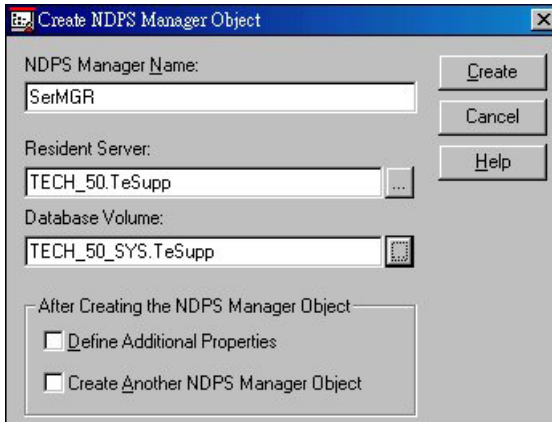


Figure 30: Create NDPS Manager Object

5. Type a name in the NDPS Manager Name.(e.g. SerMGR in Figure 1 above)

6. Browse the Resident Server and select where you want the NDPS Manager object to be assigned. (e.g. TECH_50.TeSupp in figure 1 above)
7. Browse the Database Volume and select where you want the NDPS Manager database to be assigned. (e.g. TECH_50_SYS.TeSupp in figure 1 above)
8. Click ***Create***. The new NDPS Manager will appear in the main browser window.
   - To start the NDPS Manager in future, enter the following command at the console:
     `LOAD NDPSM`
     then select the NDPS Manager object.
   - To start the NDPS Manager whenever you bring up the server, add a command like the following to your server's AUTOEXEC.NCF file:
     `LOAD NDPSM SerMGR.TeSupp`
     The last item is the name of the NDPS Manager object you wish to load.
9. After creating an NDPS Manager, you can create NDPS printers by using NetWare Administrator, as explained below.

Creating an NDPS Printer Agent

To create Public Access Printers using the NDPS Manager Object in NetWare Administrator, follow this procedure:

1. Start the NDPS Manager object you will be using to control the Printer Agent.
2. At the *Identification* page, click the *Printer Agent List.*
3. Click *New* to see the *Create Printer Agent* window, as shown below.

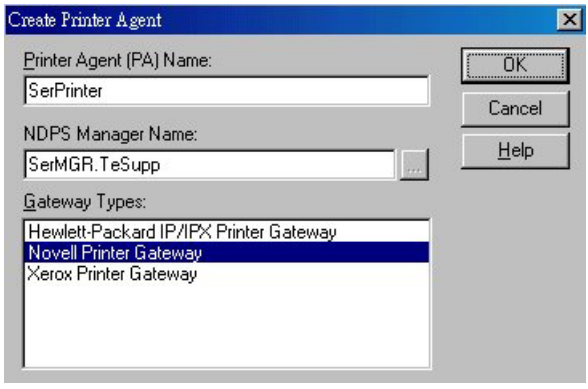


Figure 31: Create Printer Agent

4. Enter the desired name for the *Printer Agent (PA) Name.*
5. Normally, the *NDPS Manager* will be the NDPS Manger object you are using.
6. Select *Novell Printer Gateway* in the *Gateway Type.* (see figure2 above)
7. Click *OK* and then select the available printer.
8. Select *Remote (LPR on IP)* in the *Connection Type*.
9. Click *Next* to see the following *Configure Port Handler* screen.

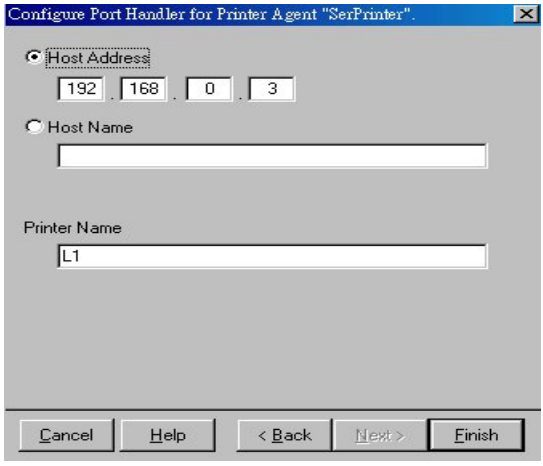


Figure 32 Configure Port Handler

10. In the *Host address IP* field, enter the IP Address previously assigned to the Print Server device.
11. In the *Printer Name* field, enter the Logical Port name on the Print Server. (e.g.: L1)

    Note: For Print Servers with one parallel port, the logical ports are named L1, L2 and L3. For devices with three parallel ports, the logical ports are named L1 to L8.
12. Click *Finish*, then select appropriate drivers for Windows 3.1, Windows 95/98 etc as required.
13. The new Printer Agent will now appear in the Printer Agent List window.

Repeat this procedure for any other ports on the Print Server, or for any other logical printers you wish to use.

Client PCs can now be configured as described in *Chapter 4 - Client Configuration*.

Unix Systems

Your Print Server can be configured using FTP, and it supports the following Unix printing methods:

- LPD
- FTP
- Direct Socket Interface

For full details on using Unix systems with your Print Server, refer to the ***Unix*** manual in the /Manual/Unix directory on the CD-ROM.

PS5010 and PS5120 do not support FTP or Direct Socket Interface printing.