Print Server

User’s Manual

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Revision

User's Manual for PLANET Print Server

Model: FPS-5P-S, FPS-5P-M, FPS-1U, FPS-2PUW

Rev: 1.0 (Jul. 2003)

Part No. EM-PSV6

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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. This device was designed to provide a simple and efficient network printing solution. It is packed with features, including:

- ***Versatility.*** The Print Server supports many protocols: TCP/IP, SMB (Service Message Block), Apple EtherTalk, NetBEUI and NetWare (depend on different model). 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. Depending on your model, it will support 10 Base-T, 100 Base-TX or IEEE802.11b. The auto-sensing feature on the connect 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/Server 2003 users, the Bi-Admin 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.
- ***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.*** The Print Servers can act as 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.

See 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, drivers and this manual
- Quick Install Guide

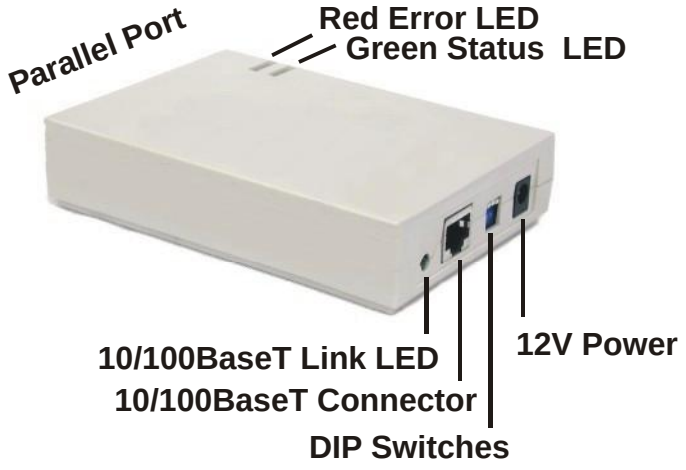
Models

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*.

FPS-5P-S Fast Print Server

4 1 Parallel Port

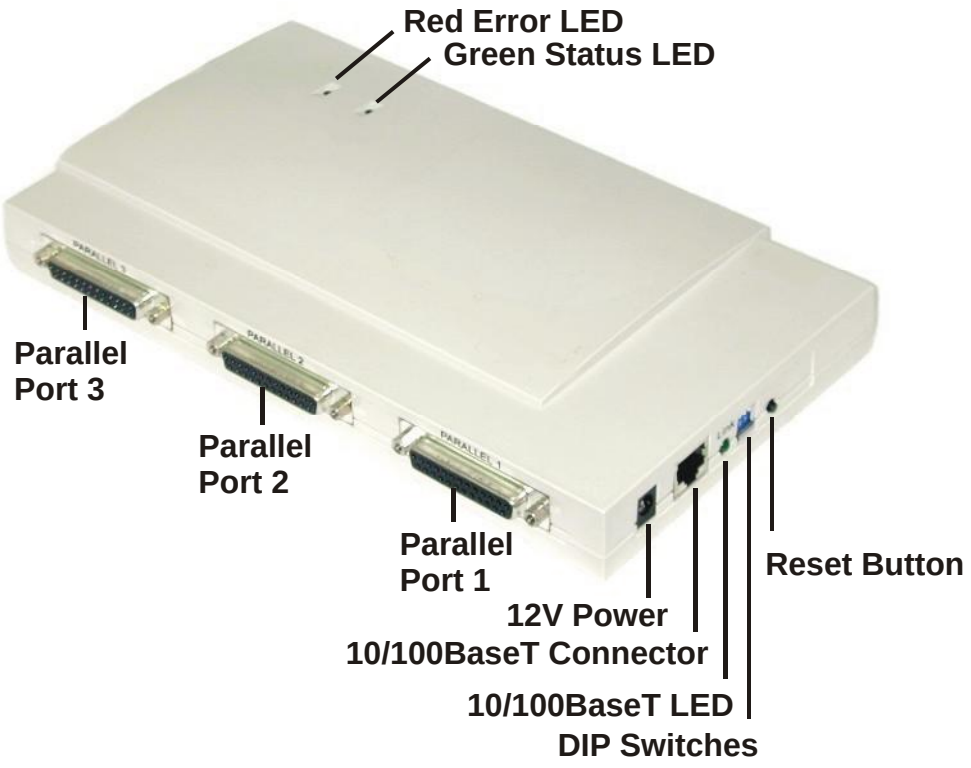
4 10/100Base-TX



FPS-5P-M Fast Print Server

4 3 Parallel Ports

4 10/100Base-TX



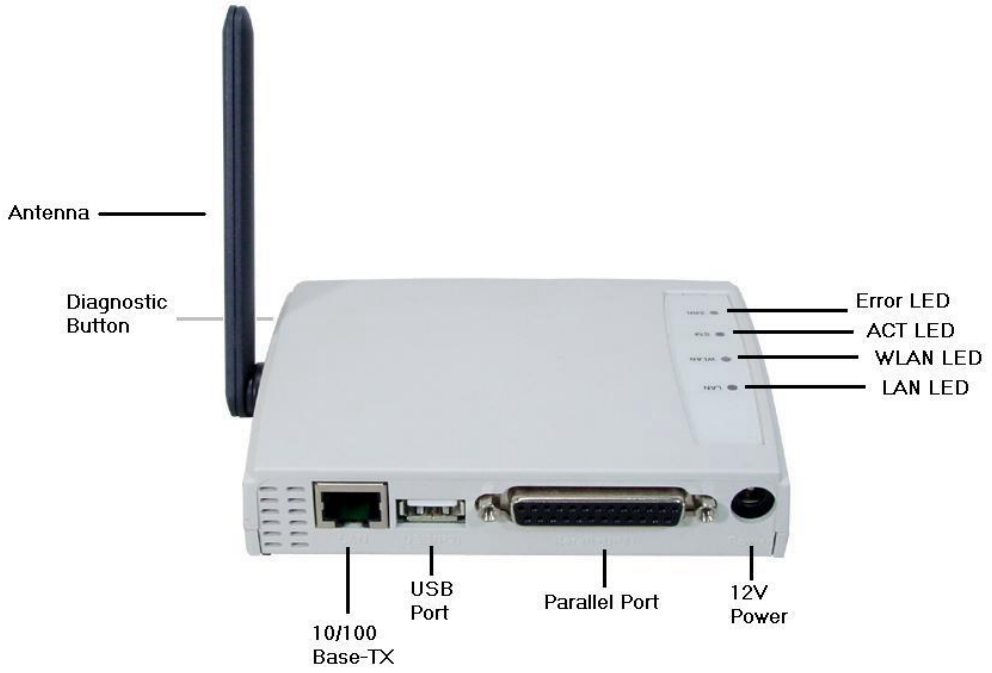
FPS-2PUW Print Server

4 1 USB Printer Port

4 1 Parallel Printer Port

4 IEEE 802.11b Wireless Station

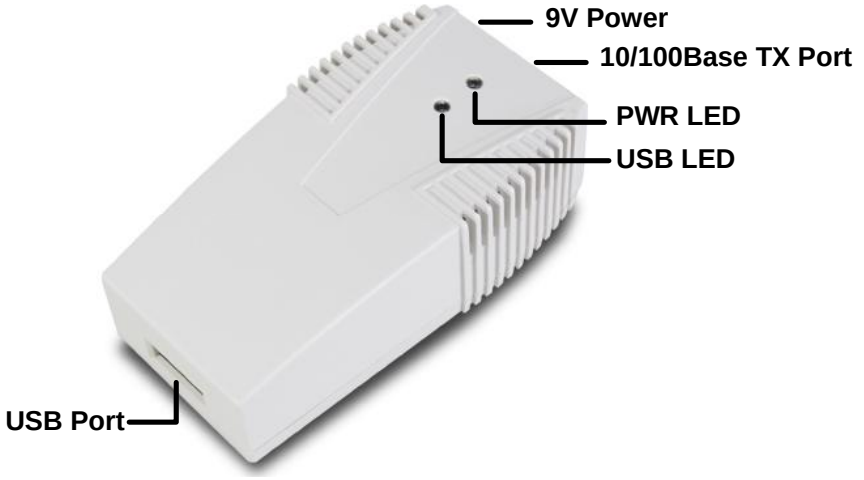
4 10/100Base-TX



FPS-1U Print Server

4 1 USB Printer Port

4 10/100Base-TX



LED Indicators

FPS-5P-x has two LED indicators on the top. The Status/Error LED is orange or red. The Power/Link 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	Off	Normal operation - idle.
Flashing	Off	Normal operation - transmitting or receiving packets from the network.

LEDs - FPS-2PUW

FPS-2PUW has 4 additional LED indicators as follows:

ACT LED (Green)	ERR LED (Red)	Status Description
Off	Off	No power.
On	Off	Normal operation - Idle.
Flashing	Off	Normal operation - transmitting or receiving packets from the network.
On	On	Hardware error.
Flashing	Flashing	Firmware upgrade in progress.

LED	Description
WLAN ACT	**Off** - No Wireless connection available. **On** - Wireless connection available. **Flashing** - Transmitting or receiving data through the Wireless LAN.
LAN ACT	**Off** - No LAN connection **On** - LAN connection available. **Flashing** - Transmitting or receiving data through the LAN.

LEDs - FPS-1U

FPS-1U has 2 additional LED indicators as follows:

LED	Description
PWR	**Off** - Printserver is not power on **Flashing -** Printserver is working

USB	**Off –** Printer is working fine **Flashing -** No printer connected to the USB port

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.

Print Servers (FPS-5P-M, FPS-5P-S)

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

Diagnostic Push Button

Print Server FPS-2PUW is 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

Before use

- Make sure the printer you used is not a GDI (**G**raphical **D**evice **I**nterface) printer. Printserver is not support GDI interface. If connect the printer to Print Server, it will work incorrectly. You can refer to the word file in GDI Printer folder of the CD-ROM, there have list some printers that designed with GDI interface. We are afraid the printer is a new one that is not included in this word file. So please check to the printer manufacturer for make sure the printer working interface.

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 as SCxxxxxx. This name also represents its MAC address. For example, SC123456 shows its MAC address as 00-c0-02-12-34-56. 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:

- **USB Port** - Use the USB cable supplied with your printer to connect the printer to the Print Server's USB port
- **Parallel Port** - Use standard Parallel port cables 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.

On the FPS-2PUW, connecting the LAN cable will disable the Wireless interface, because the default "Infrastructure mode" wireless setting can NOT be used with the LAN interface.

To use both the LAN and Wireless interfaces, the Wireless mode must be set to "Ad-hoc".

After configuration, the LAN interface can be disconnected if not required.

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

For FPS-5P-x

- 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.
- If your model supports 10Base-T and 100Base-TX, check the 10/100Base-TX 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.

For FPS-2PUW

- After plug power adapter to Print Server, PWR LED will light on.
- If Print Server has connected to a hub or switch and power on, LAN LED will blink. If the auto-negotiation fails, the LED will be off.
- If Print Server is working with Wireless interface, WLAN LED will be blink.
- When the Print Server is sending data to your printer, the ACT LED will blink.

For FPS-1U

- After plug power adapter to Print Server, PWR LED will light on.
- If Print Server has connected to hub or switch, PWR LED will start blink. If the auto-negotiation fails, the LED will keep light on.
- After Print Server connected to LAN. If you don't connect printer to Print Server yet, USB LED will be flashing.

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.

- When you first time install your Print Server to your LAN. We will suggest you install utility “Bi-Admin” to configure your PrintServer in Windows. It can provide an advance and complete configuration for your Print Server. See Chapter 5 for details on using Bi-Admin.
- If you have installed NetBEUI protocol in your network, you don’t need to configure the Print Server. You can install Peer-To-Peer driver to let your PC attach to the PrintServer to print, through NetBEUI protocol.
- 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):
  - For configuration and management, the Bi-Admin program (detailed in *Chapter 5 – Bi-Admin 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/2000/XP/Server 2003**, 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 by installing the *Peer-to-peer Print Driver* in Driver/PTP20 folder on the CD-ROM.
- ***AppleTalk*** is also supported, and normally no configuration of the Print Server is required. See the Macintosh section of Chapter 4 for details of client configuration.

Other configure method for Print Server

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 FPS Series. 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. **Note**: FPS-1U do not support FTP to download the configuration file.

WPConfig This program requires Windows 3.1, and the IPX/SPX protocol.

This program is on the CD-ROM, in the Utility\WPConfig folder. Instructions for using the program are in a sub-folder of the Manual folder on the CD-ROM.

PSConfig Menu-based DOS program, intended only to configure the Print Server for use with NetWare V2, 3 and 4.

This program is on the CD-ROM, in the Utility\DOS folder. Instructions for using the program are in a sub-folder of the Manual folder on the CD-ROM.

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 Utility\DOS folder. Instructions for using the program are in a sub-folder of the Manual folder on the CD-ROM.

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 following conditions must be met:

- Print Server must be installed on your network.
- Print Server must be configured (refer to Chapter 3).
- Both the Print Server and the attached printer must be powered ON.
- If the client PC uses a Wireless connection to communicate with the Print Server, the PC's wireless settings must be correct, as described below.

Wireless Settings for client PCs

The FPW-2PUW incorporate Wireless Stations for IEEE 802.11b devices. This section is only relevant to users of the FPW-2PUW.

To print to the FPW-2PUW, Wireless stations must ensure that the following Wireless Settings are correct.

	Ad-hoc Mode	**Infrastructure Mode**
SSID	Must match the other Wireless stations, unless the SSID is **null** or "any". If its SSID is **null** or "any", a Wireless station can join any Ad-hoc group.	Must match the Access Point.
Channel	Should match the other Wireless stations. However, when joining an existing ad-hoc group, a Wireless station must use the Channel in use, rather than its own Channel.	Access Point sets the Channel used. Wireless stations automatically locate the correct channel.
WEP Settings	Must match the other Wireless stations.	Must match the Access Point.

To change these settings on your PC, use the software provided with your Wireless card.

If your PC's wireless settings are not correct, you will not be able to print to the FPS-2PUW via a Wireless connection.

Printing Methods

The Print Server supports a number of printing methods:

- ***Peer-To-Peer Print Driver*** is installed by running setup.exe in the CD-ROM Driver/PTP20 folder. 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/XP/Server 2003) 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 cannot 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, Me, NT, 2000, XP or Server 2003, the easiest method is to install the *Peer-To-Peer Print Driver* on the CD-ROM.
- 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, Windows XP, Windows Serer 2003 and 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.

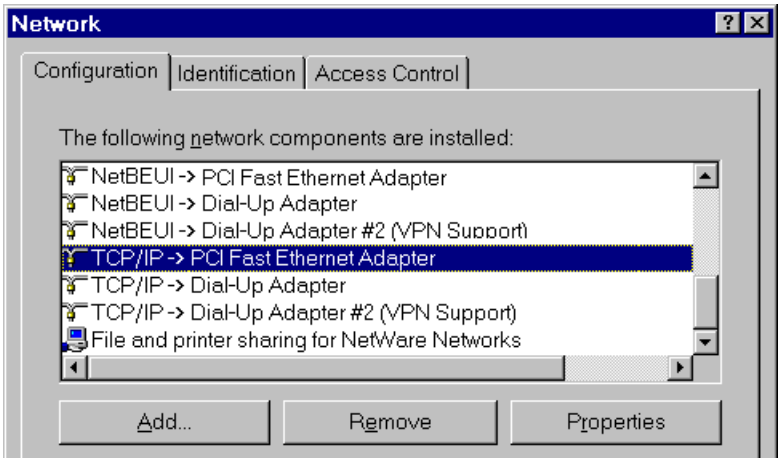
Checking your Network Protocols (Windows)

Your PC must have EITHER the TCP/IP or NetBEUI protocols installed.

- 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 described below.

(This is for Windows 95 only. All later versions of Windows have TCP/IP installed by default.)

