USER'S GUIDE

TEW-P1U1P

11Mbps Wireless Print Server with 1 USB & 1 Parallel Printer Ports

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Chapter 1
Introduction

1

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

Features

Congratulations on the purchase of your new TEW-P1U1P Wireless Print Server. Your Wireless Print Server was designed to provide a simple and efficient network printing solution. It is packed with features, including:

➢ *Versatility.* The Wireless Print Server supports up to four protocols: TCP/IP, SMB (Service Message Block), AppleTalk (EtherTalk), and NetBEUI. It features one or two Ethernet interface ports and operating system support includes Unix, NetWare (NDPS LPR printing), and Microsoft Windows.

➢ *Easy Installation.* The Wireless Print Server makes adding printers or plotters to your network simple. The auto-sensing feature on the LAN interface means that there is no need to set jumpers or perform software configuration to select the network interface used.

➢ *Easy Setup.* A number of utility programs are supplied to simplify setup. For Windows 95/98/Me/NT/2000/XP users, the BiAdmin program makes it easy to configure the Wireless Print Server for a variety of network and server configurations.

➢ *Web-based Interface.* The Web-based interface provides an easy method of configuration in TCP/IP networks to every model.

➢ *Compact Size.* This allows the Wireless 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 Wireless Print Server and attached bi-directional printers can be configured remotely.

➢ *Internet Printing Protocol (IPP) Support.* The Wireless Print Server can act as an IPP (Internet Printing Protocol) Server, allowing clients, suppliers, colleagues and others to print to your printer from anywhere on the Internet. Windows IPP Client software is also supplied.

➢ *Wireless LAN Support.* Wireless stations supporting the IEEE 802.11b standard can interoperate with the Wireless Print Server. Both LAN and WLAN users can print to the attached printer.

Safety Instructions

For your own safety, and to protect your Wireless 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 Wireless 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 Wireless 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 Wireless Print Server. If any items are missing, contact your dealer immediately.

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

Description

TEW-P1U1P Wireless Print Server

- 1 USB Printer Port
- 1 Parallel Printer Port
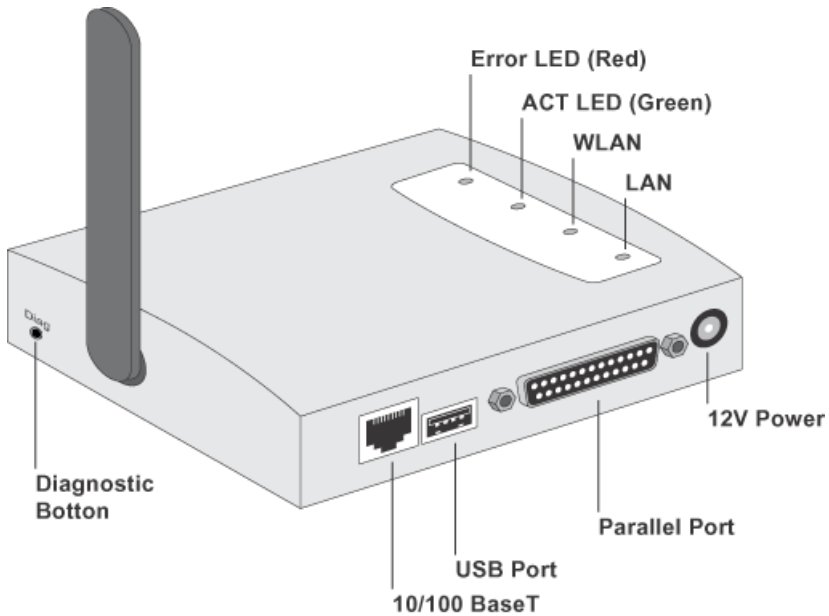- IEEE 802.11b Wireless Station
- 10/100BaseT LAN connection

Figure 1 TEW-P1U1P Wireless Print Server

LED Indicators

The Error LED is red. The Status indicator LED is green. The LED indicator modes are described in the following table.

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 via the Wireless LAN.
LAN ACT	**Off** - No LAN connection **On** - LAN connection available. **Flashing** - Transmitting or receiving data via the wired LAN.

Diagnostic Push Button

The Wireless Print Server 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 Wireless Print Server OFF.

2. Press and hold the diagnostic button. While pressing the button, switch the Wireless 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 Wireless Print Server and the printer attached to port 1 (parallel port) 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 Wireless Print Server in your LAN.

Procedure

1. Preparation

- Ensure the power is OFF.
- Find the *Default Server Name* for your Wireless Print Server. The *Default Server Name* is shown on a sticker on the base of the device. It consists of 8 letters and/or digits. Record this name; it may be needed during configuration.

2. Connect the Printer or Printers

Connect the printer or plotter cables to the appropriate port on the Wireless Print Server unit. Parallel port cables should be less than 3 meters long.

3. Connect to the Network

- **For Wired Networks**

  Use a standard RJ-45 LAN cable to connect the LAN port on the Print Server to a 10/100Base-TX hub or switch.

Note!	**If the LAN port is not connected to a functioning network device, the LAN port is disabled. To enable the LAN port, please power off the Print Server, connect the LAN port to a working network device and then power on the Print Server.**

- **For Wireless Networks**

  Change your PC's Wireless settings to match the Print Server's default settings:
  - Mode: Ad-hoc
  - SSID: ANY
  - Channel: 11
  - WEP: Disabled

Note!	**In *Infrastructure* mode, you can use EITHER the Wireless OR the LAN interface on the Print Server, but not both**

4. Power Up and check the LED

Connect the supplied Power Adapter, power up both the Printer and Print Server, and check the Error LED on the Print Server.

- It should flash, then go off.
- It will remain On if there is a hardware problem.

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

Chapter 3

Wireless Print Server Configuration

3

This chapter provides an overview of the configuration process.

Overview

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

- The Wireless Print Server usually requires configuration, but if there's a DHCP server on your network, then the device is just plug-and-play. A Windows-based setup Wizard is also provided on the CD-ROM to simplify this task.

- PCs wishing to use the printer attached to the Wireless Print Server always require configuration. See *Chapter 4- Client Configuration* for details.

- If you wish to use a queue-based printing system using **Windows NT Server/Windows 2000/Windows XP**, the Network Server must be configured as detailed in *Appendix B - Network Server Configuration*. However, it is not necessary to use a Network Server-based queue; client PCs can print directly to the Wireless Print Server using the *Peer-to-peer Printing* installed by the *User* setup option on the CD-ROM.

Configuration Methods

The following methods are available to perform the required Print Server configuration:

- **Windows-based Wizard** - see below for details.
- **BiAdmin** management utility program - see Chapter 8 for details.
- **Web-based setup** - see Chapter 6 for details.

Advanced Configuration and Management

The BiAdmin management utility is provided for advanced configuration and management. This program is installed by default when the *Administrator* install option is chosen. See Chapter 5 for details on using BiAdmin.

Using the Windows Wizard

The Windows-based Wizard is supplied on the CD-ROM, and runs on Windows 95, 98, NT4.0, ME, Windows 2000 and Windows XP.

Using this Wizard is the recommended method to configure the Print Server.

It can be used configure the Wireless Print Server for your Network environment, even if the Print Server does not have a valid IP address.

Procedure

1. Insert the supplied CD-ROM into your drive. If the setup program does not start automatically, run *AutoRun.exe* in the root folder.

2. On the first screen, shown below, click *Setup Wizard*.

Figure 2: Wireless Print Server Screen

3. Click *Next* on the first screen of the Wizard, to view a list of Wireless Print Servers on your LAN.

4. Select your new Wireless Print Server, then click *Next* to continue.

5. Enter the required data on the following screen.

   - Name of the Print Server can be changed if you wish.
   - Comment is optional.
   - Select or enter the Workgroup name for this Wireless Print Server.

6. Click *Next* to configure the **TCP/IP Screen**:

   - Select *Obtain IP Address automatically* if your LAN has a DHCP Server, otherwise select *Fixed IP Address*.
   - For *Fixed IP Address*, enter an unused address from the range used on your LAN, or click the *Suggest New Values* Button.
     Use the same *Network Mask* and *Gateway* as PCs on your LAN.

7. On the **Wireless Screens**, the settings should be set to match your other Wireless Stations. For details about each setting, refer to the following section *Wireless Configuration*.

8. Click *Finish* to save the data to the Wireless Print Server.

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

If the desired Wireless Print Server is not listed:

- Check all cables to the Wireless Print Server.
- Check the Wireless Print Server's LEDs:
  - The Red LED should be OFF and the Green LED should be ON or flashing.
  - Check the LAN and WLAN LEDs. Both should be On (if a LAN cable is connected).
  - Check that your PC and the Wireless Print Server are on the same LAN segment. (If you don't have a Router or Gateway on your LAN, you only have 1 segment.)
  - If using the Wireless connection, ensure that your PC's Wireless settings match the Print Server.
- Check that your PC has either the TCP/IP or NetBEUI network protocols installed. See *Checking your Network Protocols* on page 10 for details.