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

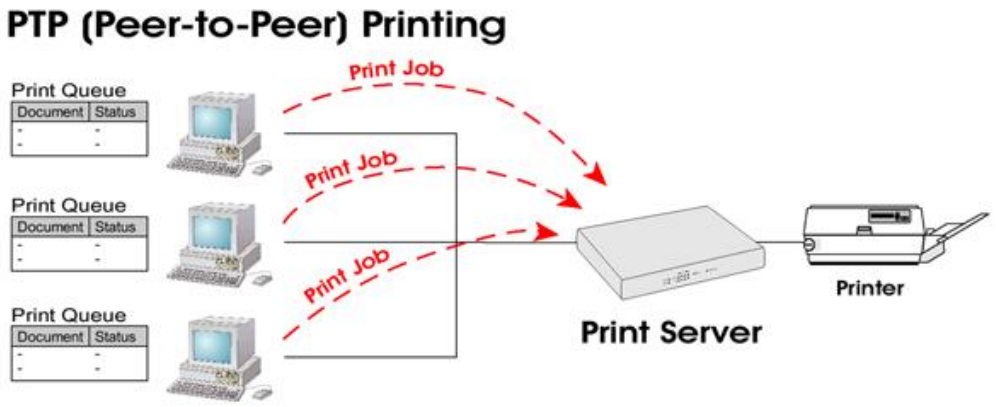


- The top line in the list (NetBEUI -> PCI Fast Ethernet Adapter) indicates that the NetBEUI protocol is installed on this PC. Your PC will show the name of the your Network card rather than "PCI Fast Ethernet Adapter".
- The highlighted line (TCP/IP -> PCI Fast Ethernet Adapter) indicates that TCP/IP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



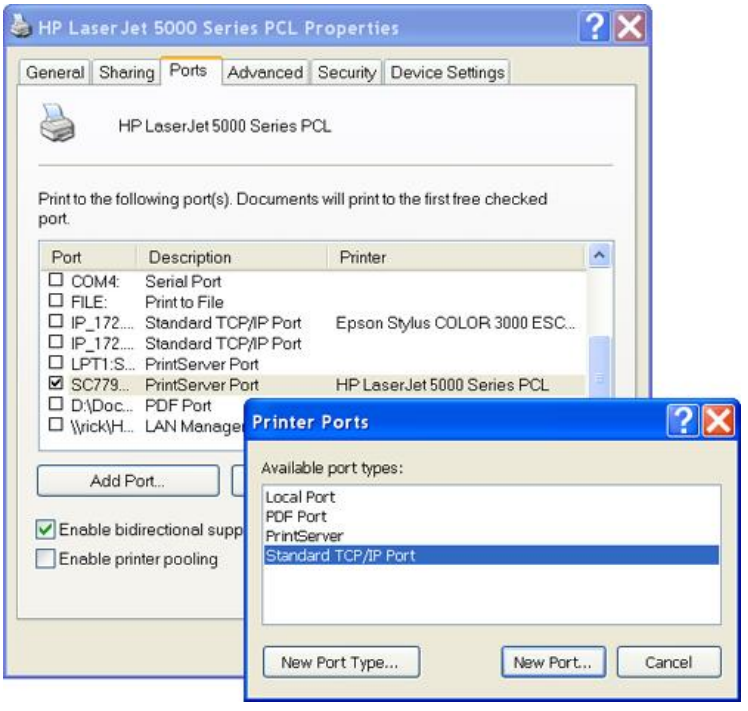
Windows 2000/XP and Server 2003 require no additional software.

For other versions of Windows, the supplied PTP (Peer-To-Peer) Printer Port software must be installed on each PC.

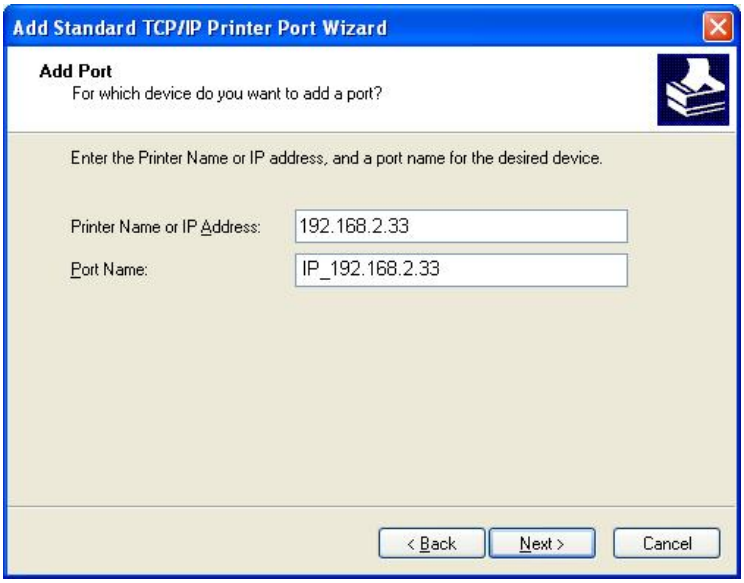
Windows 2000/XP/Server 2003 Setup

The recommended printing method is to use LPR, as following steps. If you don't want to use the LPR printings, you can install the PTP driver or use SMB printing to work in those Windows system.

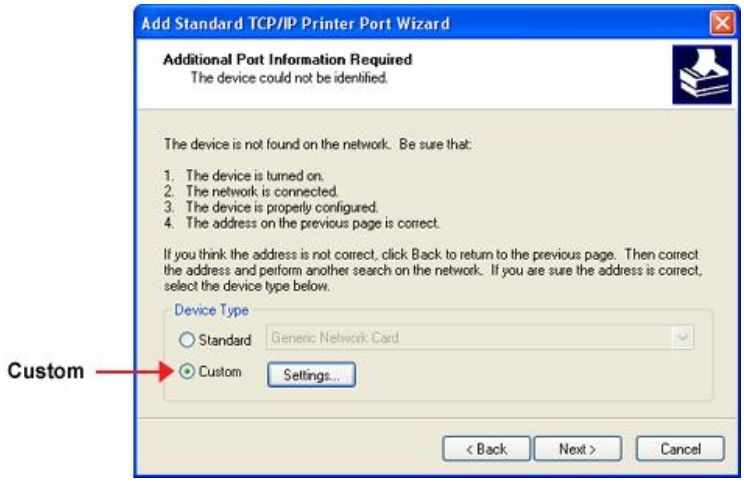
4. Open your *Printers* folder, right-click the desired printer and select *Properties*.
5. Select the *Ports* tab and click the *Add Port* button.



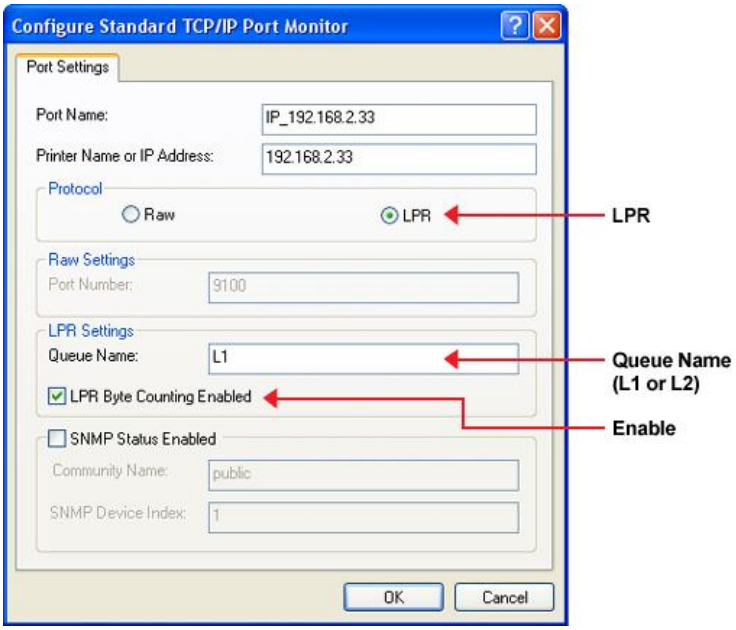
6. Choose Standard *TCP/IP Port*, and then click *New Port*.



7. On the *Add Standard TCP/IP Printer Port* screen above, enter the *IP Address* of the Print Server in the *Printer Name or IP Address* field, then click *Next*.



8. On this screen, select *Custom*, and click the *Settings* button.



9. On the *Port Settings* screen, shown above:
   - Select *LPR* in the *Protocol* section
   - Enter a *Queue name* (L1 for Port 1, L2 for Port 2 if the Wireless Print Server has 2 printer ports)
   - Ensure the *LPR Byte Counting Enabled* setting is **Enabled**.
   - Click OK to confirm your changes and close this screen.

10. Follow the prompts to complete the Wizard.

Windows 9x/ME 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.

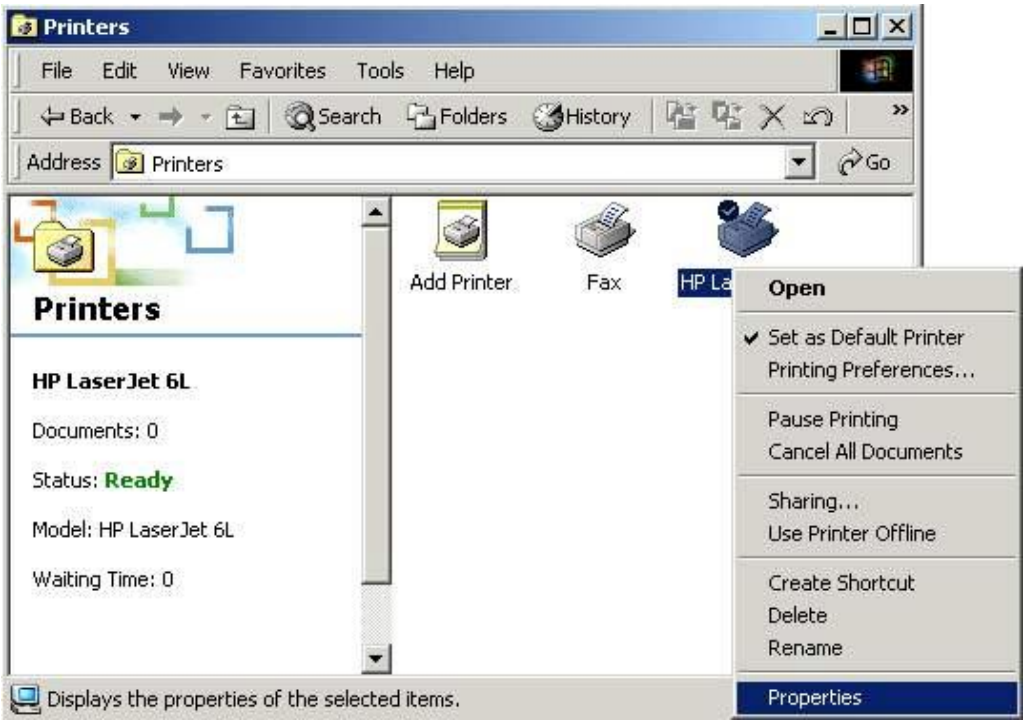
1. Insert the supplied CD-ROM into your drive. If the setup program does not start, run Driver/PTP20/SETUP.exe of the CD-ROM.
2. Follow the prompts to complete the installation of the Peer-To-Peer Printer Port Driver. (Refer to the *Windows* section of *Chapter 8 - Troubleshooting* if there is a problem with the installation.)
3. The *Print Driver Setup* will then run.

In future, you can use *Start -> Programs -> PrintServer Driver -> Printer Port Setup* to run the program again.

Configure the Printer port

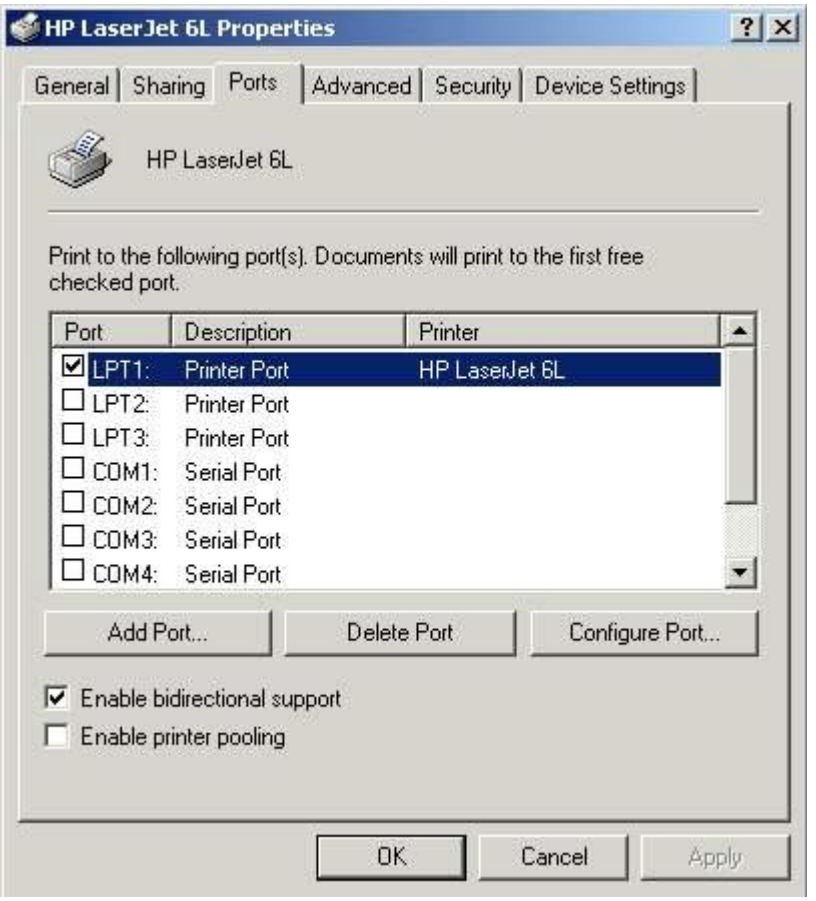
After installing the Peer-to-Peer Print Driver, install the Windows printer driver for each printer(s) attached to the PrintServer.

1. Click on **Start** -> **Settings -> Printers**.
2. If no printers are installed, install the printer driver(s) per the directions from the printer's manufacturer, as if the printer is a "local" printer attached directly to the PC.
3. After the printer driver has been installed, click on **Start -> Settings -> Printers**. Locate the printer you want to attach to the PrintServer, which appears as an icon in the **Printers** folder, and right-click on it.
4. Click on **Properties**.

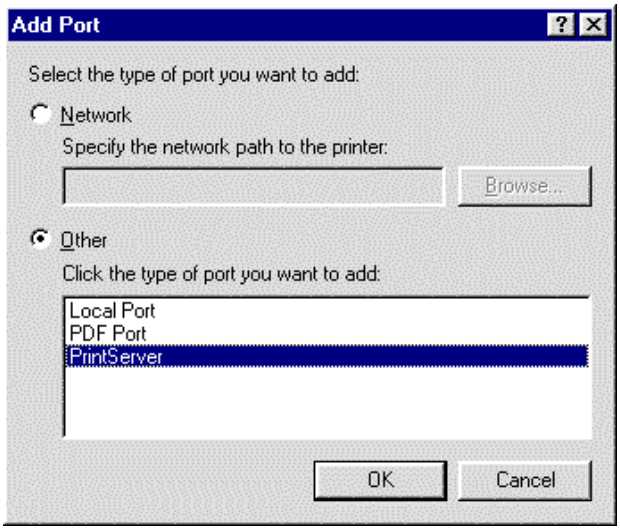


5. When the **Properties** window appears,

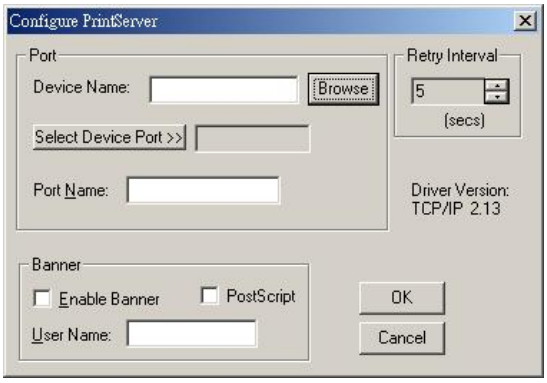
- For Windows 95, 98 and Me, choose the **Details** tab. Click on the **Add Port** button.
- For Windows NT, 2000, XP and Server 2003, click on **Ports** and then **Add Port**.