Wireless Configuration

The Wireless Print Server is a Wireless station, NOT access point. Like all other Wireless stations, they have 2 modes:

- **Ad Hoc mode (Default)-** no Access Point is used, Wireless stations communicate directly with each other.
- **Infrastructure** - all Wireless stations connect to the Access Point. This allows connection to both other Wireless stations and the wired LAN.

> **Note!**
>
> **The Wireless Print Server does NOT allow both a LAN connection and "Infrastructure" mode.**
> **In "Infrastructure" mode, connecting a LAN cable will disable the Wireless interface.**
> **To use both the LAN and Wireless interfaces, "Ad-hoc" mode must be used.**

Required configuration

	Ad-hoc Mode (Default)	**Infrastructure Mode**
SSID **Default : ANY**	In Ad Hoc mode, the Wireless Print Server will join any group with the same SSID. If there's no Ad Hoc group available in the environment, the Wireless Print Server will create a group using the SSID value as configured.	Must match the Access Point.
Channel **Default : 11**	In *Ad Hoc* mode, the Print Server will scan all Channels to look for compatible groups it can join. If there is no existing Hoc group available, the Wireless Print Server will create the group using its own Channel number.	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.

Chapter 4
Client PC Configuration

4

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

Overview

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

Printing Methods

The Wireless Print Server supports a number of printing methods:

- ***Peer-to-peer Printing*** means that the print jobs are stored (queued) on your PC, and sent directly to the Wireless Print Server when it is available.
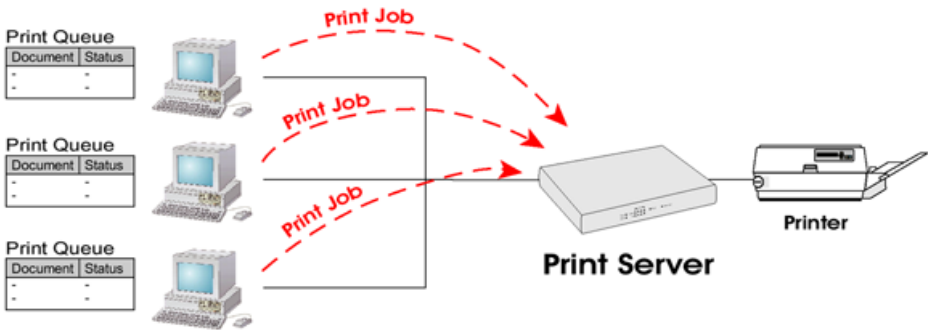

Figure 3: Peer-to-Peer Printing

- ***Server-based Printing*** means that all print jobs are stored (queued) on the Network Server (e.g. Windows 2000 Server) and then sent to the Wireless 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.
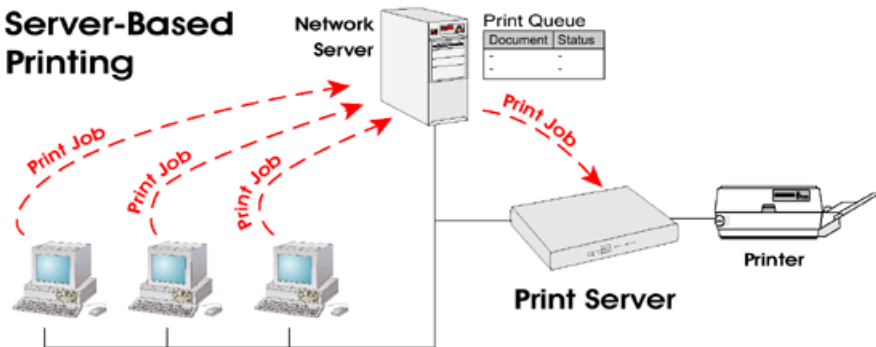 See Appendix B for details of configuring your Network Server to work with the Print Server.

Figure 4: Server-based Print 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 Wireless Print Server can not store files, large print jobs may cause problems.

- *AppleTalk* is also supported, and normally no configuration of the Wireless Print Server is required. See the Macintosh section of this chapter for details of client configuration.

Which printing method should I use?

- If using Windows 95, 98, NT, Me, 2000, or XP, the easiest method to use is *Peer-to-peer Printing*.

- 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 *Peer-to-peer Printing* and SMB printing. MS-DOS programs can use the SMB printer, Windows programs should use *Peer-to-peer Printing*.

- If your LAN has Network Servers (e.g. Windows NT, Windows 2000 Server) use the method advised by your Network Administrator. The Wireless Print Server can print via a queue located on a Network server, if desired.
  See Appendix B for details of configuring your Network Server to work with the Print Server.

- **Unix** users - refer to Appendix B.

- **Macintosh** users - refer to the Macintosh section of this chapter.

Checking your Network Protocols (Windows 9x)

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

- If using the *Peer-to-peer Printing*, the installation program will check this for you.

- If using other methods, you must check manually, as follows:

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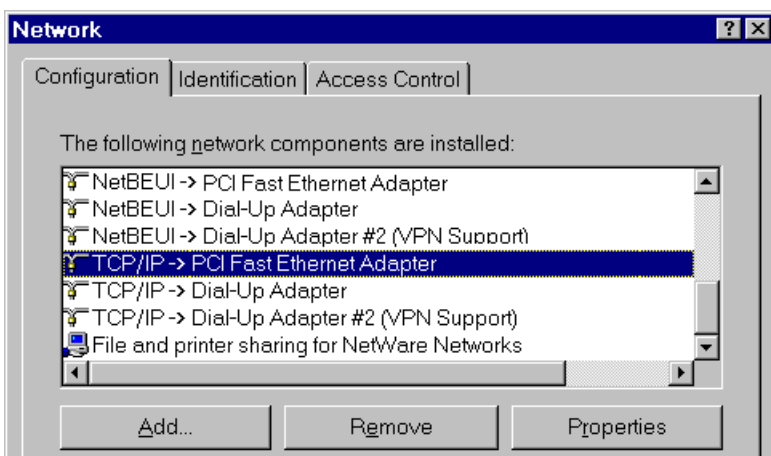

Figure 5: Network Configuration

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

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

2. If neither line is present:

- Install the NetBEUI protocol by selecting *Add - Protocol - Microsoft - NetBEUI - OK*. You may be prompted for your Windows CD-ROM.
- If required, you can also install TCP/IP. However, depending on your LAN environment, TCP/IP may require further configuration.

3. If either protocol is already installed, proceed with installation.

Windows Peer-to-peer Printing

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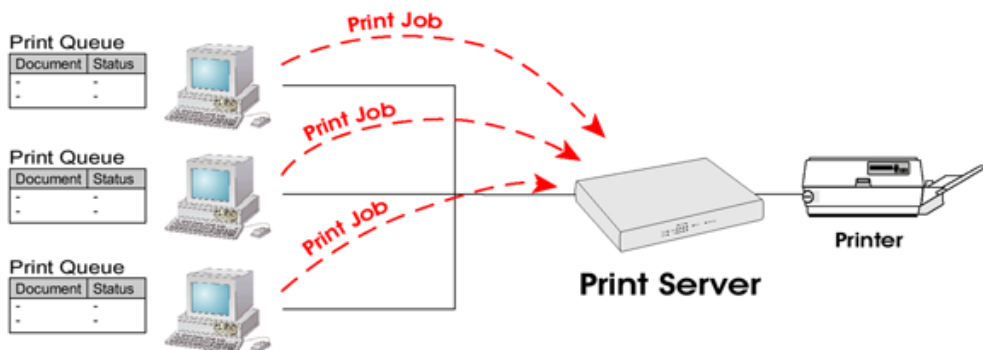

Figure 6: Peer-to-Peer Printing

Windows 2000 & XP 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 Setup

The recommended printing method is to use LPR, as follows:

1. Open your *Printers* folder, click on *Add a Printer* and click Next to Start adding a printer to your PC

2. Select *Local printer* option as shown in the figure 7 below and click Next to proceed
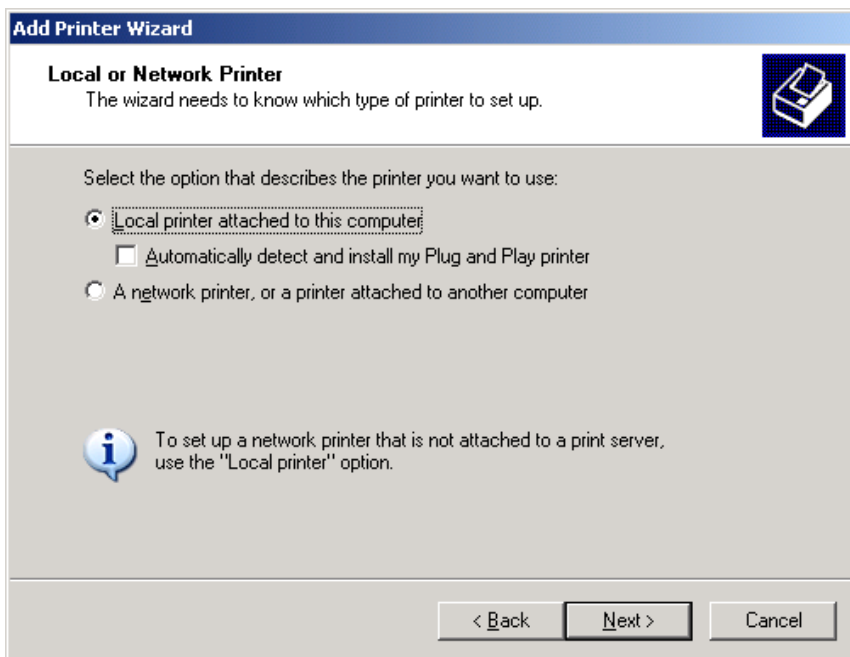

Figure 7: Local printer

3. Choose *Create a new port* and select *Standard TCP/IP Port*, and click Next to proceed
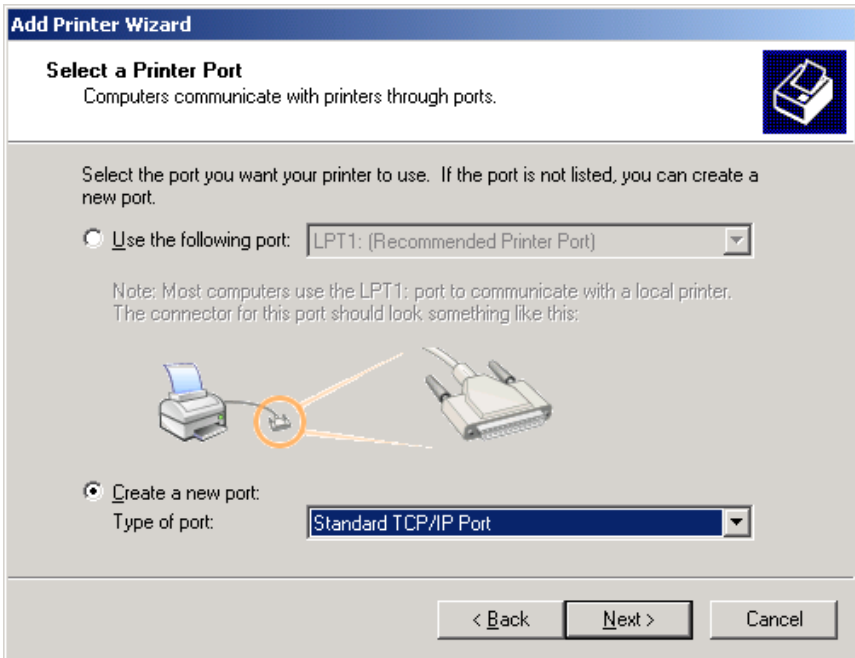

Figure 8: Create new Port Screen

4. Enter the *IP Address* of the Print Server in the *Printer Name or IP Address* field, then click *Next*.
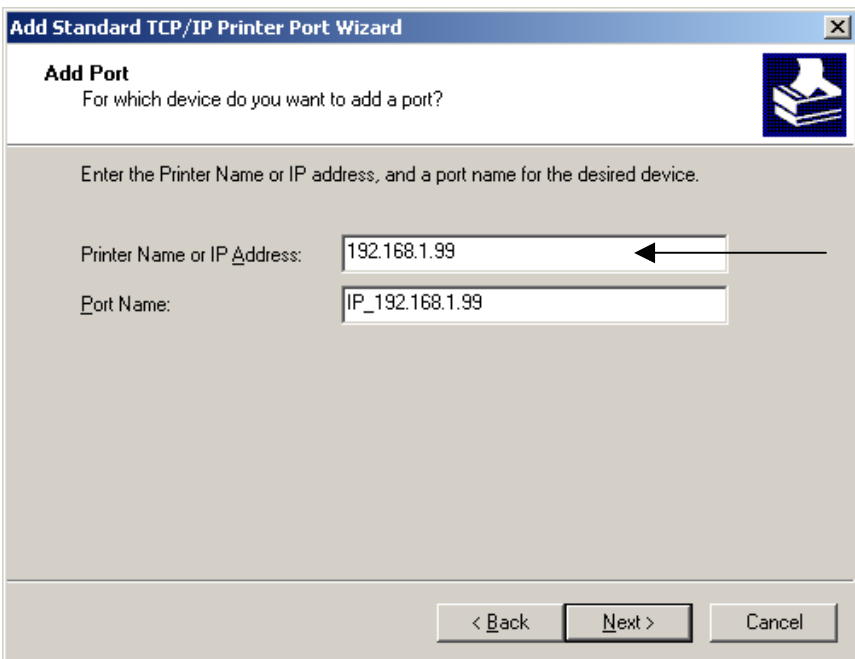

Figure 9: Enter Print Server IP address

5. On this screen, select *Custom*, and click the *Settings* button.
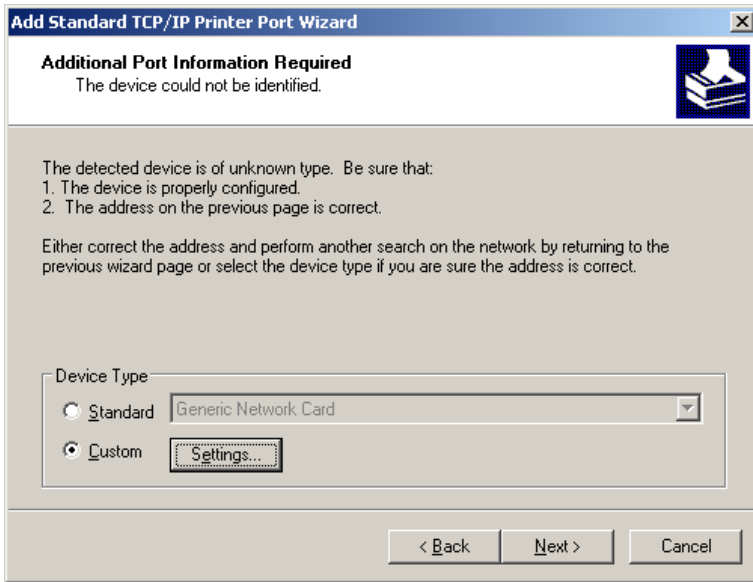
Figure 10: Custom Screen

6. On the *Port Settings* screen:
   - Choose *LPR* in the *Protocol* section
   - Enter a *Queue name (L1 for Parallel port, L2 for USB port)*
   - Ensure the *LPR Byte Counting Enabled* setting is **Enabled**.
   - Click OK to confirm your changes, then click *Next* to continue.

Figure 11: Port Settings Screen

7. Follow the prompts to complete the Wizard.

8. Go back to Printer folder, click on the new created printer and right-click on the printer icon and select *Properties*

9. Go to the *Ports* tab, disable Bi-Directional Support and click on OK to complete the installation
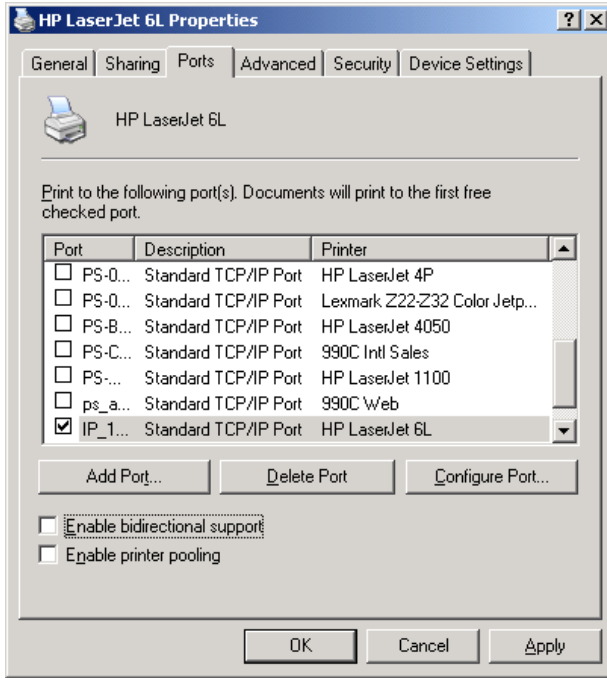
Figure 12 :Ports Tab - Bidirectional Support
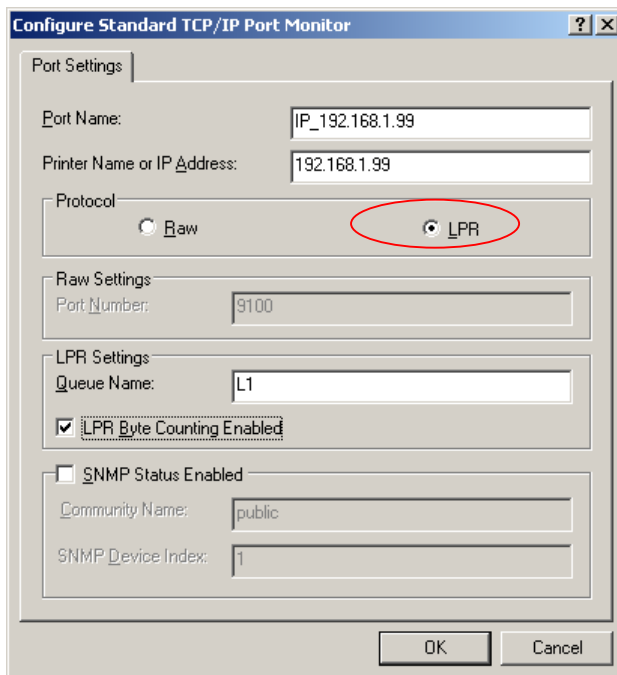
Windows 9x/ME Setup