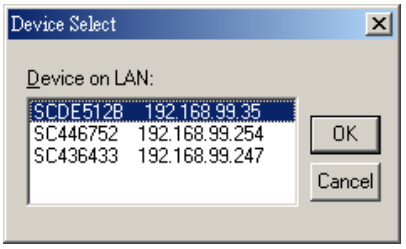
6. When the **Add Port** window appears,
   - For Windows 95, 98 and Me, select *Other* and then *PrintServer* under the listed ports to add. Click OK.
   - For Windows NT, 2000, XP and Server 2003, select *PrintServer* and click on **New Port.**



7. The **Configure PrintServer** window appears, shown below.

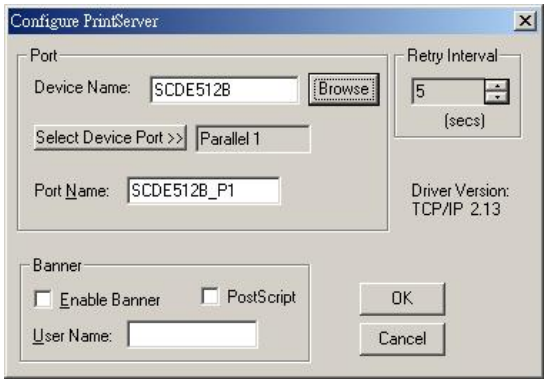


8. Click on **Browse** and choose from the list that appears.

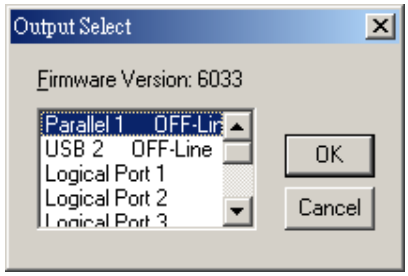


It may take a few seconds for the list to appear. If you have multiple PrintServers on your network, be sure to pick the correct name and click **OK**.

9. Click on the **Select Device Port** button.



10. If you are using PrintServer with more than one port, choose the PrintServer port connected to the newly installed printer.



11. In the **Configure PrintServer** window, set the **Retry interval**, which determines how many seconds, Windows waits before attempting to send a print job again if the PrintServer was busy.
12. If you want each print job to be identified with the user's name, enable the banner. If you need postscript printing for the banner, select the *PostScript* option. Be sure to enter the workgroup or username you want to appear on the banner.
13. When you finish, click **OK**. When the **Printer Properties** window reappears, click **Apply**, then select the **General** tab. Click on **Print Test Page**. If the page prints, click **OK** in the **Properties** window and close all opened windows. Your PrintServer installation is now complete, and you can print as you do normally.

Note: For Multiple Port PrintServer, you must add a port each time you add a printer to your PrintServer and each time you add an additional PrintServer to your network

Manage the Printing

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.

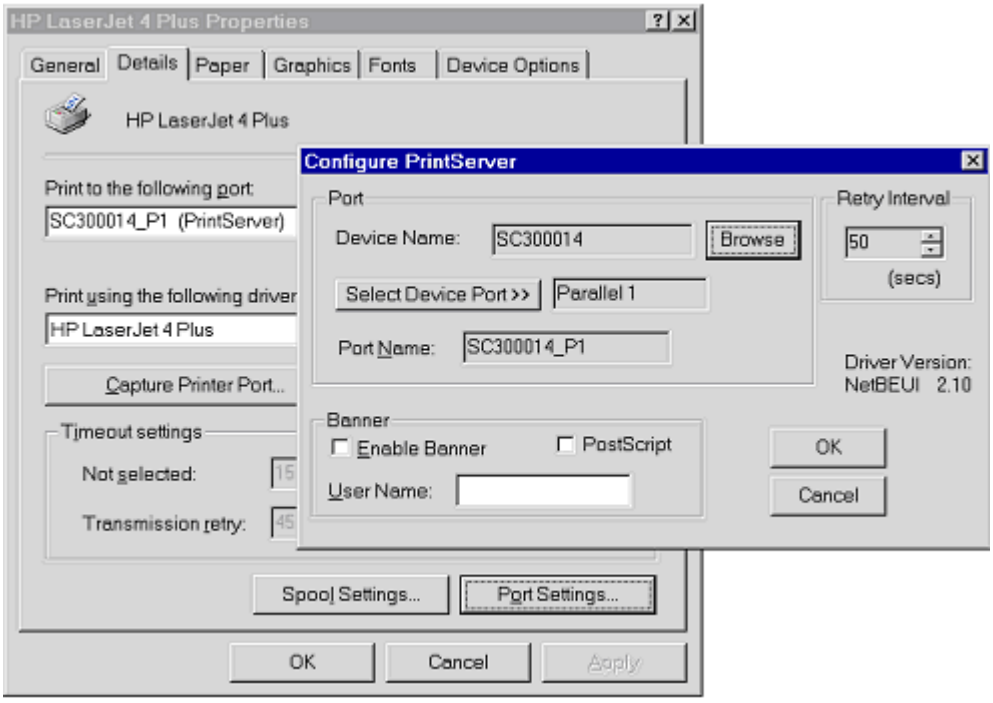
- If the Print Server's IP Address is changed, and you can no longer print, delete the port (see procedure above) and re-install it.

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:



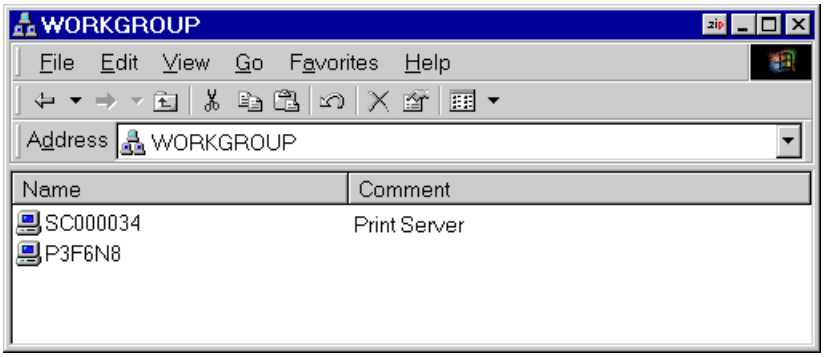
Items shown on this screen are as follows:

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. The least number is 20 seconds.

Windows SMB Printing

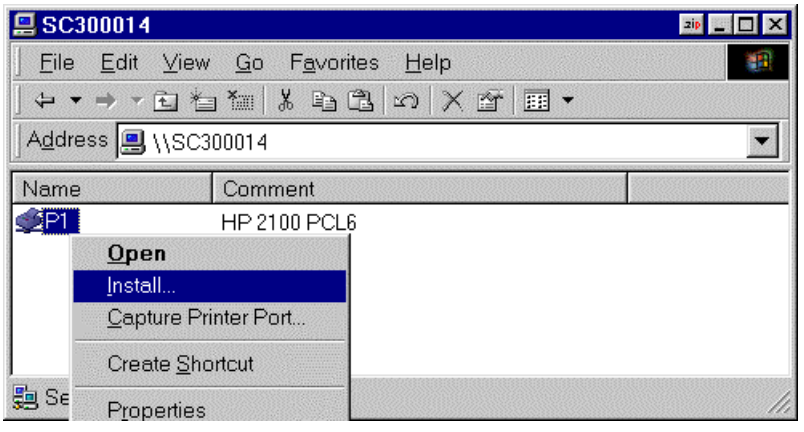
This method requires no additional software to be installed, but the NetBEUI or TCP/IP protocol must be installed on your PC. Use the following procedure to install the Print Server's printer as a Windows SMB network printer:

1. Double-click the *Network Neighborhood* (or My Network Places) 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.



Note: If you can not find the print server, right-click “Network Neighborhood” or “My Networks Places” icon and select “Search for Computer”. Input the Print Server’s name for searching. You can find the print server’s default name in the back panel as SCxxxxxx.

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.



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.

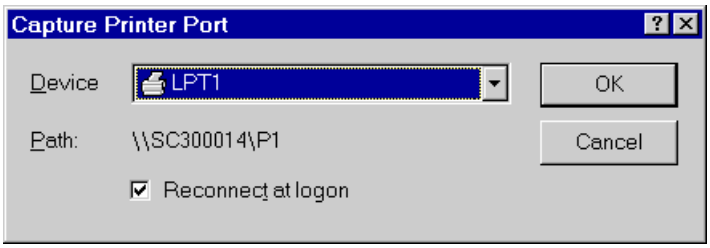
Printing from Windows DOS mode

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 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 the figure 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).



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

Printing from pure MS-DOS program

If you are in pure DOS environment, please ensure you have attached to your server and ensure the server had enable TCP/IP printing.

WinNT:

Please enable "TCP/IP printing" function, then you can entry your Print Server parameter to NT server.

Win2000:

In Printer, you can add a new TCP/IP port to work. Please follow the steps to add this port.

Press Add port => select "standard TCP/IP port" => press "New port" => press "Next" => entry your Print Server IP address to "Printer name or IP address" => press "Next" => select "Custom" and press "Settings" button in Device type option => select protocol option to LPR and entry Queue name (L1) in LPR setting then press ok => press Next => press OK. Now you can use our Print Server to print in Win2000 and share the printer to your network.

Then you can use this command to attach to server and catch the Print Server.

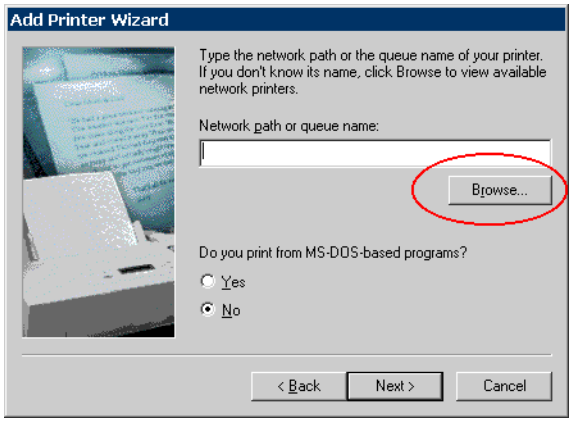
C:\>net use lpt1 \\WinNT (or Windows Server name)\HP6L (printer name)

C:\>type ???.txt >lpt1 ♀(Ctrl+F)

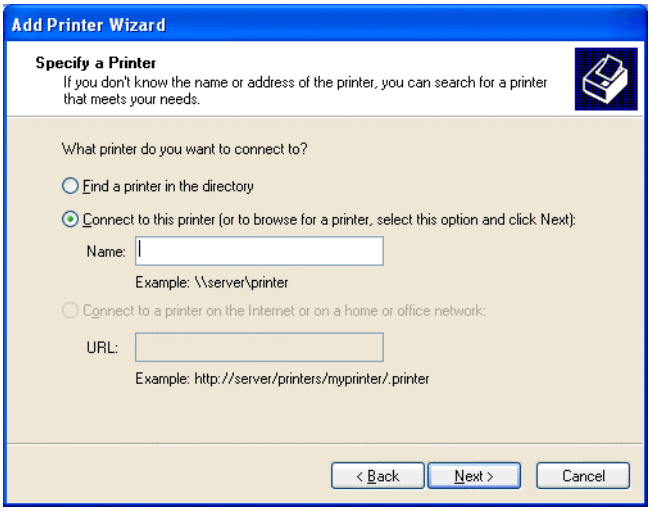
Windows with Server-based Print Queues

With a Server-based Print Queue, the Print Server is installed on an existing Network Server (Windows, Unix, or NetWare), rather than on your PC. If your Network Administrator uses this system, each Windows client must be set up as follows:

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*:
   - On Windows 98/ME, click the *Browse* button
   - On Windows 2000/XP, leave the field blank and click *Next*



Network Path - Windows 98/ME



Network Path - Windows XP

4. Browse the network, and locate the Server and Printer (or Print Queue) which your Network Administrator advised you to use.
5. Click OK, then *Next*.
6. Select the correct printer Manufacturer and Model, as advised by your Network Administrator, and click *Next*.
7. Follow the prompts to complete the Wizard.

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

Windows using NDPS

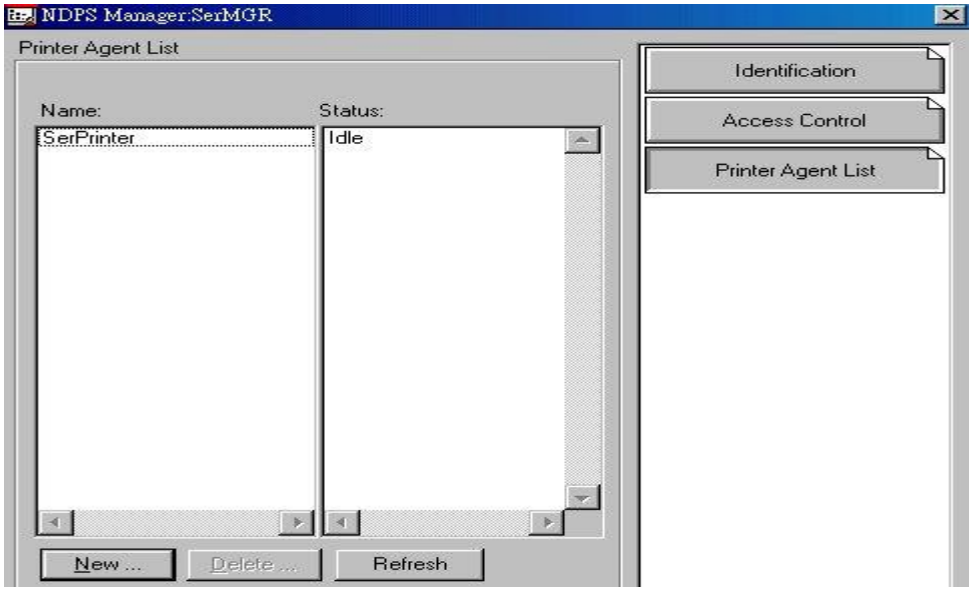
Before using NetWare NDPS (NetWare Distributed Printing Service), one or more NDPS Printer Agents must be created on the NetWare Server. See Appendix B for details of this procedure.

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*.



4. The printer (e.g. Ser Printer 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. For advanced users, the ***PSTool*** program has been provided specifically for the Macintosh environment.

Software Requirements

System 7.x OS or newer.

AppleTalk Setup

1. Click the apple icon and choose Control Panel.
2. Click Network.
3. Ensure that *EtherTalk* 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. Select a Print Server from the printer list by clicking on the appropriate name. The Print Server's name is recorded on a label on the bottom of the Print Server as "Server Name". This name consists of 8 digits and/or numbers.
7. Click on the *Close* box.
   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 Bi-Admin to configure the Print Server. See Chapter 5 for details on installing and using Bi-Admin.

On the Mac, you can use **SimpleText** to edit the Print Server's CONFIG file and the supplied **PSTool** program to send it to the Print Server. The procedure is as follows:

1. Copy the following files from the Utility/Apple folder on the CD-ROM to an appropriate folder on your hard disk.

   PSTool

   CONFIG.xxx

   Select the appropriate CONFIG file for your model as follows:

config.1p	Single parallel port models
config.3p	Models with 3 parallel ports

2. Use **Chooser** to select the desired Print Server.

3. Double click the CONFIG file, and edit it. The appropriate values for each line are described in the following section. The file should look like the example below, but may vary depending on your model.

```
Begin CMD
0001 Device Name: xxxxxxxx
3000 Apple Zone: *
3001 Printer Type (P1): LaserWriter
3002 Printer Type (P2) LaserWriter
3003 Printer Type (SP): LaserWriter
3004 Printer Type (P3) LaserWriter
3101 AP_PCOMM1: No
3102 AP_PCOMM2: No
3103 AP_PCOMM3: No
3104 AP_PCOMM4: No
Serial Port Configuration
0030 Baud Rate: 9600
0031 Stop Bits: 1
0032 Parity: None
0033 Data Bits: 8
0034 Handshake: HARDWARE
9002
```

Do NOT modify the following lines:

beginCMD
9002:

4. Save the file.
5. Double click the icon for PSTool.
6. Click the Printer submenu and choose *Download Postscript File*. A panel will appear with a list of files.
7. Click the CONFIG file. Then click *Download*.

AppleTalk Settings

When editing the CONFIG file, only the *parameter* should be changed. The *parameter* is the last part of the line, after the colon (:). Ensure that you use only valid *parameters*.

0001 Device Name	The *Device Name* will initially be the *Default Server Name*. The *Default Server Name* is shown on a sticker on the base of the device. The *Device Name* can be changed, but the new name MUST NOT exceed 19 characters in length.
3000 Apple Zone	The default value "*" allows all AppleTalk zones to access the Print Server's printers. To restrict access to a particular zone, enter the zone name here
Printer Type	These are text fields, used to describe the printer driver used for each port. P1, P2, P3 refer to the parallel ports, while SP refers to the Serial Port The name can be up to 19 characters long.
AP_PCOMM*n* Values for *n* 1 = parallel port 1	These settings determine whether the port uses ASCII or Binary Communication Protocol. **Enter NO for ASCII or YES for Binary.** • Binary communication is twice as fast as ASCII.