Before performing the following procedure, the Wireless Print Server must be installed on your LAN, and configured as described in Chapter 3. Both the Wireless 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 SETUP.exe in the root folder.

2. Click *Installation* button, then select the *User Install*.

Figure 13: Installation Screen

3. 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.)

4. The *Print Driver Setup* will then run.

In future, you can use *Start - Programs – Print Server Utility – Printer Driver Setup* to run the program again.

PTP Printer Port Setup

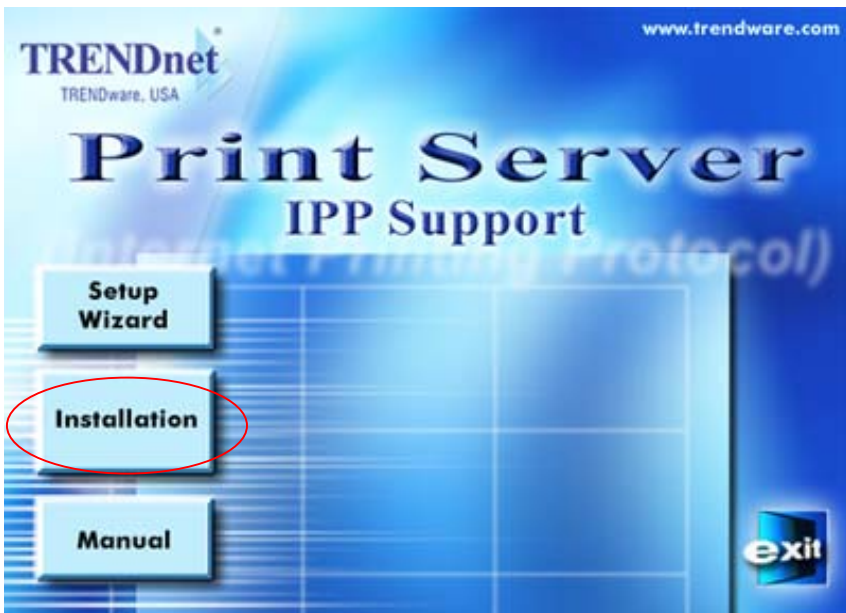1. The program will search for Printer Servers on the network, and a screen like the following will be displayed.

   - If desired, click *Refresh*.
   - The name of the attached printer will be displayed if possible. If "No printer" is displayed, check that the printer is properly connected and powered on.
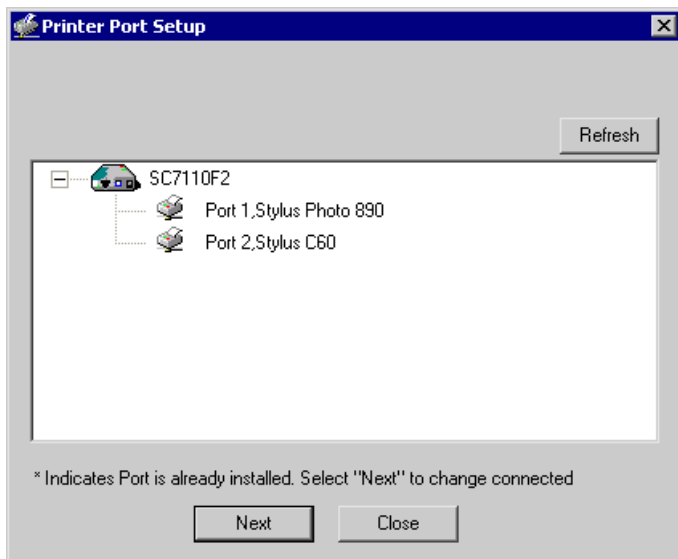
Figure 14: Print Port Setup (Peer-to-peer Printing)

If your Wireless Print Server is not listed:

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

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2. Select the desired port on a Wireless Print Server (Port 1: Parallel port, Port 2: USB port), then click *Next*. A pop-up message will inform you if the port has been created successfully.

Note! **If you see the following error message, either install Internet Explorer 4 or later, or follow the procedure in the "Trouble Shooting - Windows" section of Chapter 8.**
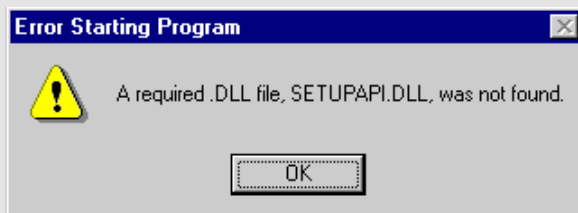
3. The printer port will be created, and a screen like the following will be displayed.

Figure 15: Configure Printer Port

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

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

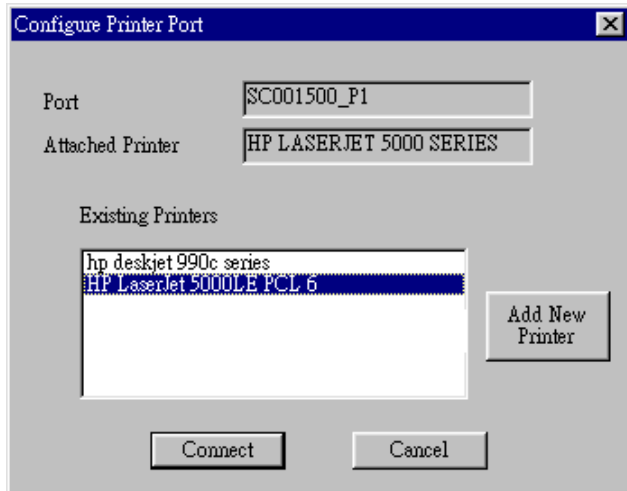   - Select the correct Printer Manufacturer and Model, or use the "Have Disk" option if appropriate.
    - We recommend changing the Printer name to indicate which device is on.
      (e.g. HP2100 on SCA43600_P1)
    - If prompted about Sharing the printer, do NOT enable Sharing.
    - When the Printer installation is finished, it will be listed in the *Configure Printer Port* screen above. Select it and click *Connect*.

5. Installation is now complete. You can now print using this printer.

    - To install additional Printers, repeat steps 4.
    - Use the *Start* menu to run this program in future. The default installation is *Start - Programs – Print Server Utility - Print Driver Setup*.

Note:

If using the Epson Spooler Manager, this program must be disabled, as follows:

1. Run the Epson Spooler Manager.
2. Select "Queue Setup" from the menu.
3. Click "Use Print Manager for this port".
4. Click "OK" to exit.

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

Advanced Port Options

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

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

An example screen is shown below:
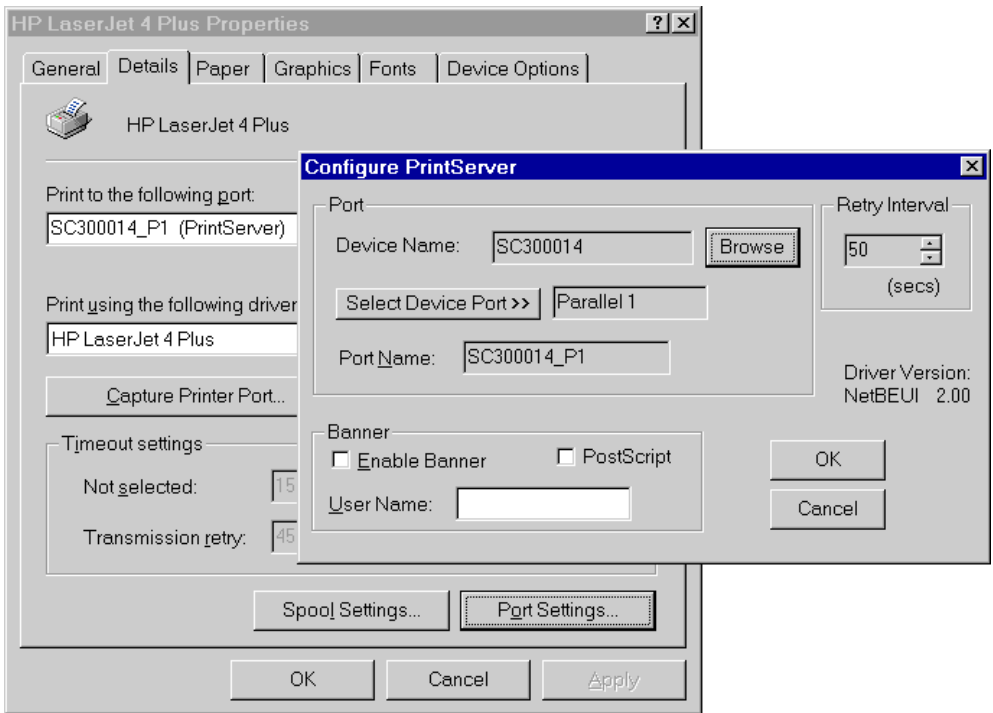
Figure 16: Port Settings (Peer-to-peer Driver)

Items shown on this screen are as follows:

Port	If desired, click *Browse* to select a different Wireless 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 Wireless Print Server to establish a connection when the printer is busy. Increase this value if you get too many warning messages.

Windows SMB Printing

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

1. Double-click the *Network Neighborhood* icon on the desktop.

2. On the *View* menu, select *Details*.

3. Locate the desired Wireless Print Server, as shown below:
   - If it is the same Workgroup as your PC, it will be listed on screen.
   - If it is in a different workgroup, double-click *Entire Network*, then double-click the appropriate Workgroup to open it.
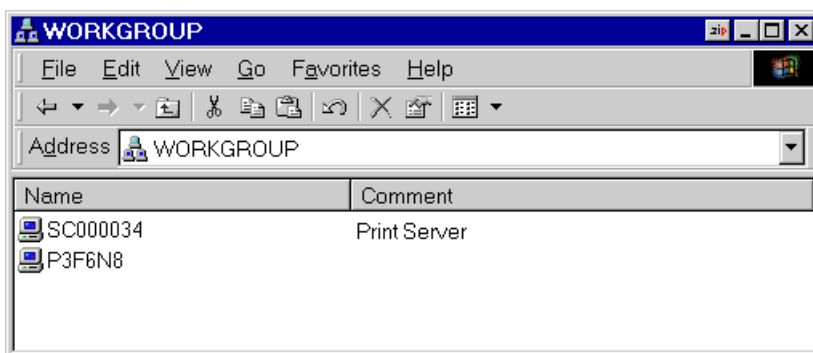
Figure 17: Network Neighborhood

4. Double-click the Wireless Print Server icon to view a Printer icon for each printer port. The "Comment" field may indicate what type of printer is connected to the port.

5. To install a printer, right-click the desired printer icon, and choose "Install", as shown below. This will start the *Add Printer* wizard.
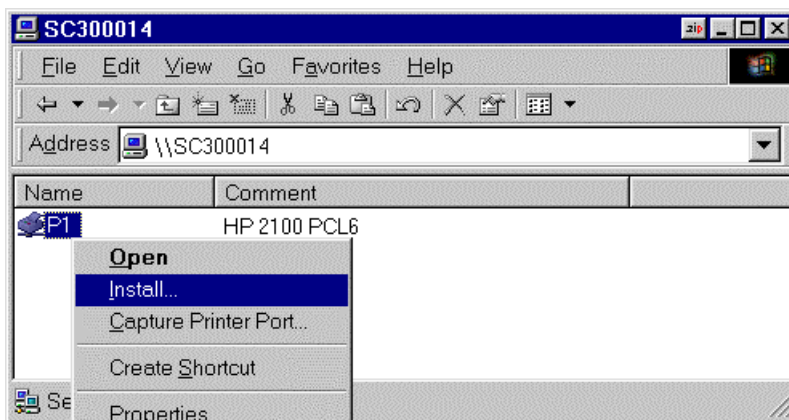
Figure 18: Install SMB Printer

6. Follow the prompts to complete the installation.
   - For information about the question "Do you print from MS-DOS programs?", see *Printing from MS-DOS Programs* below.
   - Select the Printer Manufacturer and Model to match the printer connected to this port on the Wireless 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 Printing* instead.

Printing from MS-DOS Programs

Windows can redirect print data from a parallel port on your PC (e.g. LPT1) to a network printer. This redirection is called "Capture Printer Port", and is useful for MS-DOS programs. The MS-DOS program is configured to use LPT1 (parallel port 1 on the PC), but Windows "captures" the print data and sends it to the network printer.

Capture Settings - Windows 98/ME

1. Select *Start - Settings - Printers* to open the **Printers** folder.

2. Right-click the desired Printer, and select *Properties*,
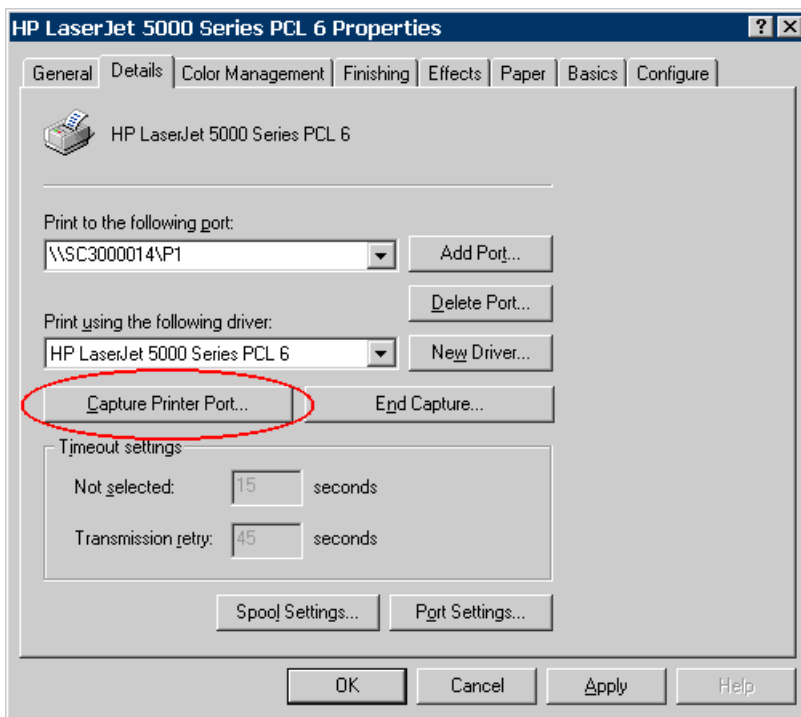
Figure 19: Capture Printer Port - Windows 98/ME

3. On the *Details* tab, shown above, click the *Capture Printer Port* button to view the *Capture Printer Port* dialog, as shown below.
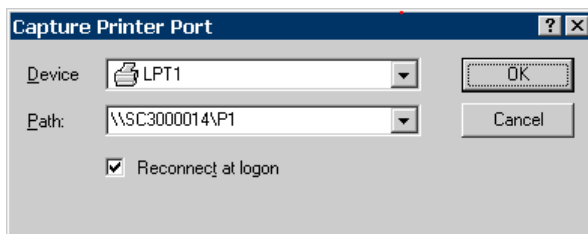
Figure 20: Capture Dialog - Windows 98/ME

4. On this dialog:

   - Select the Device (port) on the PC to be captured. Normally, this will be LPT1 (parallel port 1).

   - Enter or select the Path to the printer. This will be the same as the path shown as *Print to the following port* on the *Printer Properties* window.

   - Check the *Reconnect at logon* checkbox. If this is not done, the capture setting will be lost when Windows is restarted.

Capture Settings - Windows 2000/XP

1. Login as Administrator.
2. Open the command prompt window.
3. Enter the following command to capture data from LPT1 (parallel port 1)

   ```
   net use lpt1 \\server_name\printer_name /persistent:yes
   ```

Where `\\server_name\ printer_name` is replaced with the actual path to your printer.

e.g.

   ```
   net use lpt1 \\SC3000014\P1 /persistent:yes
   ```

4. Close the command prompt window.

To terminate this capture, use the following command at the command prompt:

   ```
   net use lpt1 /delete
   ```

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), and is invisible to your PC.

If your Network Administrator chooses to use this system, the required setup procedure on **each Windows client** is 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*, click the *Browse* button, and locate the Server and Printer (or Print Queue) which your Network Administrator advised you to use.

4. Click OK, then *Next*.

5. Select the correct printer Manufacturer and Model, as advised by your Network Administrator, and click *Next*.

6. Follow the prompts to complete the Wizard.

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

Macintosh (AppleTalk)

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

Normally, no configuration is required.