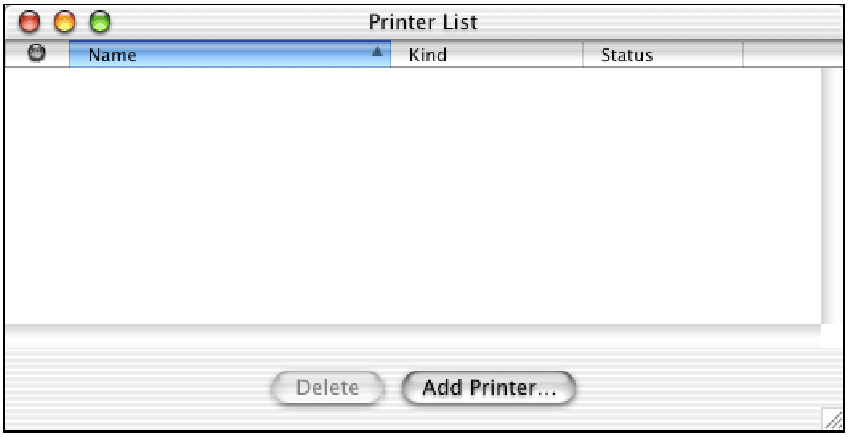
2 = parallel port 2 3 = serial port 4 = parallel port 3	• ASCII communication is more reliable. • The computer, Print Server and printer MUST all be configured to use the SAME protocol. Check your printer manual for details of printer configuration, and use the *Print* menu to configure your computer, so that they use the same settings as the Print Server.

Macintosh OS X

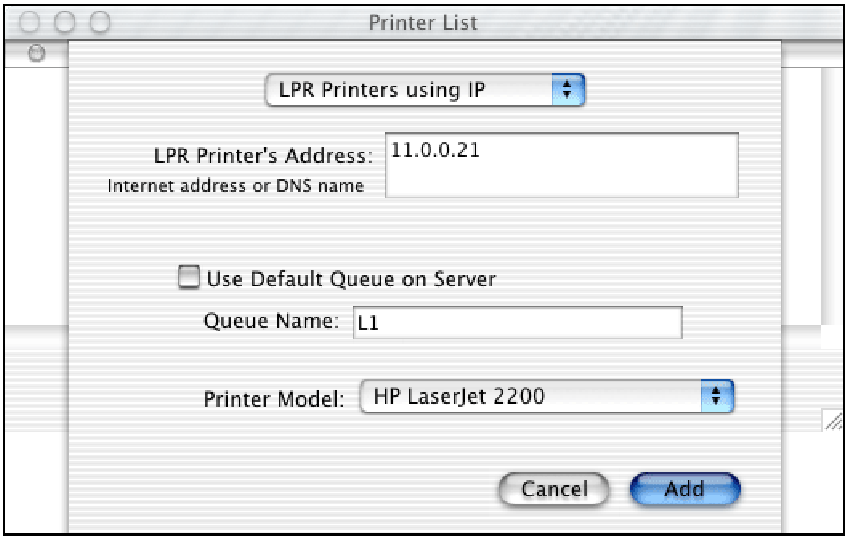
If using LPR printing, you need to ensure the Wireless Print Server has a valid IP address before configuring your Mac as follows.

LPR printing Setup

1. Select the *Printer List* icon.



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



4. Enter the IP address of the Print Server in the *LPR Printer's Address* field, and enter the *Queue Name* (L1 for port 1, L2 for port 2 if the Wireless Print Server has 2 printer ports.).
5. Select the *Printer Model* from the drop-down list.
6. Click *Add*. Configuration is now complete

Chapter 5
Bi-Admin Management Utility

This chapter describes the installation and operation of the Bi-Admin Configuration & Management program.

Requirements

This program requires:

- Windows 95, Windows 98 or ME
- Windows NT 4.0, Windows 2000 or XP

Additional Recommendations:

- Screen resolution of 800 * 600 or greater.

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.

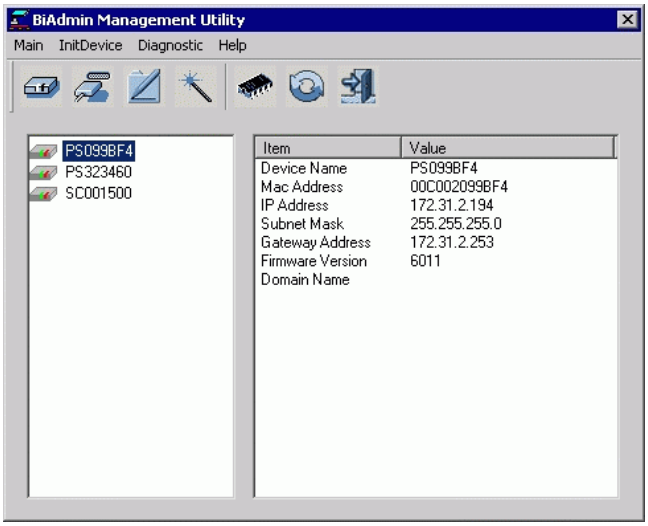
- Select ***Installation*** and this will give you the options for Bi-Admin installation
  - Bi-Admin is always installed if the ***Administrator*** option is chosen.
  - If using the ***Custom*** option on the CD-ROM, select *Bi-Admin.*

Operation

- Start the program by using the icon created by the setup program.

When run, the program searches the network for all active Wireless Print Servers, then lists them on screen, as shown by the example screen below.

Main Screen



Device List

The left panel displays a list of all Wireless Print Servers found on the network. When a Wireless Print Server is selected from the list, its details are displayed in the right panel.

Note: If the IP address is "Null", please click the *Refresh* icon to get the value again.

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

- Check that the device is installed and ON, then *Refresh* the list.
- If the Wireless Print Server is on another LAN segment, use the *InitDevice - Attached Remote* menu option to locate and display the Wireless Print Server.

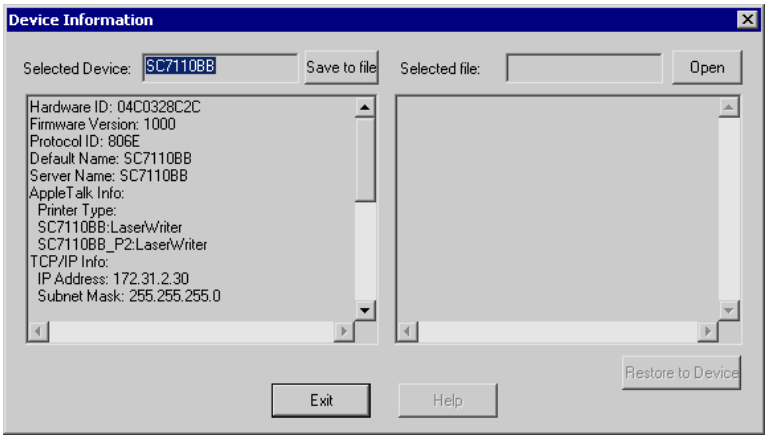
Icons

Device Status

Menu equivalent: ***Main - Device Status***

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

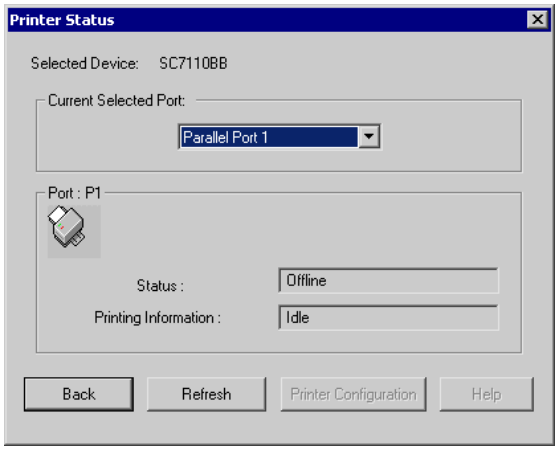
You can use the "Save to File" and "Restore to Device" buttons on this screen to save a copy of the selected device's CONFIG file to your PC, or restore a previously saved file to the selected Wireless Print Server.



Printer Status

Menu equivalent: ***Main - Printer Status***

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



Select the desired port from the drop-down list to display the current status of the printer attached to the port. Possible states are:

- **Status** - On-line, Off-line, or Out of Paper
- **Printing Information** - Idle, Printing

If the printer is Bi-directional, and is not busy, the **Configuration** button will be available, allowing you to change the configuration of the attached printer. This button will be grayed out if the printer does not support this option, or if the printer is busy printing.

Configuration

Menu Equivalent: ***Main - Configure***

This option allows you to configure the selected Wireless Print Server. See the following section for details.

Wizard

This Wireless Print Server Wizard allows you to do the basic configuration for the selected device. The screens are similar to the Wizard run from the CD-ROM, as described in Chapter 3.

Upgrade

Menu Equivalent: ***Main - Upgrade***

This option allows you to upgrade the firmware for the selected Wireless 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: ***Main - Refresh***

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

Exit

Menu Equivalent: ***Main - Exit***

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

Menus

Main Menu

Device Status	Same as *Device* Icon.
Printer Status	Same as *Printer Status* Icon.
Configure	Same as *Configure* Icon.
Upgrade	Same as *Upgrade* Icon.
Refresh	Same as *Refresh* Icon.
Exit	Same as *Exit* Icon.

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 to 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.
Attached Remote	This is used to connect to a Wireless Print Server device on another LAN segment. You need to know the IP address of the remote Wireless Print Server. If your LAN does not have a Router, you can 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.

Diagnostics menu

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

Configuration

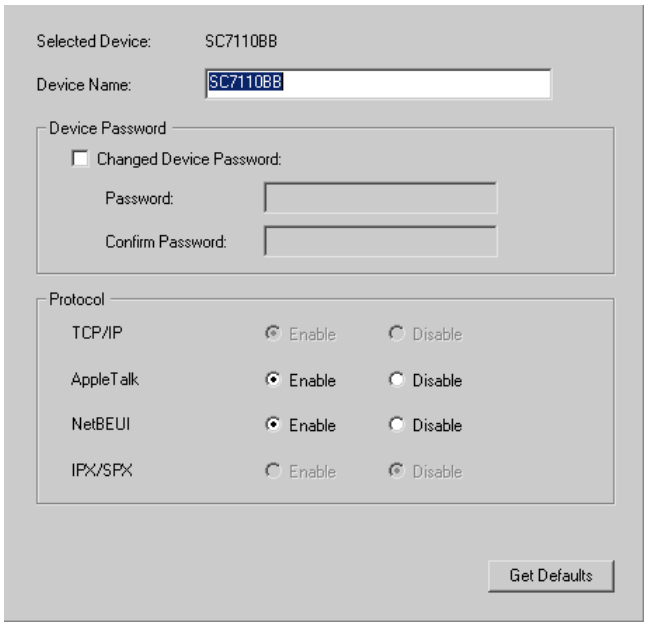
When the *Configuration* icon is clicked, or the *Configure* option on the **Main** menu is selected, a tabbed window will open. The tabs available will vary depending on the Wireless Print Server model selected. The possible tabs are:

- System
- TCP/IP
- AppleTalk
- NetBEUI
- Internet Printing
- Port
- Wireless
- SNMP

System Tab

This screen allows you to:

- Change the name of the Wireless Print Server.
- Change the "Password" for the Wireless Print Server.
- Set the Network Protocols used the selected Wireless Print Server. (Any protocols not used on your LAN may be disabled. This may improve performance.)

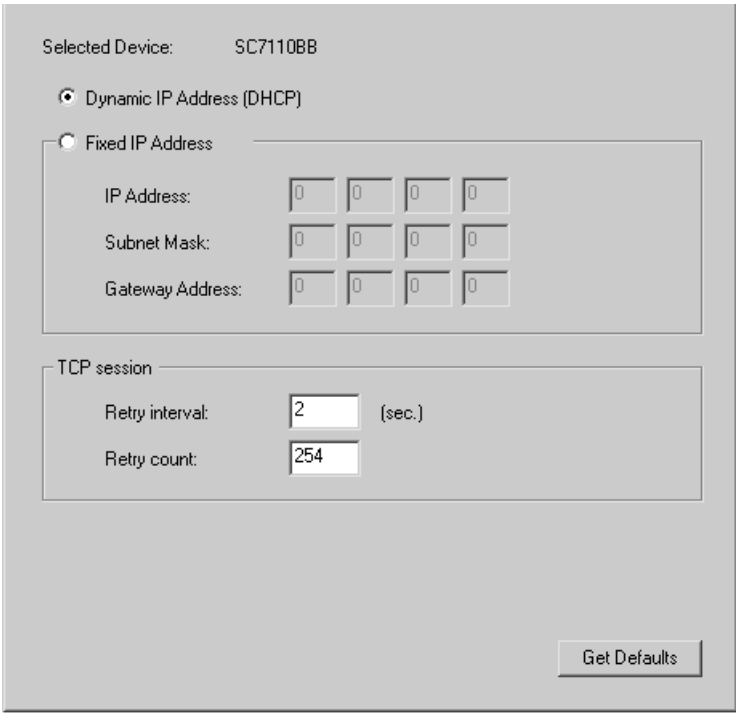


TCP/IP Tab

Selecting this tab will allow configuration for the TCP/IP network protocol. The basic options are:

- **Dynamic IP Address** (DHCP) - The IP address is obtained automatically, from a DHCP Server on your network.
- **Fixed IP Address** - You must enter the IP address, Subnet Mask, and Gateway Address.
  - *IP Address* - Select an unused IP address from the address range used on your LAN.
  - *Subnet Mask* - Use the same values as PCs on your LAN (or on the same LAN segment, if you have a Router).
  - *Gateway* - Use the same values as PCs on your LAN (or on the same LAN segment, if you have a Router).

Some Wireless Print Server models also support the Auto-IP function. If the Wireless Print Server is set to *Dynamic IP Address*, but there's no DHCP server found on the network, the Wireless Print Server will get an IP from the range of 169.254.1.1 ~ 169.254.254.254 automatically. In this case, even though the Wireless Print Server was initialized with an Auto-IP, it will change to DHCP whenever a DHCP server is detected.



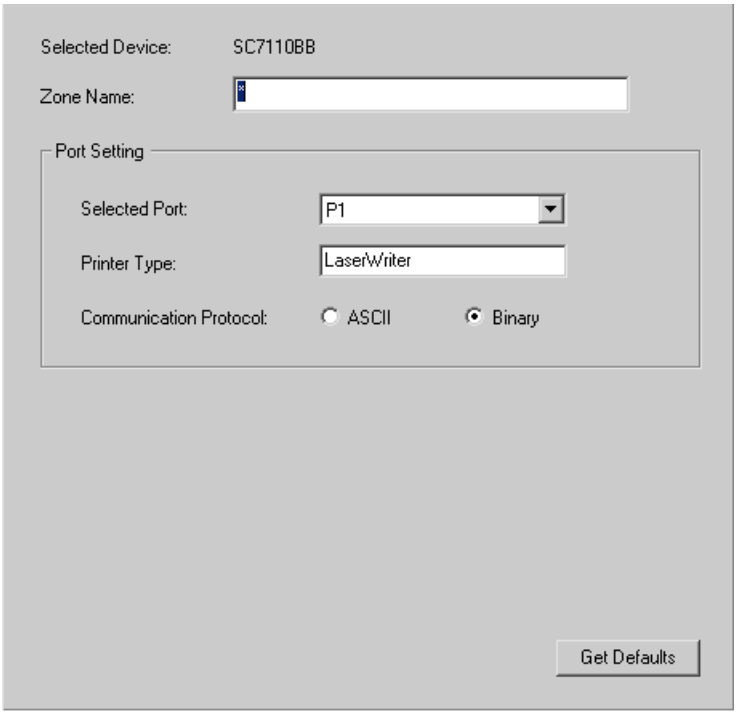
The *TCP session* parameters should only be changed if advised to do so by your Network Administrator or Print Server Technical Support.

AppleTalk Tab

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

This screen allows you to:

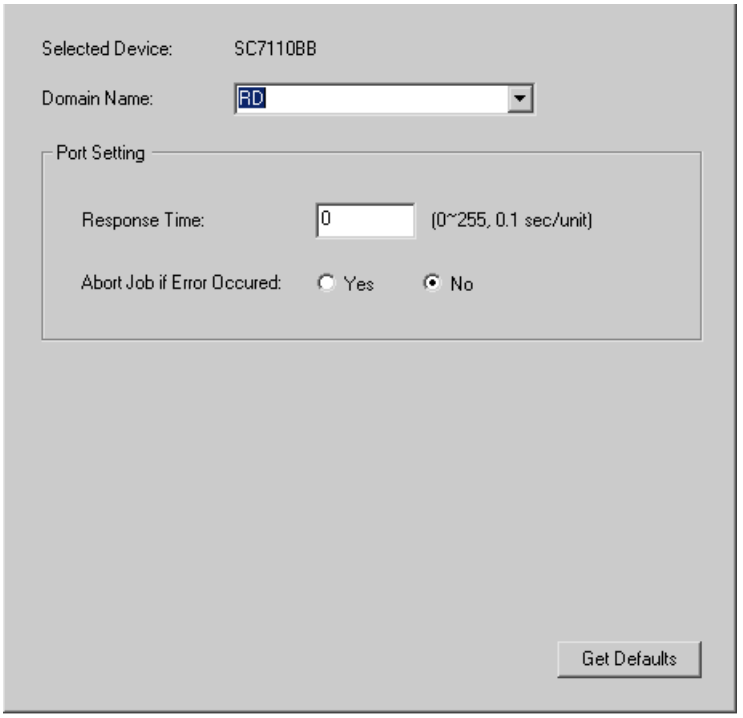
- Set the *Zone Name* field to determine which Apple systems can gain access to this printer.
- The *Printer Type* field is used to describe the printer driver used for each port.
- Set *Communication Protocol* to ASCII or Binary. This must match the setting on the Apple computer systems using the Wireless Print Server.



NetBEUI Tab

This screen allows you to:

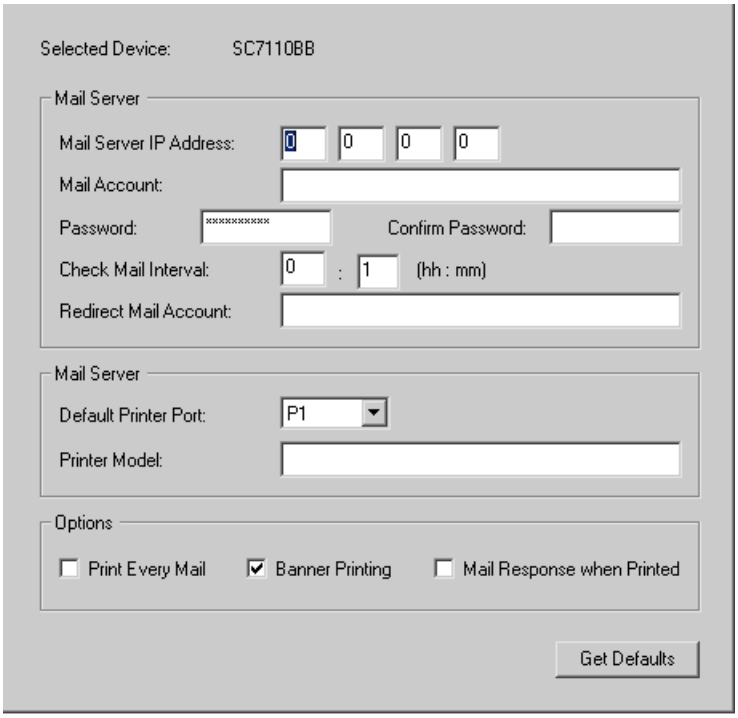
- Choose the *Domain name* for the selected Wireless Print Server.
- Set how fast jobs are sent to the printer by using the *Response Time* field.
- Set the desired option for the *Abort Job if Error Occured* setting.
  - YES causes a print job to be terminated if a printing error occurs.
  - NO (default) will try to continue but may cause print errors.



Internet Printing Tab

The Internet Printing feature available on some models, allows you to send print jobs to the Print Server using Internet E-mail.

Please see below for details of using this feature.



Port Tab

This screen has 2 panels - *Physical Port* and *Logical Port*.

Physical Port

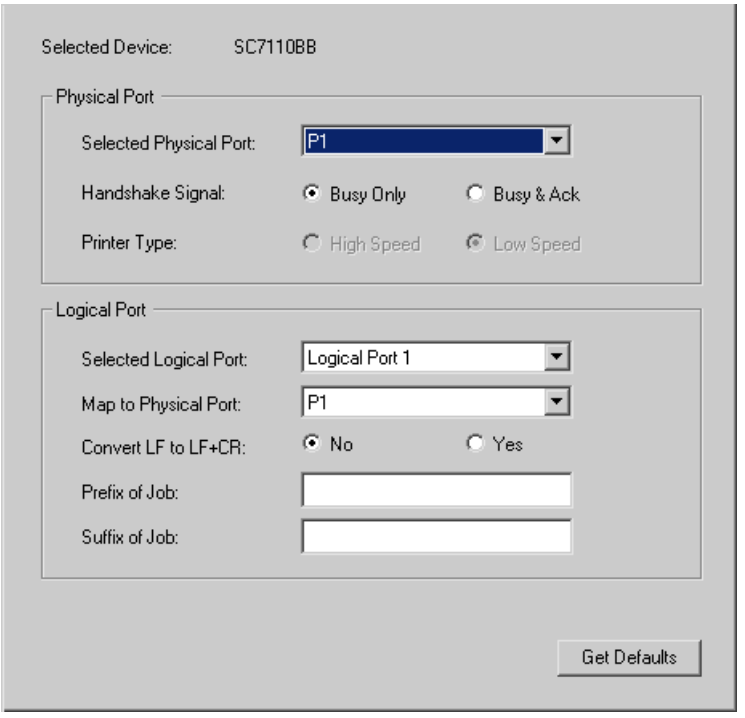
The following settings are available:

- **Selected Physical Port** - Select the Physical Printer Port you wish to configure.
- **Handshake Signal** - Select *Busy Only* or *Busy & Ack* for the Physical Port.
- **Printer Type -** Select *High Speed* or *Low Speed* for the Printer Type.

Logical Port

Logical Ports (printers) can be used in the Unix environment. The following settings are available:

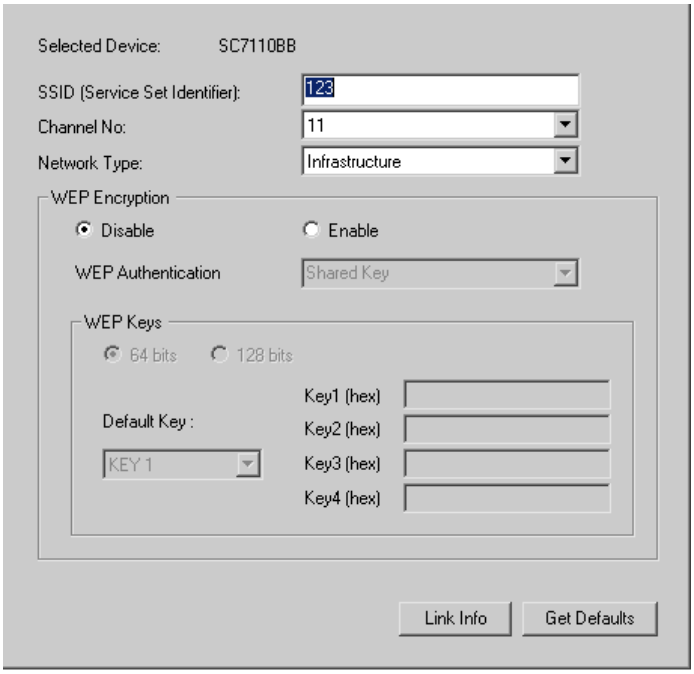
- **Selected Logical Port** - Select the Logical Printer Port you wish to configure.
- **Map to Physical Port** - Select the physical Printer Port which the Logical printer will use.
- **Convert LF to LF+CR** - If checked, LF (line feed) characters are changed to CR+LF (carriage return + line feed).
- **Prefix of Job** - The printer control string (**in hex**) to be sent to the printer before each print job. This string cannot exceed 15 characters.
- **Suffix of Job** - The printer control string (**in hex**) to be sent to the printer after each print job. This string cannot exceed 15 characters.



The *Get Defaults* button will reset all settings to their factory-default values.

Wireless Tab

This tab will be displayed if the selected device has the capability to serve as a Wireless Stations for your LAN.



Change the settings to suit your environment. Generally, you must match the settings of other 'Wireless stations. The available settings are described below.

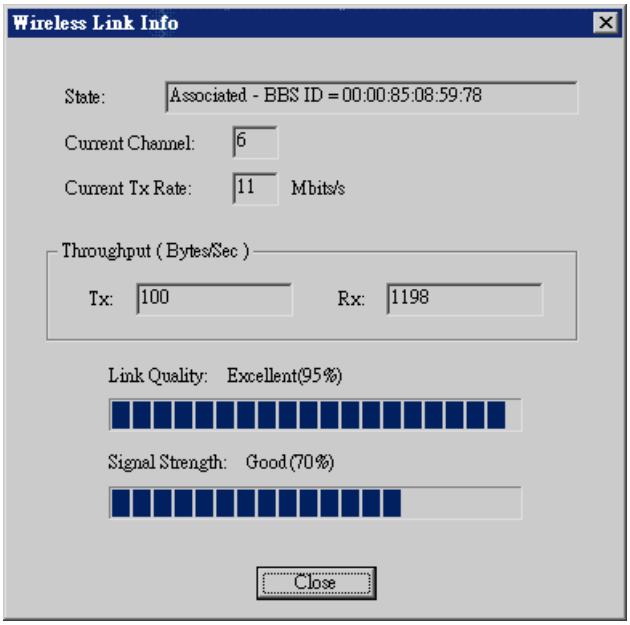
Selected Device	This shows the name of the Print Server.
SSID	• If using an ESS (Extended Service Set, with multiple access points) this ID is called an ESSID (Extended Service Set Identifier). • To communicate, all Wireless stations MUST use the same SSID/ESSID. Change this value, or change the other Wireless stations, to ensure each Wireless station has the same value. • The default value is "null", so the Wireless station can join any Ad-hoc group. **Note! The SSID is case sensitive.**

Channel No	The effect of this setting depends on the *Network Type* setting: • In **Infrastructure** mode, this setting has no effect. The Channel is selected automatically, to match the Channel used by the Access Point. • In **Ad hoc** mode, all Wireless stations MUST use the same Channel number. • In **802.11 Ad-hoc** mode, Wireless stations will scan all Channels looking for compatible groups to join. The Channel setting is used as a default Channel. If you experience interference (shown by lost connections and/or slow data transfers) you may need to experiment with different channels.
Network Type	Select the correct value for your Wireless LAN. • **802.11 Ad-hoc** mode is used when there is no Wireless Access Point, and each Wireless station communicates directly with other Wireless stations. This is the current standard, and should be used if possible. • **Ad-hoc** mode is used when there is no Wireless Access Point, and each Wireless station communicates directly with other Wireless stations. This is the older standard. • **Infrastructure** mode is used when each Wireless station connects to the Wireless Access point. This also provides access to the wired LAN.
WEP Encryption	
WEP Disable/ Enable	If Disabled (default), data is NOT encrypted before being transmitted. If Enabled, you must provide either the **64 Bit** key table or the **128 Bit** keys. The key is used to encrypt the data before transmission.
WEP Authentication	Options are "Open System" or "Shared Key". Select the method (Open System or Shared Key) used by other Wireless Stations. Shared Key is more secure than Open System.
64 Bits/128Bits	Select "64Bits" or "128Bits" as required to match other Wireless stations on your WLAN. Stations which do not have matching settings will be unable to communicate. 128 bit Keys are more secure than 64 bit Keys.
Key Table	Enter the key values to match other Wireless stations on your WLAN. This table is used when Encrypting and Decrypting data. All stations always transmit data encrypted using their default key (see below). The key number (1, 2, 3, 4) is also transmitted. The receiving station will use the key number (1, 2, 3, 4) to determine which key value to use for decryption. If the key value does not match the transmitting station, decryption will fail. The easiest way to ensure there are no problems is to have every Station, including the Access Point, use the same key table (all entries identical). Then, it does not matter which key is used as the default key.

Default Key	Select the key you wish to be the default. Transmitted data is ALWAYS encrypted using the Default Key; the other Keys are for decryption only.

Wireless Link Info Screen

After clicking the "Link Info" button on the Wireless Screen, a screen like the example below will be shown.



State	This indicates which access point is currently in use.
Current Channel	The current channel which has been used.
Current TX Rate	The current transmitting speed.
Throughput (Tx)	This will show how much data has been transmitted per second.
Throughput (Rx)	This will show how much data has been received per second.
Link Quality	This indicates the quality of the Wireless connection
Signal Strength	This indicates the strength of the Wireless signal being received.

The "Link Quality" and "Signal Strength" data is not available if using "Ad-hoc" or "802.11 Ad-hoc" mode.

SNMP Tab

Configuration is only required if using the Simple Network Management Protocol.

Refer to *Configuring the Wireless Print Server for SNMP* in Chapter 7 for details.

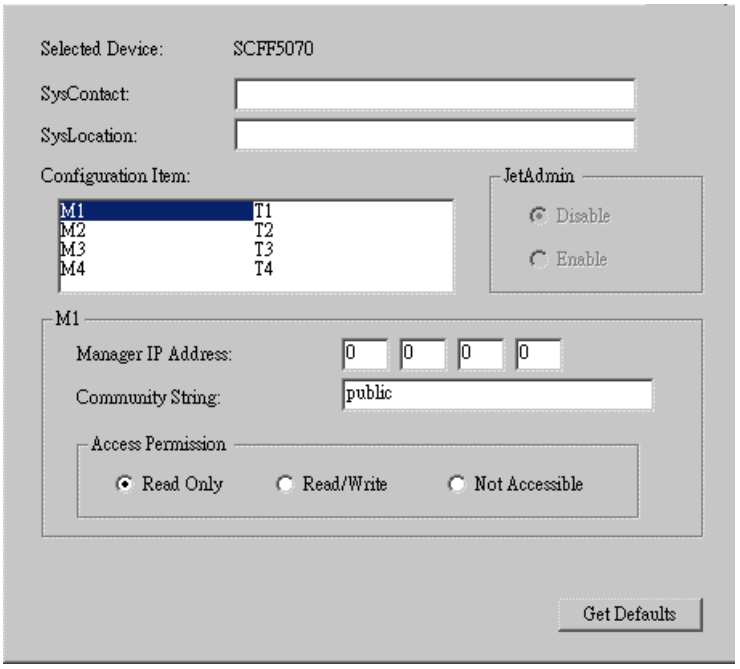


Figure 1: SNMP Screen

Chapter 6

Web Interface Setup

6

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

Overview

The Print Servers have 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.

Note: FPS-5P-S/FPS-5P-M, FPS-2PUW and FPS-1U web interface are just a little bit different. Because they have support some different functions that others without. FPS-5P-S/FPS5P-M have support IPX/SPX protocol, FPS-2PUW has support Wireless interface and IPP, and FPS-1U has support IPP.

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 to print a report which includes the current IP address. (Press the Diagnostic Button, and hold it for 2 seconds.)
- Use the **Bi-Admin** 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

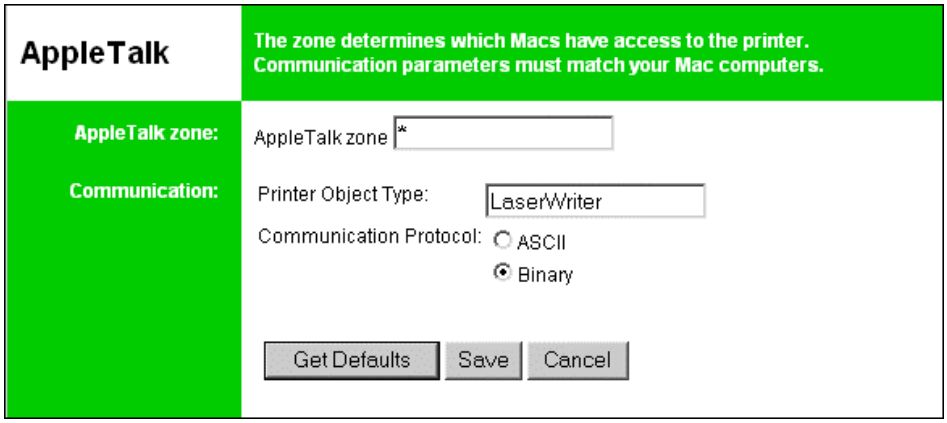
Note: The hardware address of the Print Server is shown on a sticker on the base of the device.