Software Requirements

System 9.x OS or newer.

AppleTalk Setup

1. Click the apple icon and choose *Control Panel - AppleTalk*.

2. Ensure that *Ethernet* is selected under *AppleTalk Connection*.

3. Click *Chooser*. The Chooser panel will open.

4. 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.

5. Choose a PostScript printer from the list.

6. Click *Create* and it will search PPD automatically.

7. Select a printer description from the list.

8. Click *Select*.
   Configuration is now complete.

Printing

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

Advanced Setup and Management

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

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.
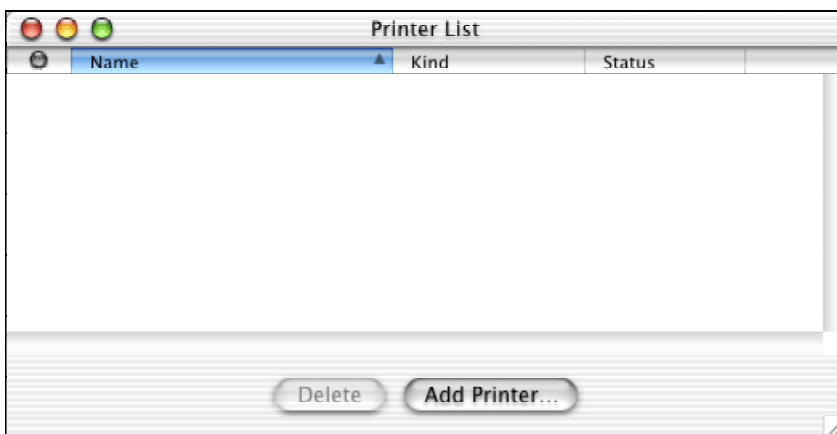

Figure 21: Printer List

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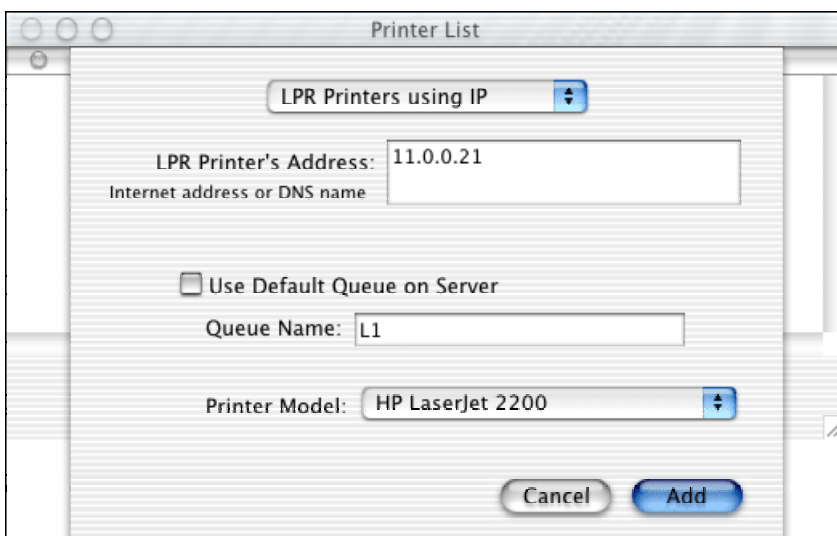
3. Choose *LPR Printers Using IP*.

Figure 22: LPR Screen

4. Enter the IP address of the Print Server in the *LPR Printer's Address* field, and enter the *Queue Name* (L1 for the parallel port, L2 for the USB port).

5. Select the *Printer Model* from the drop-down list.

6. Click *Add*.
   Configuration is now complete.

Chapter 5

BiAdmin Management Utility

5

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

Requirements

This program requires:

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

Additional Recommendations:

- Screen resolution of 800 * 600 or greater.

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 BiAdmin installation
  - BiAdmin is always installed if the *Administrator* option is chosen.
  - If using the *Custom* option on the CD-ROM, select *BiAdmin*.

Operation

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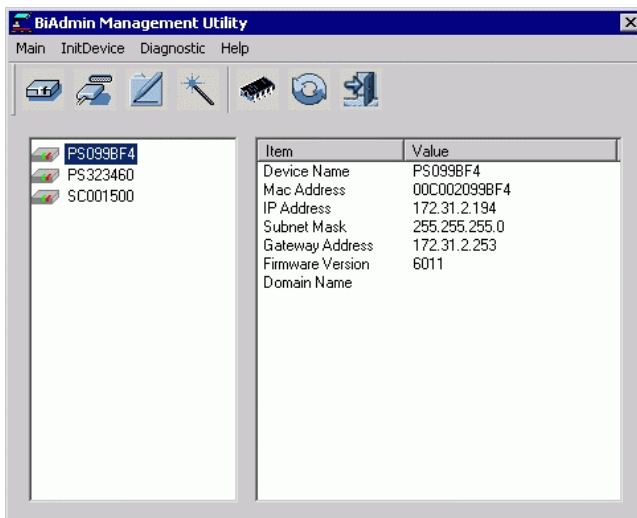
Main Screen

Figure 23: BiAdmin 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.
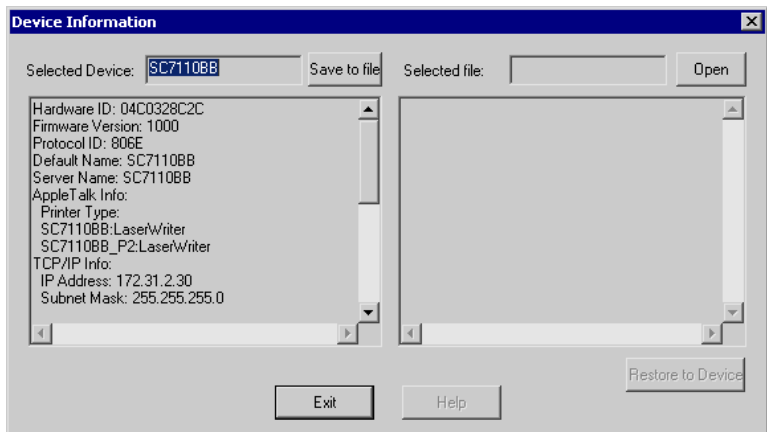
Printer Status

Menu equivalent: *Main - Printer Status*

After selecting this icon, a *Detail* button will be available to show more information about the printer.
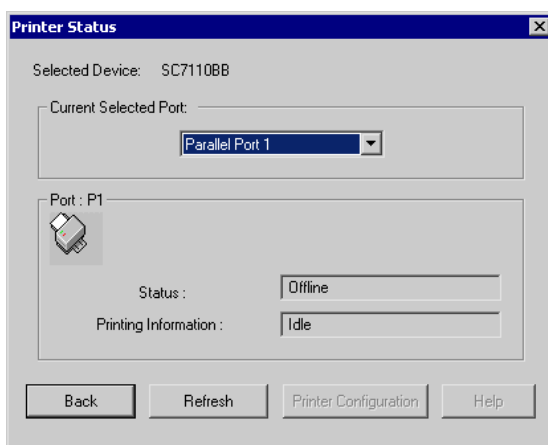
Select the desired port from the drop-down list to display the current status of the printer attached to the port. Possible states are:

- **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

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.)

Figure 24: System Screen

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).

The TEW-P1U1P also supports the Auto-IP function. If the TEW-P1U1P is set to *Dynamic IP Address*, but there's no DHCP server found on the network, the TEW-P1U1P will get an IP from the range of 169.254.1.1 ~ 169.254.254.254 automatically. In this case, even though the TEW-P1U1P was initialized with an Auto-IP, it will change to DHCP whenever a DHCP server is detected.

Figure 25: TCP/IP Screen

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.

Figure 26: AppleTalk Screen

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.

Figure 27: NetBEUI Screen

Internet Printing Tab

The Internet Printing feature allows you to send print jobs to the Wireless Print Server using Internet E-mail.

Please see *Internet Mail Printing Configuration* for details of using this feature.

Figure 28: Internet Printing Screen

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. (By default, L1 is the parallel port, and L2 is the USB port)
- **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.

Figure 29: Port Screen

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.