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.

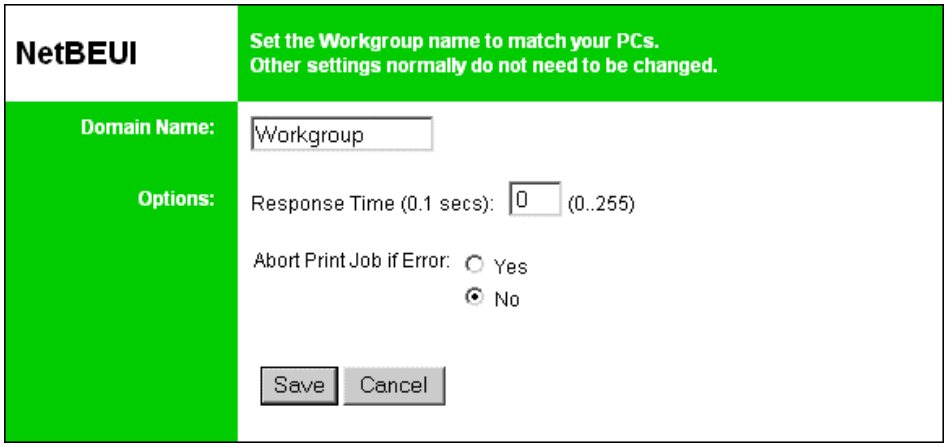
Configuration Screens

AppleTalk



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.

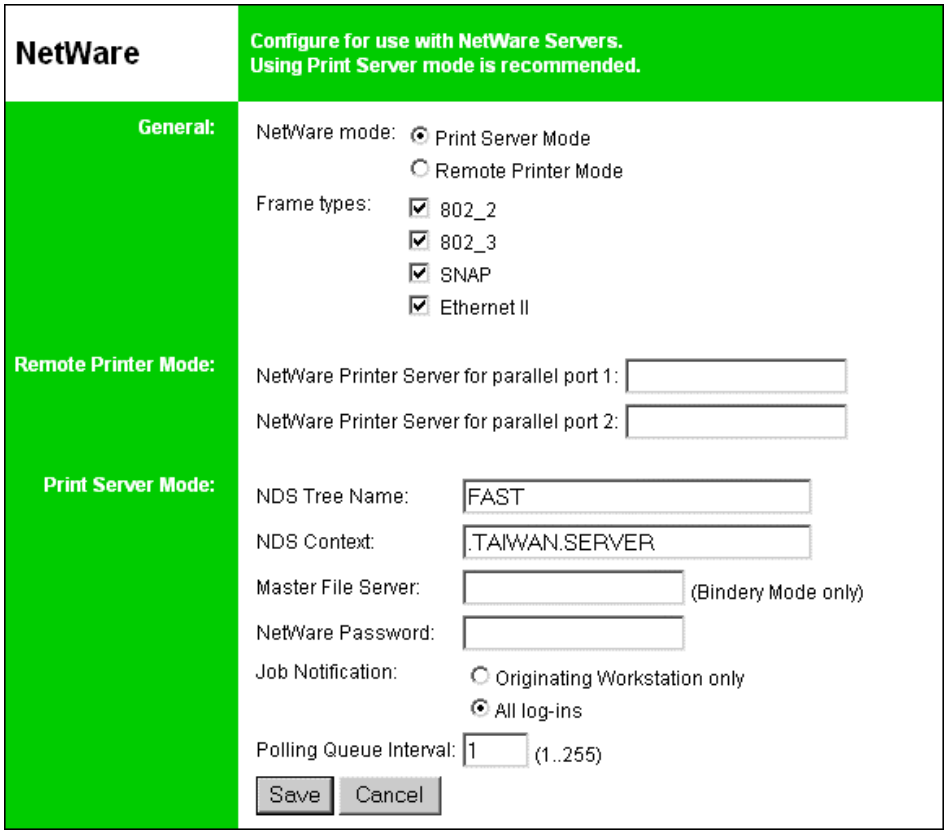
NetBEUI



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 the print 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 Print 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

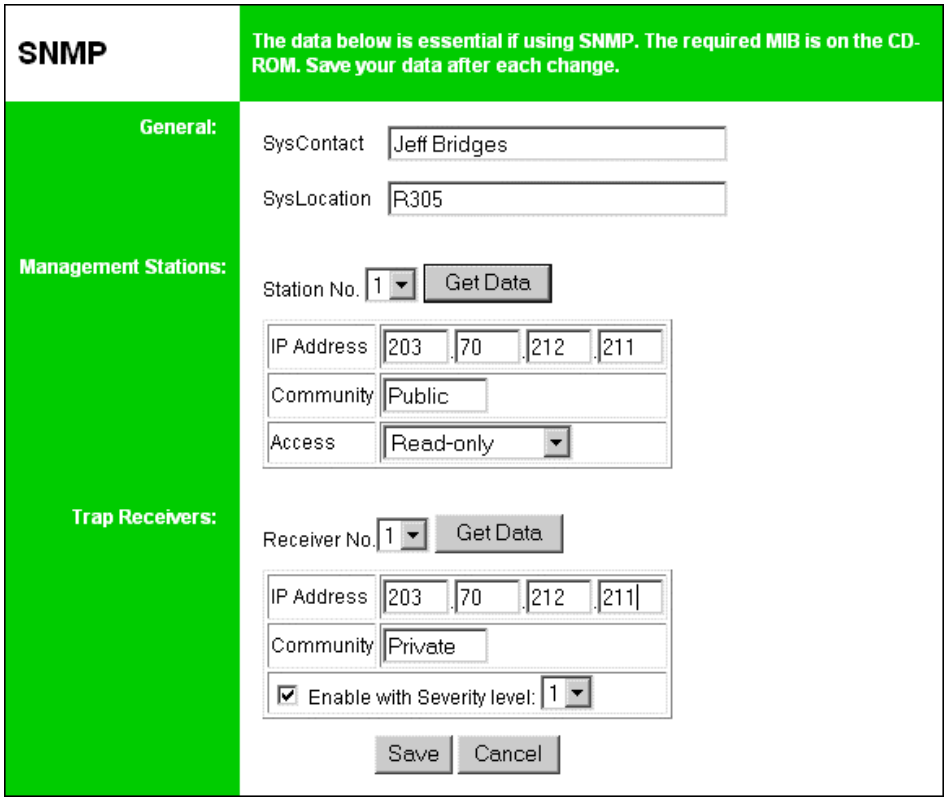
The NetWare screen will not be available for FPS-2PUW and FPS-1U.



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)
Print Server 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.

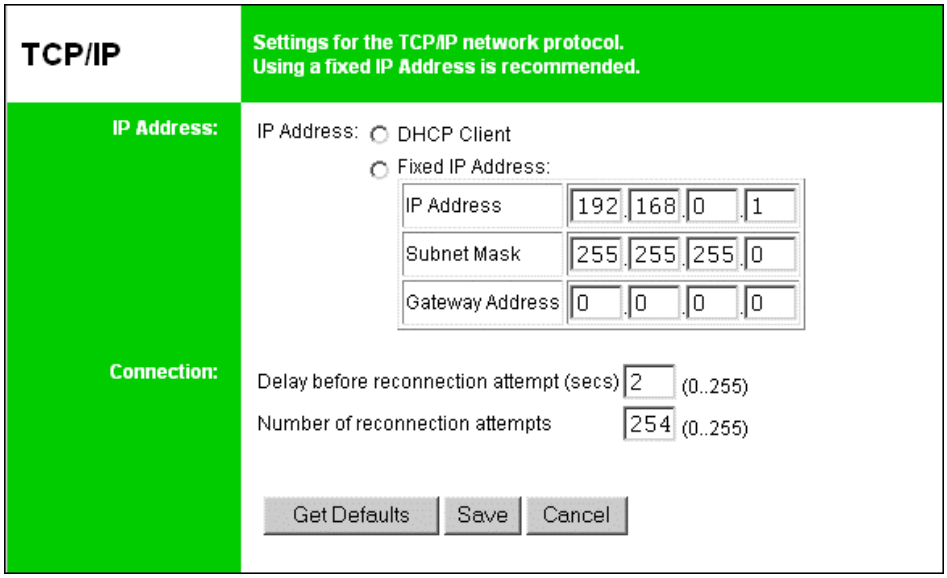
SNMP (Simple Network Management Protocol)



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.

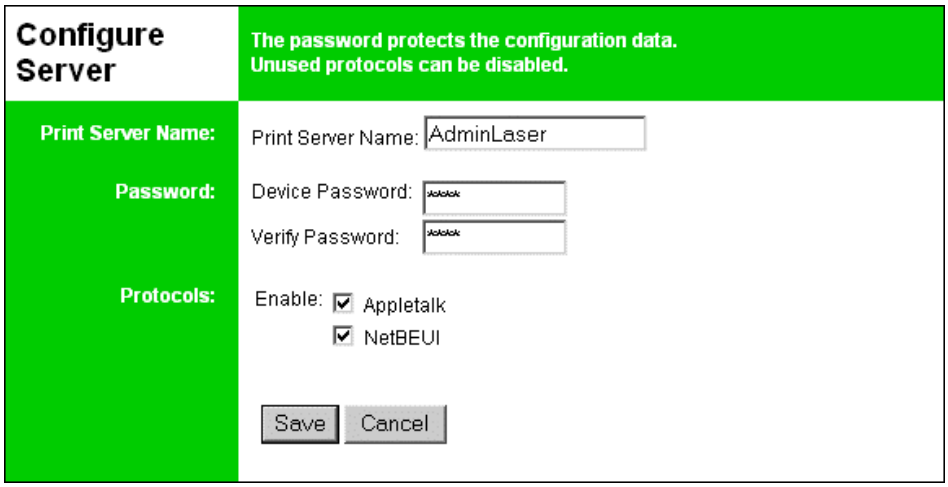
Access	Select the desired level of access.
Trap Receivers	
Receiver No.	Select the Trap Receiver number (1..4), and click the ***Get Data*** button to update the display for the selected item.
IP Address	Enter the IP Address of the Trap Receiver, which will be sent the Trap message.
Community	This is 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



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.

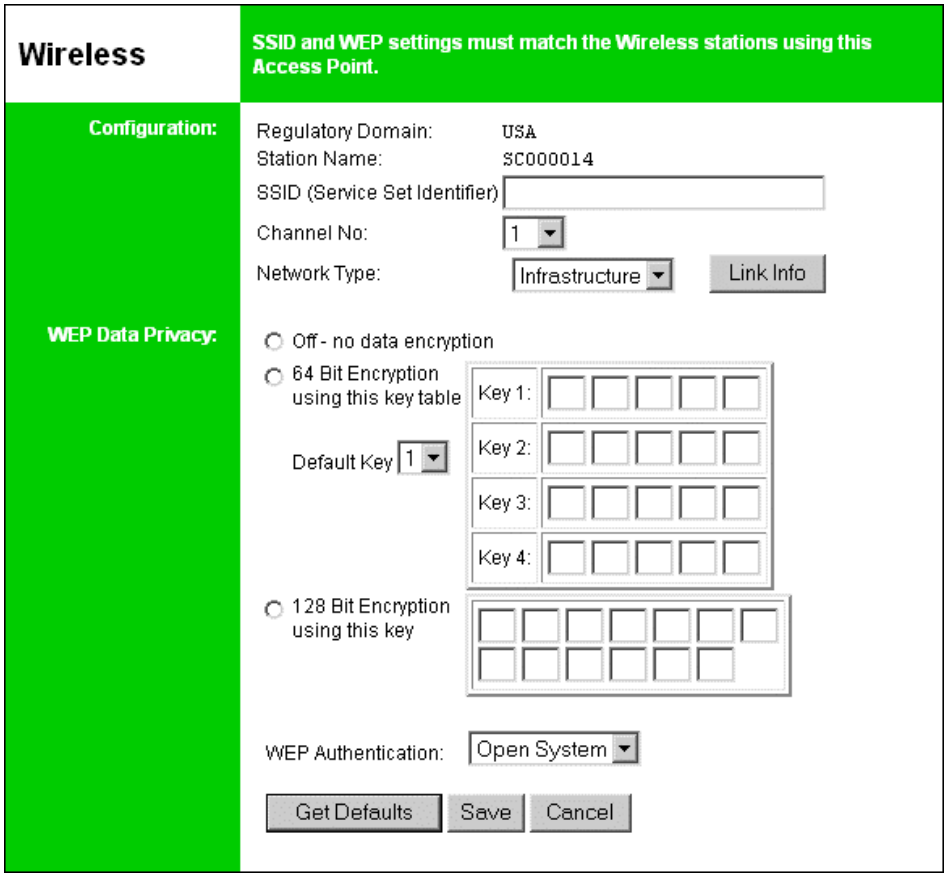
Configure Server



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 may be disabled if they are not required on your LAN.

Wireless Configuration

The Wireless screen will be available on FPS-2PUW, the settings on this screen must match the other Wireless stations in order for communication to occur.



Configuration	
Regulatory Domain	It is illegal to use this device in any location outside of the regulatory domain.
Station name	This is the same as the *Device (Host) Name* on the WAN screen. On your PC, some Wireless status screens may display this name as the Access Point in use.
SSID (ESSID)	To communicate, all Wireless stations MUST use the same SSID/ESSID. The default value is **null.** **Note! The SSID is case sensitive.**
Channel No.	The default Channel for the USA and Canada is 3. Select the value you wish to use on your Wireless LAN. If you experience lost connections and/or slow data transfers you may need to experiment with different channels to see which is the best.
Network Type	Select the correct value for your Wireless LAN. • **802.11 Ad-hoc** mode is used when there is no Wireless Access Point, and each Wireless station communicates directly with other Wireless stations. This is the current standard. • **Ad-hoc** mode is used when there is no Wireless Access Point, and each Wireless station communicates directly with other Wireless stations. This is the older standard. • **Infrastructure** mode is used when each Wireless station connects to the Wireless Access point. This also provides access to the wired LAN.
Link Info Button	Click this button will open the sub screen.
WEP Data Privacy	
Off	If OFF (default), data is NOT encrypted before being transmitted.

64 Bit Encryption	If selected, data is encrypted, using the default key, before being transmitted. The receiving station must be set to 64 Bit Encryption, and have the same Key value in the same position in its key table. Otherwise, it will not be able to decrypt the data. **Default Key** Select the key you wish to be the default. Transmitted data is ALWAYS encrypted using the Default Key; the other Keys are for decryption only. **Key Table**: This table is used when Encrypting and Decrypting data. All stations, including this Access Point, always transmit data encrypted using their default key. The key number (1, 2, 3, 4) is also transmitted. The receiving station will use the key number (1, 2, 3, 4) to determine which key value to use for decryption. If the key value does not match the transmitting station, decryption will fail. The easiest way to ensure there are no problems is to have every Station, including the Access Point, use the same key table (all entries identical). Then, it does not matter which key is used as the default key.
128 Bit Encryption	If selected, data is encrypted using the key before being transmitted. The receiving station must be set to use 128 Bit Encryption, and have the same Key value. Otherwise, it will not be able to decrypt the data. **Key** Enter the key value you wish to use. Other stations must have the same key
WEP Authentication	Options are "Open System" or "Shared Key". Some Wireless cards do not support both methods. Check your Wireless card's documentation to determine the correct value. Ensure that all Wireless stations use the same setting as the Access Point.

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 un-available.)
- **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).

Chapter 7
Special Features

7

This chapter covers the special features of the Print Server.

Overview

The Print Server has four (4) special features:

- Some Print Servers support IPP (Internet Printing Protocol).
- All model support the proprietary *Internet Mail Printing* system.
- SNMP (Simple Network Management Protocol).
- Wireless Station - supported by FPS-2PUW only.

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 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 IPPCLIENT.EXE file, located in the IPP folder.