Figure 30: Wireless Screen

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 "ANY", 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, 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. • **Ad-hoc** mode is used when there is no Wireless Access Point, and each Wireless station communicates directly with other Wireless stations. • **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.
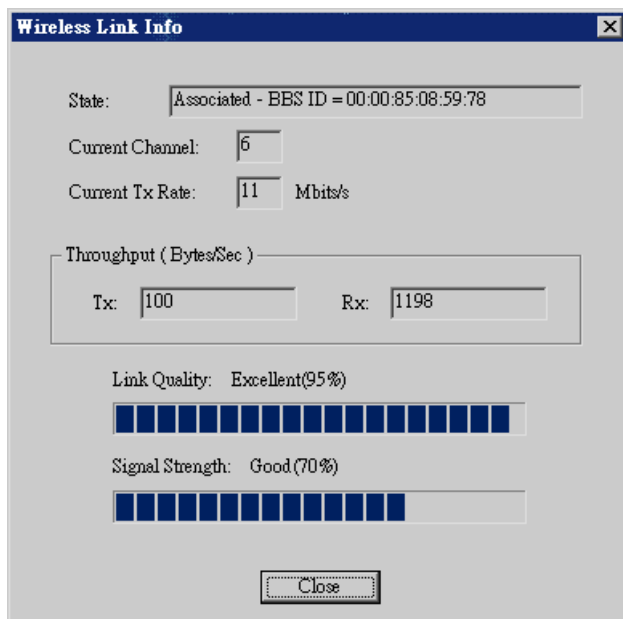
Figure 31:Link Info Screen

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" mode.

Chapter 6
Web-Based Management

6

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

Overview

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

Preparation

Because it supports dynamic IP Address allocation using DHCP, BOOTP, or RARP, the Wireless 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 Wireless Print Server.

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

- Use the **Setup Wizard**, **BiAdmin** or another Wireless Print Server utility to allocate a valid IP Address to the Wireless Print Server.

- Add an entry to the **arp** table to associate the hardware address of the Wireless 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 Wireless Print Server.
`00:c0:02:xx:xx:xx` is the hardware address of the Wireless 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 Wireless Print Server is shown on a sticker on the base of the device.

Connecting to the Wireless Print Server

1. Start your Web Browser.

2. In the *Address* box, enter *HTTP://* followed by the IP Address of the Wireless Print Server. e.g.

   ```
   http://192.168.0.21
   ```

3. You will then be prompted for the password. If no password has been set, just press ENTER.

4. Use the menu bar on the top of the screen to move about. Remember to save each screen before changing to a different screen.

Configuration Screens

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

AppleTalk

Figure 32: AppleTalk Screen

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

NetBEUI

Figure 33: NetBEUI Screen

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

TCP/IP

Figure 34: TCP/IP Screen

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

Configure Server

Figure 35: Configure Server Screen

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

Wireless Configuration

The settings on this screen must match the other Wireless stations in order for communication to occur.

Figure 36: Wireless Screen

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 `ANY`. **Note! The SSID is case sensitive.**
Channel No.	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. • **Ad-hoc** mode is used when there is no Wireless Access Point, and each Wireless station communicates directly with other Wireless stations. • **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 unavailable.)
- **Status** - the current status of the printer (On-line, Off-line, Out of paper)
- **Printing Information** - this will show either *Idle* or *Printing*.

Logical Printers

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

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

Internet Printing

See *Internet Mail Printing* in Chapter 7 for details of this feature.

Chapter 7
Special Features

7

This chapter covers the special features of the Wireless Print Server.

Overview

The Wireless Print Server has two special features:

- Wireless Print Servers support IPP (Internet Printing Protocol).
- Support the proprietary *Internet Mail Printing* system.

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

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

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

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

Installing from the CD-ROM

1. Insert the CD-ROM in your drive. If the program does not start automatically, run the SETUP program in the top-level folder.

2. Follow the prompts until you reach the *Select Installation* screen, and select *IPP Client*.

3. At the next screen, select the *Install IPP Client* option.

4. Click *Next*, and step though the remaining screens to complete the installation.

Installing using IPP_CLIENT.EXE

1. Run this program to unzip the included files.

2. The IPP Setup program will then run.

3. Follow the prompts to complete the installation.

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

1. Run the "Add IPP Port" program entry created by the installation. A screen like the following will be displayed.
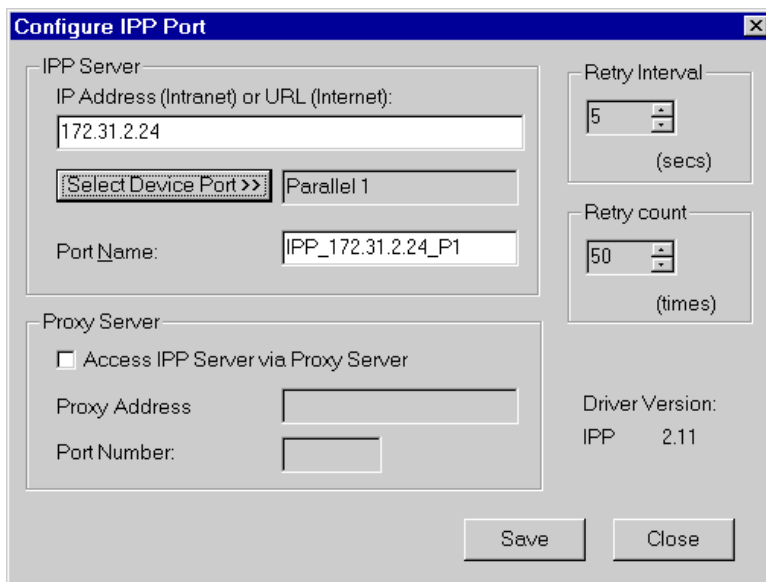
Figure 37: IPP Port

2. If Internet access from your location is via a Proxy Server, check *Access IPP Server via Proxy Server*, and enter details of your Proxy Server. (This will be the same as your Browser configuration.)

3. Enter the IP Address or URL of the IPP Server.

4. Click *Select Device Port* to view the available ports on the IPP Server, and select the appropriate port. A connection to the IPP Server will be established at this time.

5. Click *Save* to create the IPP port on your system. You will see a message confirming that the port has been created, then the following dialog:
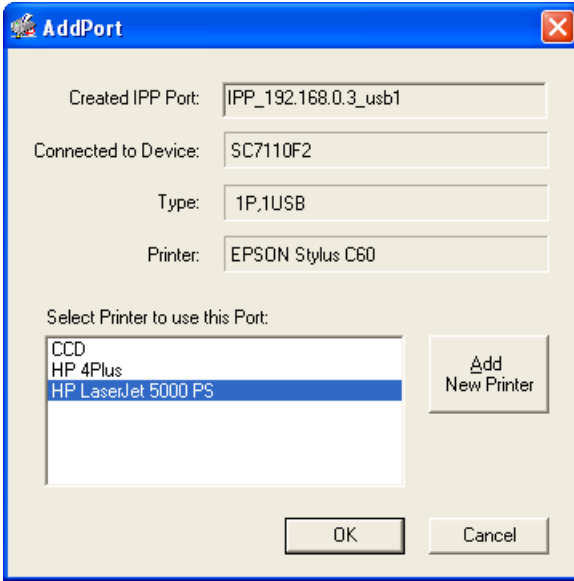
Figure 38: Select Printer for IPP Port

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

   OR

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

Installation is now complete.

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

Changing the IPP Port Settings

After the IPP port is created, you can reach the screen shown in Figure 37: IPP Port using the Windows *Port Settings* button:

1. Open the *Printers* folder (*Start - Settings - Printers*)

2. Right-click the IPP Printer, and select *Properties*.

3. Locate and click the *Port Settings* button (*Details* or *Port* tab, depending on your version of Windows).

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

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

IPP Client Setup - Windows 2000/XP

Windows 2000 has its own IPP Client, and there is no need to install the supplied IPP Client Software. To use Windows 2000's IPP Client with the 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.
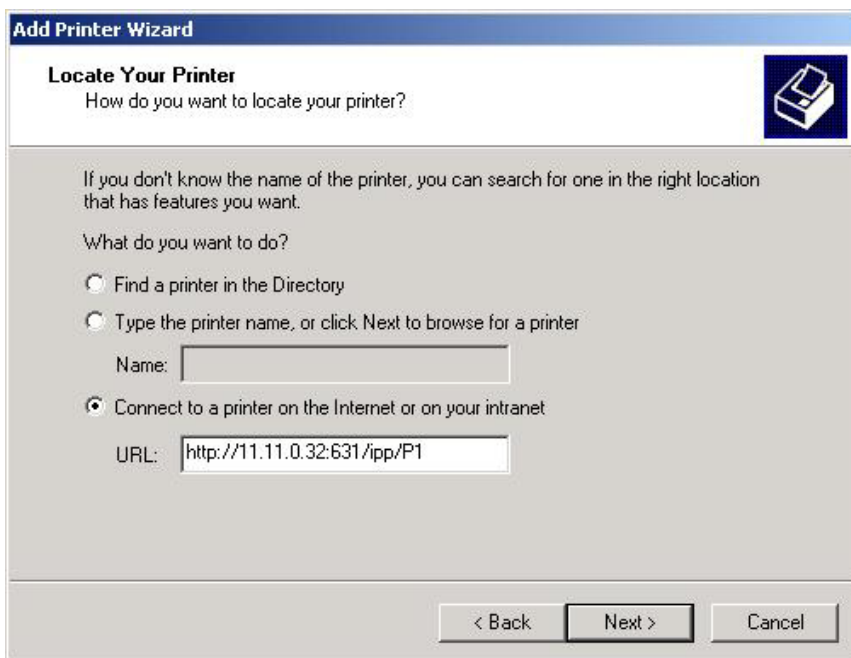
Figure 39: Windows 2000 - Locate your Printer

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

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

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

4. If the connection can be established, and the printer on that port is on-line, the following dialog will be displayed.
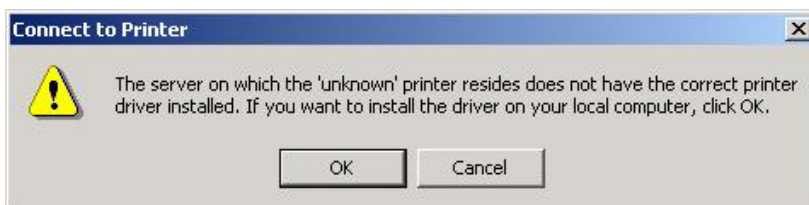
Figure 40: Windows 2000: No printer driver

5. Click "OK", and then select the printer manufacturer and model to match the printer connected to the port on the IPP Server.