IPP Client Setup - Windows 95/98/Me/NT 4.0/2000/XP/Server 2003

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

- Window 95/98/Me/2000/XP/Server 2003
- Windows NT 4.0

Installing from the CD-ROM

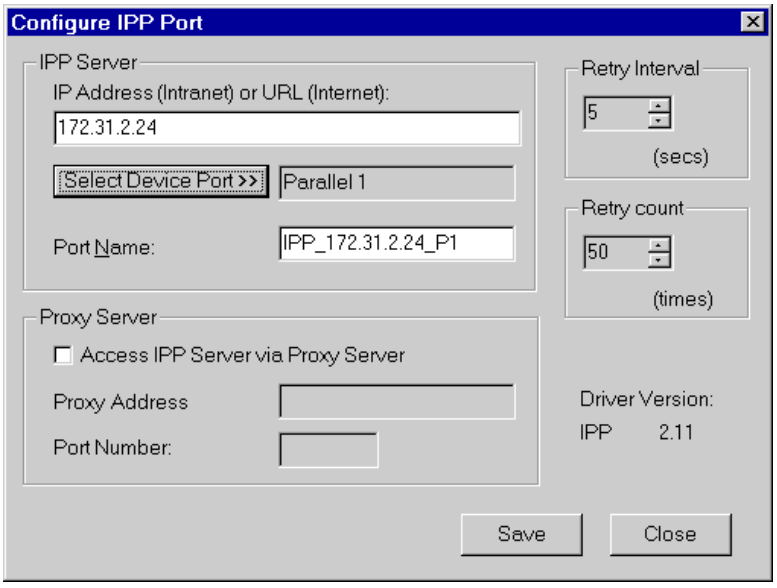
5. Insert the CD-ROM in your drive. If the program does not start automatically, run the SETUP program in the top-level folder.
6. Follow the prompts until you reach the *Select Installation* screen, and select *IPP Client*.
7. At the next screen, select the *Install IPP Client* option.
8. Click *Next*,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

Installing using IPPCLIENT.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.

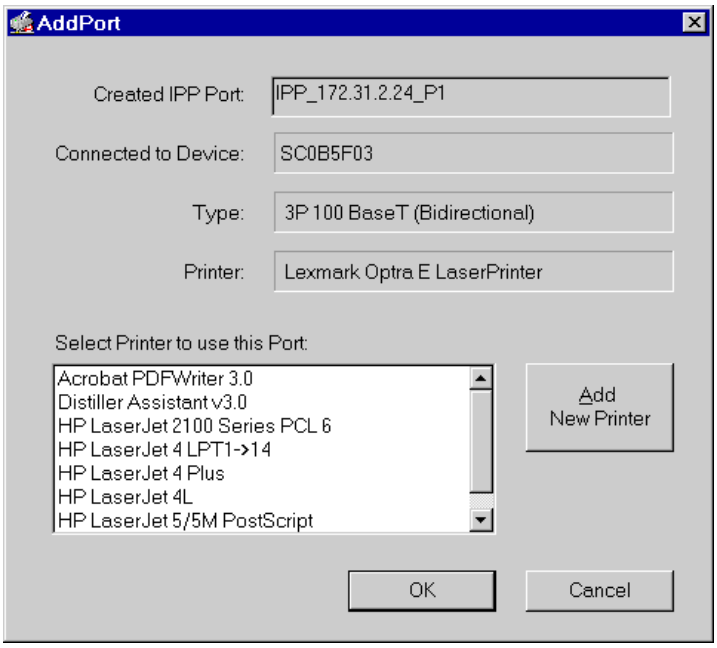
IPP Client Configuration (Windows 95/98/Me/ NT 4.0/2000/XP/Server 2003)

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



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:



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

   OR

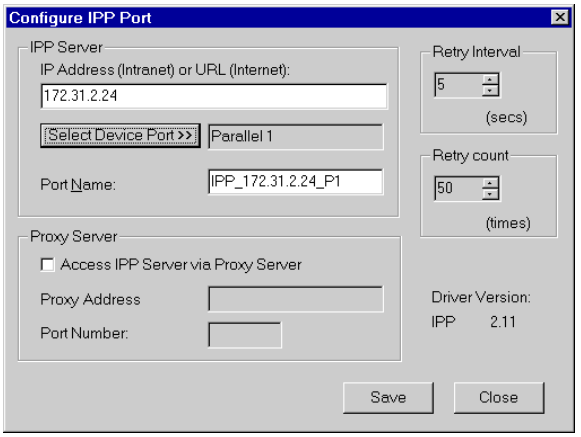
   Click the *Add New Printer* button to create a new printer to use the IPP port. This will start the *Add Printer* wizard. Follow the prompts to complete the process. Ensure that the new printer uses the IPP port.

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 as below, 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).

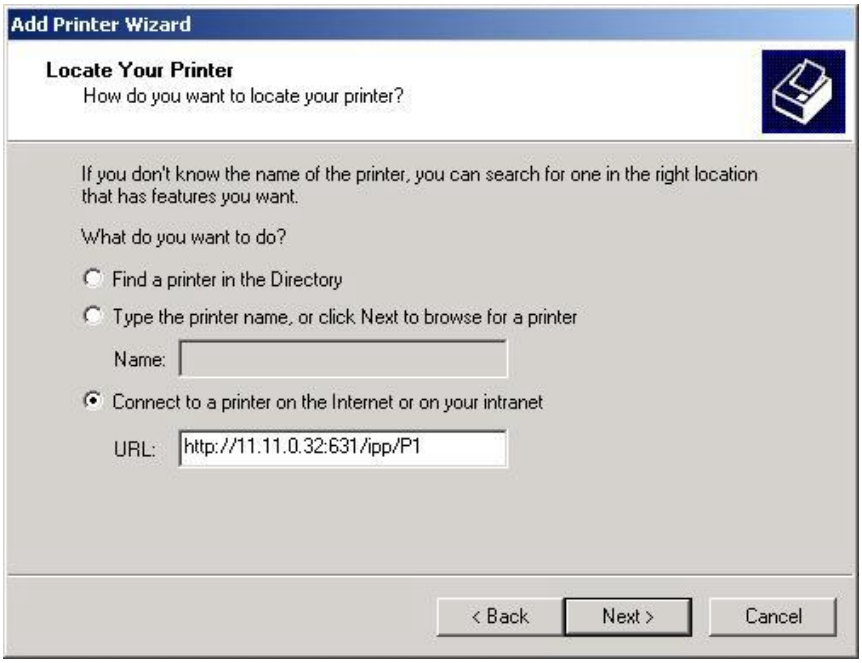
There are 2 settings - *Retry Interval* and *Retry Count* - which can be adjusted if you have problems connecting to the IPP Server.

- **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 Wireless 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.

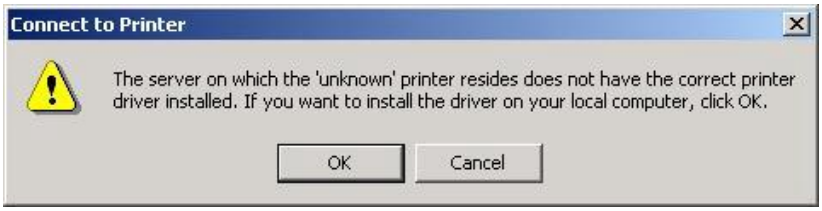


3. Select *Connect to a printer on the Internet or on your Intranet*, and enter the URL of the IPP Server as follows, where IP_Address represents the IP Address of the IPP Server, and 631 is the port number.

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.



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 **Bi-Admin** utility program, or the Web-base interface 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

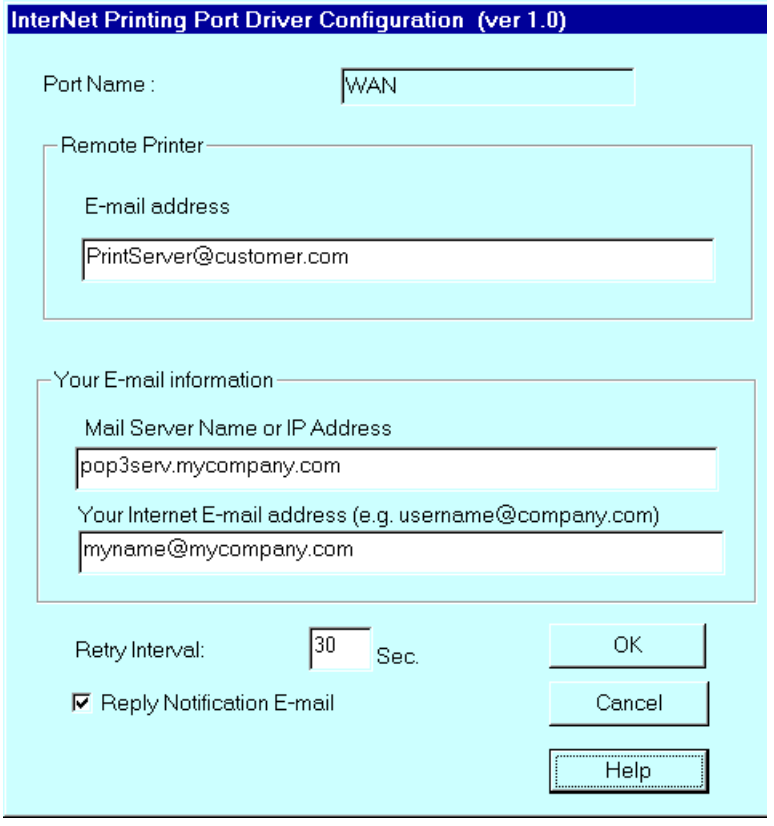
The software provided for remote users (InterNet Printing Port) should be installed by everyone intending to use Internet printing. Otherwise, remote users can print correctly only if:

- They send 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.



4. The following data must be provided.

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

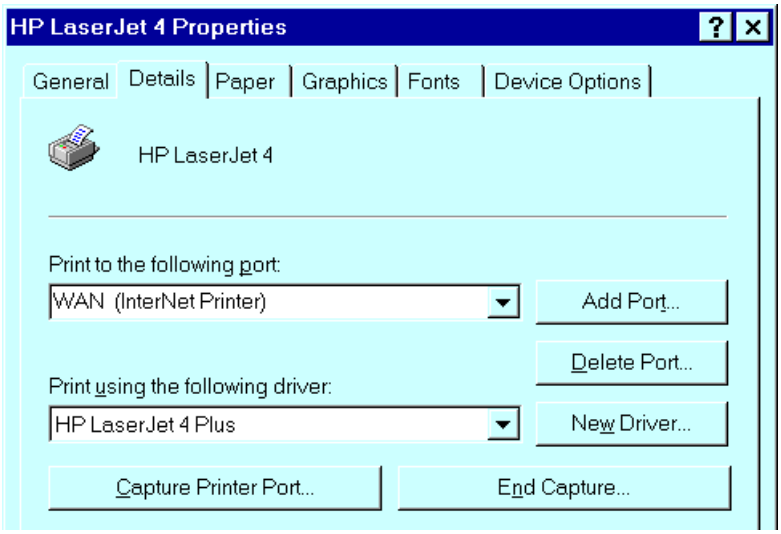
Remote Printer E-mail Address	The E-Mail address for the Internet printer. Your print jobs will be sent to this E-Mail address.
Mail Server Name or IP Address	This is the name or IP Address of your Mail Server. If you are on a LAN, ask the LAN Administrator. If using a dial-up connection, use the data 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.



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 *Configure Port* screen on page 66.
   - 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

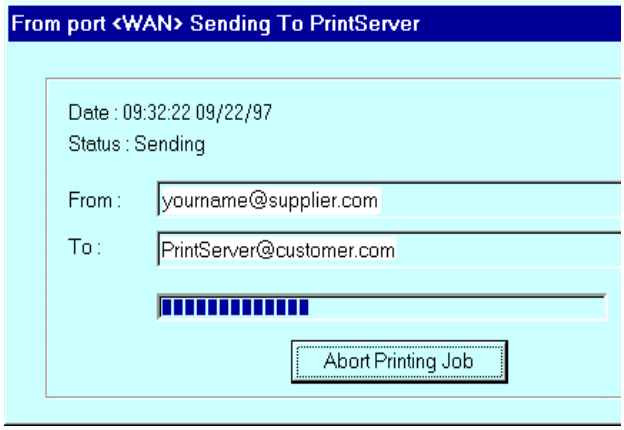
To make sure that the correct printer driver for the remote printer is installed on your system, you can use the InterNet Printing Port to send an E-Mail to the Internet Printer. The procedure is as follows:

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:



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 **Bi-Admin**, 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.
Mib3p.mib	Models with 3 parallel ports

Note: *FPS-2PUW is not support SNMP protocol.*

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.

Wireless Models - FPS-2PUW

The FPS-2PUW is Wireless stations, NOT access points. Like all other Wireless stations, they have 3 work modes:

- **802.11 Ad Hoc mode -** No Access Point is used, Wireless stations communicate directly with each other. This is the current standard.
- **Ad Hoc mode -** No Access Point is used, Wireless stations communicate directly with each other. This is the older standard.

Of the two (2) Ad-hoc modes, "802.11 Ad Hoc" mode is recommended. If your Wireless LAN Card doesn't provide "802.11 Ad Hoc" mode, try "Ad Hoc" mode on the PC and "802.11 Ad Hoc" on the FPS-2PUW. If this fails, select "Ad-hoc" mode on the Print Server.

- **Infrastructure (Default)** - All Wireless stations connect to the Access Point. This allows connection to both other Wireless stations and the wired LAN.

FPW-2PUW does NOT allow both the LAN connection and "Infrastructure" mode.

In "Infrastructure" mode, connecting a LAN cable will disable the Wireless interface.

Required configuration

	Ad-hoc Mode	Infrastructure Mode
SSID	Must match the other Wireless stations, unless the SSID is **null** or "any". If its SSID is **null** or "any", a Wireless station can join any Ad-hoc group. But since the FPS-2PUW is fixed devices (rather than roaming), their SSID should not be **null** or "any". It's recommended to assign value to SSID for FPS-2PUW.	Must match the Access Point.
Channel	Should match the other Wireless stations. However, when joining an existing ad-hoc group, a Wireless station must use the Channel in use, rather than its own Channel. For a device like the FPS-2PUW in a fixed location, it is best to set them to the Channel providing the least interference and best performance.	Access Point sets the Channel used. Wireless stations automatical-ly locate the correct channel.

WEP Settings	Must match the other Wireless stations.	Must match the Access Point.

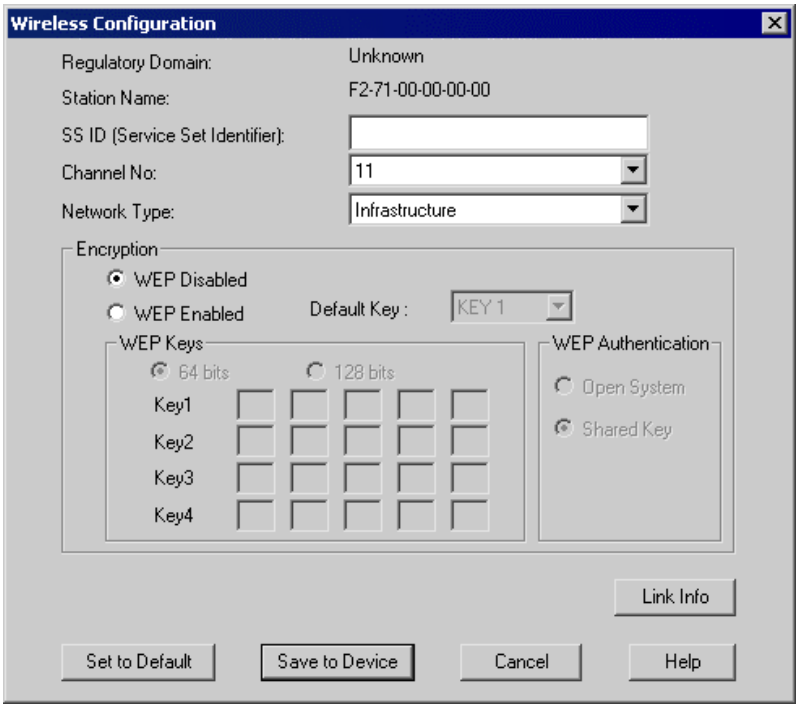
Two (2) methods are available to perform the required configuration:

- **Bi-Admin** management utility program - see below for details.
- **Web-based setup** - see Chapter 6 for details.

Bi-Admin Wireless Screen

Installation and use of the Bi-Admin Windows utility is described in Chapter 5.

Clicking the *Wireless* icon, or selecting *Configuration - Wireless* on the menu, will display the following screen.



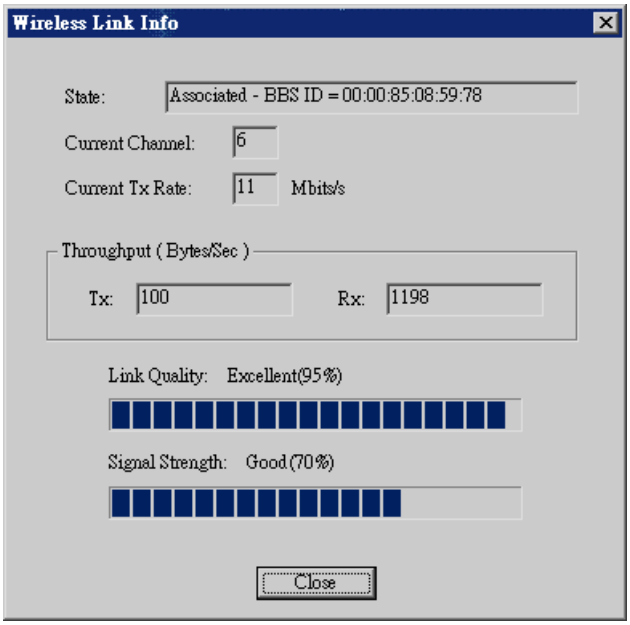
Regulatory Domain	It is illegal to use this device in any location outside of the regulatory domain.
Station Name	The name used to identify this Wireless station.
SSID	• If using an ESS (Extended Service Set, with multiple access points) this ID is called an ESSID (Extended Service Set Identifier). • To communicate, all Wireless stations MUST use the same SSID/ESSID. Change this value, or change the other Wireless stations, to ensure each Wireless station has the same value. • The default value is "null", so the Wireless station can join any Ad-hoc group. **Note! The SSID is case sensitive.**

Channel No	To communicate in "802.11 Ad-hoc" or "Ad hoc" mode, all Wireless stations MUST use the same Channel number. • If using "802.11 Ad-hoc" or "Ad-hoc" mode, select the value you wish to use on your Wireless LAN. • If using "Infrastructure" mode, the Channel is selected automatically, to match the Channel used by the Access Point. • If you experience interference (shown by lost connections and/or slow data transfers) you may need to experiment with different channels to see which is the best.
Network Type	Select the correct value for your Wireless LAN. • **802.11 Ad-hoc** mode is used when there is no Wireless Access Point, and each Wireless station communicates directly with other Wireless stations. This is the current standard. • **Ad-hoc** mode is used when there is no Wireless Access Point, and each Wireless station communicates directly with other Wireless stations. This is the older standard. • **Infrastructure** mode is used when each Wireless station connects to the Wireless Access point. This also provides access to the wired LAN.
Encryption	
WEP Disabled/ Enabled	If Disabled (default), data is NOT encrypted before being transmitted. If Enabled, you must provide either the **64 Bit** key table or the **128 Bit** keys, as described below. The key is used to encrypt the data before transmission.
64 Bit	• If selected, data is encrypted, using the default key, before being transmitted. The receiving station must be set to 64 Bit Encryption, and have the same Key value in the same position in its key table. Otherwise, it will not be able to decrypt the data. • Default Key - select the key you wish to be the default. Transmitted data is ALWAYS encrypted using the Default Key; the other Keys are for decryption only. **Key Table**: This table is used when Encrypting and Decrypting data. All stations, including this Access Point, always transmit data encrypted using their default key. The key number (1, 2, 3, 4) is also transmitted. The receiving station will use the key number (1, 2, 3, 4) to determine which key value to use for decryption. If the key value does not match the transmitting station, decryption will fail. The easiest way to ensure there are no problems is to have every Station, including the Access Point, use the same key table (all entries identical). Then, it does not matter which key is used as the default key.

128 Bit	If selected, data is encrypted using the key before being transmitted. The receiving station must be set to use 128 Bit Encryption, and have the same Key value. Otherwise, it will not be able to decrypt the data.
WEP Authentication	Options are "Open System" or "Shared Key". Some Wireless cards and Access Points do not support both methods. Check your documentation to determine the correct value to use.

Wireless Link Info Screen

After clicking the "Link Info" button on the Wireless Screen, a screen like the example below will be shown.



State	This indicates which Access Point is currently in use.
Current Channel	The current channel which has been used.
Current TX Rate	The current transmitting speed.
Throughput (Tx)	This will show how much data has been transmitted per second.
Throughput (Rx)	This will show how much data has been received per second.
Link Quality	This indicates the quality of the Wireless connection
Signal Strength	This indicates the strength of the Wireless signal being received.

The "Link Quality" and "Signal Strength" data is not available if using "Ad-hoc" or "802.11 Ad-hoc" mode.

Chapter 8
Troubleshooting

8

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 10/100Base-TX:** • 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)

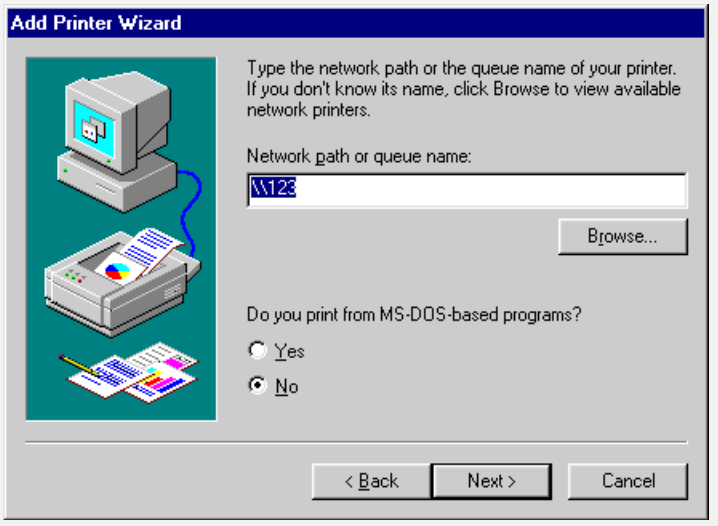
Problem No. 1	Why do I get an incorrect printout?
Solution No. 1	Some possible reasons are: • You may have chosen Binary encoding to print the file. Try to use ASCII encoding. • Some of the fonts, which are in your print file may not be supported by the printer. Try selecting LaserWriter 7 instead of 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.

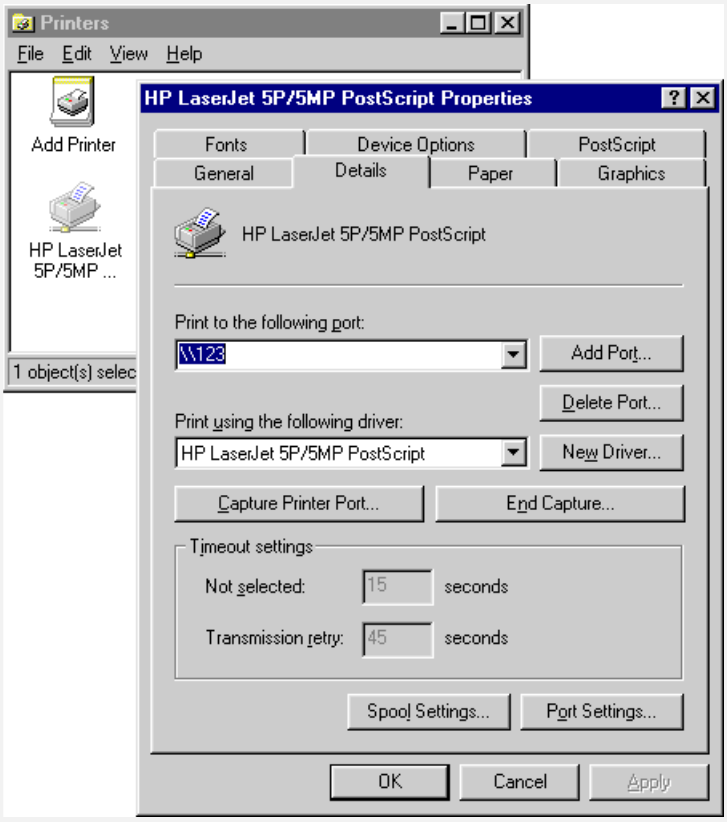
Novell NetWare

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 = serial port or 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.

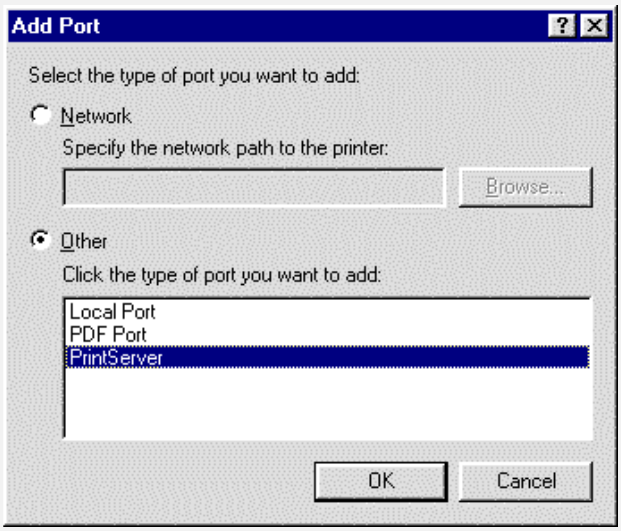
Windows Printing Problems

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

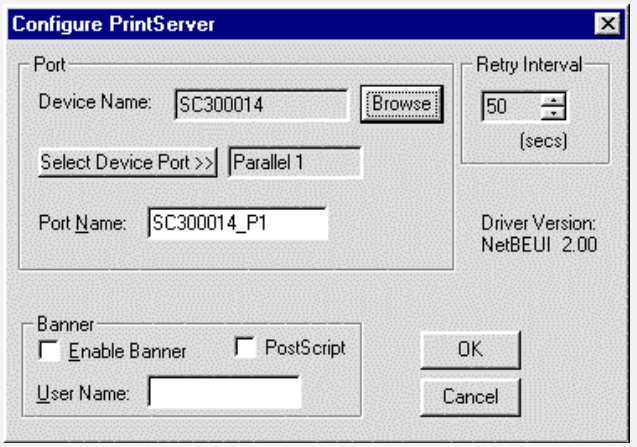
Details tab, as shown below.



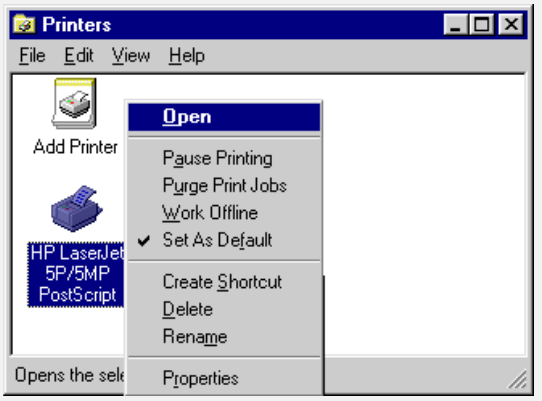
7. Click the *Add Port* button. On the resulting screen, select *Other*, then *Printer Server*, as the port to add, as shown below.



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, 2000, XP or Server 2003, 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. • Serial port configuration, if a serial device. • Printer driver in the application program or Windows matches the printer.
Problem No. 6	**The *Configuration* button on the *Printer Status* screen in Bi-Admin 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.

Appendix A
Specifications

General Specifications

FPS-5P-S	
Power Consumption	5w max.
External Power Adapter	12V DC
LEDs	3
Parallel Port	1 Centronic female DB-25 connector
Ethernet Connector	10/100Base-TX
FCC / CE	Class B
FPS-5P-M	
Power Consumption	5w max.
External Power Adapter	12V DC
LEDs	3
Parallel Port	Three Centronic female DB-25 connec-tors
Ethernet Connector	10/100Base-TX
FCC / CE	Class B
FPS-2PUW	
Power Consumption	3w max.
External Power Adapter	12V DC
LEDs	4
USB Port (1.1)	1
Parallel Port	1 Centronic female DB-25 connector
Ethernet Connector	10/100Base-TX
Wireless Interface	IEEE80211b
FCC / CE	Class B
FPS-1U	
Power Consumption	3w max.
External Power Adapter	9V DC
LEDs	2
USB Port (1.1)	1
Ethernet Connector	10/100Base-TX
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

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	AppleTalk	FTP/Telnet
FPS-5P-S	√	√	√	√	√
FPS-5P-M	√	√	√	√	√
FPS-2PUW	√	√		√	√
FPS-1U	√	√		√	

Feature Support

Model	HTTP Setup	E-mail Printing	IPP	SNMP
FPS-5P-S	√	√		√
FPS-5P-M	√	√		√
FPS-2PUW	√	√	√	
FPS-1U	√	√	√	√

FPS-2PUW can also act as IEEE 802.11b Wireless Stations.

Regulatory Approvals

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

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, XP and Server 2003

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:

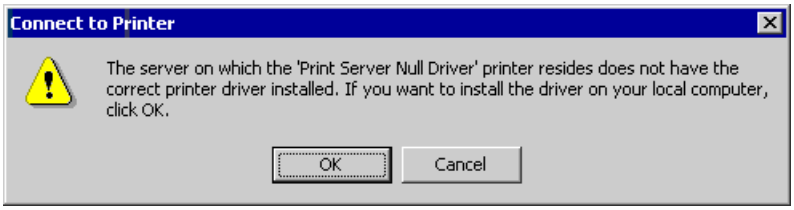


Figure 2: Windows 2000 Message

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 FPS-5P-M/FPS-5P-S are fully support 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.

Bi-Admin

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

- Bi-Admin is installed by run the Setup.exe in Utility\Bi-Admin folder in the CD-ROM.
- See Chapter 5 for general information on using Bi-Admin.
- The **NetWare Manual** (in the Manual\NetWare folder on the CD-ROM) contains detailed information on using Bi-Admin with NetWare Servers.

Other Methods

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

WPConfig	This program requires Windows 3.1, and the IPX/SPX protocol.
PSConfig	Menu-based DOS program, intended only to configure the Print Server for use with NetWare V2, 3 and 4.
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.

- These programs are provided on the CD-ROM, in the ***Utility*** folder.
- WPConfig has a SETUP program; the other programs need only to be copied to the desired folder on your PC.
- The documentation for these programs is provided in sub–folders of the ***Manual*** folder on the CD-ROM.
- **PSConfig** and **WPConfig** do NOT configure your NetWare Server. It is necessary to use PCONSOLE to create the necessary print object and queues, and ensure the appropriate users have access rights to the print queues.

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	NetWare print server to service the Print Server's parallel

Server for P1	port 1.
Novell Printer Server for P2, P3 & SP (if exist)	NetWare print server to service the Print Server's parallel port 2 (P2), parallel port 3 (P3), or Serial port (SP), if these ports 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 *Yes* 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.

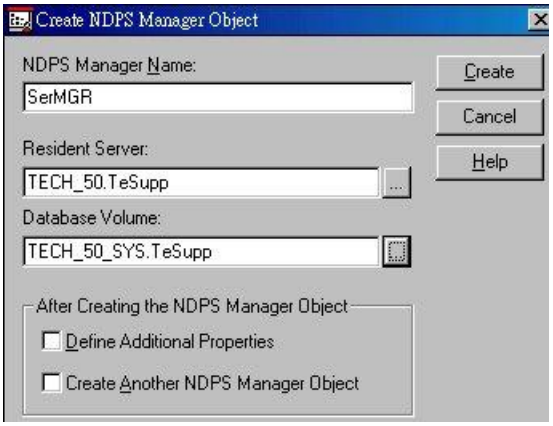


Figure 3: Create NDPS Manager Object

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 selects 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.

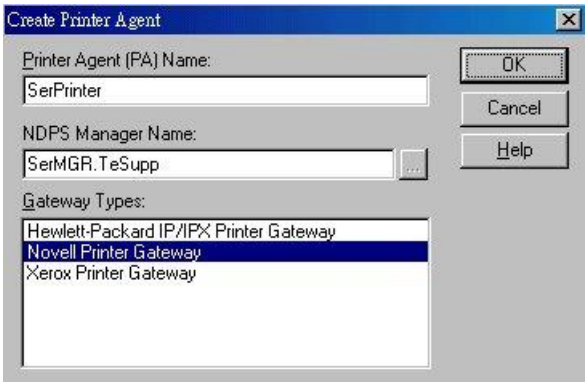


Figure 4: Create Printer Agent

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 5 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 and Windows NT 4.
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
- PSfilter (proprietary printing method)

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.