6. Click "Next", and complete the Wizard.
   The IPP printer is now ready for use.

Using IPP Printers

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

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

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

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

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

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

Internet Mail Printing

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

- **TCIP/IP Protocol.** The LAN must use the TCP/IP protocol.
- **Mail Server Access.** The Wireless Print Server must be able to access the Mail Server using a single IP address.
- **Mail Account.** The Wireless 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 Wireless 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, 98, or ME
  - Microsoft Windows NT 4.0 or Windows 2000

Internet Mail Printing Configuration

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

The supplied **BiAdmin** utility program, or the Web 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 Wireless Print Server.
Mail Account	The name of the E-Mail Account used by the Wireless Print Server.
Mail Account Password	Enter the password for the above Mail Account here.
Check Mail Interval	Sets how often to check for mail.
Redirect Mail Account	Jobs which can not be printed will be sent to this account. If blank, unprintable jobs will be discarded.
Default Printer Port	Printer number for all Internet print jobs. Only one port can be selected. Users on the LAN can also use this port.
Printer Model	This text field identifies the printer used for Internet printing. This value is sent to remote users upon request.
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.
Print Banner	If YES (default), a banner page is printed to identify the owner of the print job.
Mail Response when Printed	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.

User Software

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

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

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

Installation - User Software

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

Figure 41: InterNet Printer Port

4. The following data must be provided.

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

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

Using the new Port

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

1. Select the Printer which matches the remote printer, then choose *Properties*, as shown in the example below.
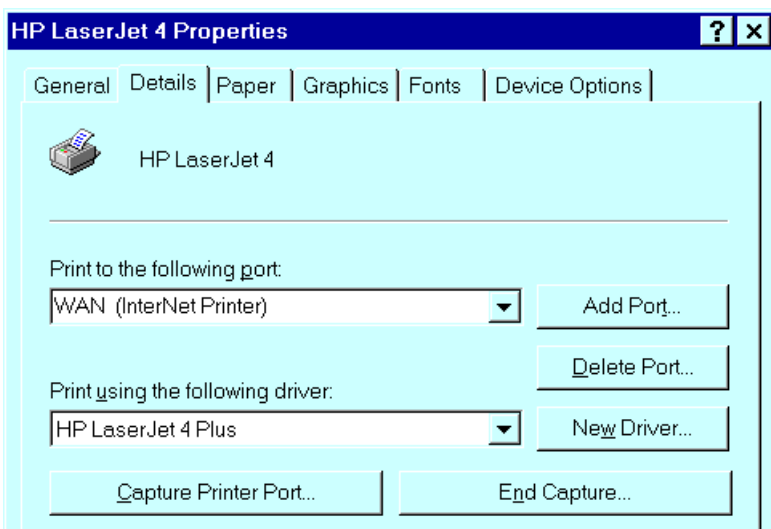
Figure 42: InterNet Printer Properties

2. Select the new port - WAN (InterNet Printer) in the example - as the port for this printer.

   - If you do not have the correct printer driver, or you wish to create another printer using an existing driver, use the Windows *Add Printer* facility.

   - Using the Windows *Port Settings* or *Configure Port* facility will reveal the same *Configure Port* screen shown in Figure 41: InterNet Printer Port.

- 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 Wireless Print Server. If this does not match the printer driver you are using, install the correct printer driver.

Printing through the Internet

1. Create or open the document you wish to print.

2. Select the Printer connected to the InterNet Printing Port.

3. If you do not have a permanent Internet connection, establish a connection now. (**Note**: The InterNet Printing Port will NOT establish a dial-up connection, but it will send the E-Mail the next time you are connected.)

4. Print the document.

5. The InterNet Printing Port will generate an E-Mail and send it to the remote printer. The document will be encoded and sent as an attachment to the E-Mail. You will see a progress screen similar to the example below:

Figure 43 InterNet Printing Progress

6. Close the Internet connection if you opened it in Step 3.

7. If the "Notify after print job" option is set, you will receive an E-Mail when your job is printed.

Chapter 8
Troubleshooting

8

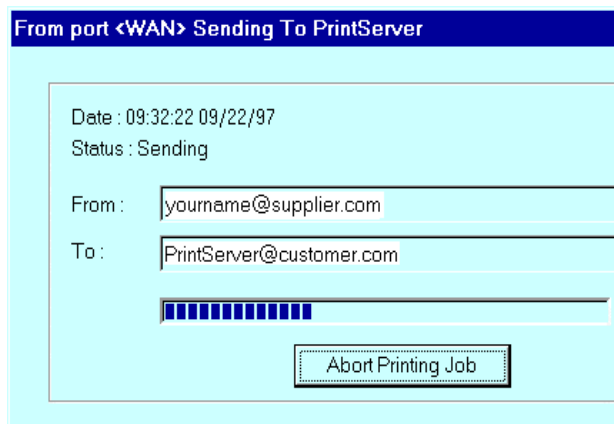*This chapter describes some problem situations, which may arise, and the solutions to them.*

Overview

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

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

Hardware & LAN Problems

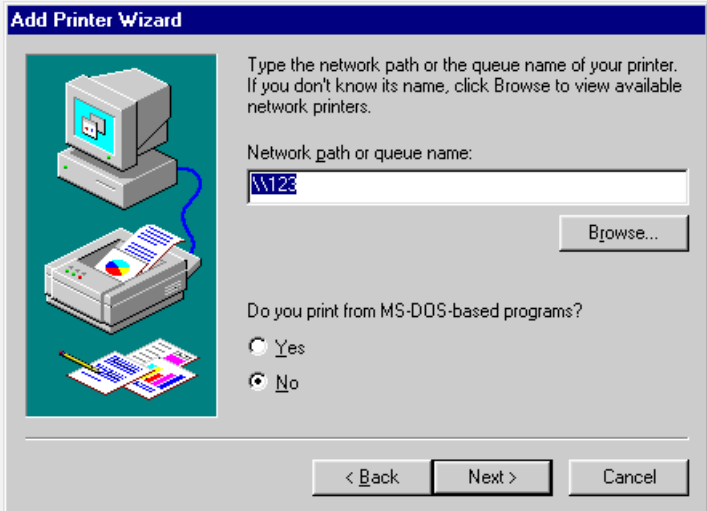| Problem No. 1	**All the Wireless Print Server's LEDs are off.**
Solution No. 1	Check the power supply or power connection.
Problem No. 2	**Wireless Print Server's status light continuously stays lit.**
Solution No. 2	Reset Wireless Print Server by unplugging the power supply and plugging it back in.
Problem No. 3	**Wireless Print Server's status light and power light stay on continuously and do not turn off.**
Solution No. 3	Reset the Wireless Print Server by unplugging the power supply or by pushing the reset push button, if fitted.
Problem No. 4	**The Wireless Print Server unit can not be found on the LAN, so configuration is not possible.**
Solution No. 4	• If using the LAN connection, check the Hub or Switch. The link LED for the port to which the Wireless Print Server is connected should be ON. If it is Off, there is a problem in the network cable. • If using a Wireless - only network, the Printer Server must match the settings on other Wireless stations. Use the wired LAN connection to check the Wireless configuration. Remember that you can't just plug in the LAN cable. You must power off the Print Server, connect the LAN cable, then power on. • Check the LEDs on the Print Server. In Infrastructure mode, either the LAN or WLAN LED should be On. In Ad-hoc mode, both the LAN and WLAN LEDs should be On. **If using TCP/IP:** • Ensure that there are no routers between the Wireless 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 browse the network.)

Problem No. 5	**I am using DHCP, and getting an IP Address conflict involving the Wireless Print Server.**
Solution No. 5	If the Wireless Print Server is left on, but the DHCP server is turned off, then the Wireless Print Server will retain its IP Address without the DHCP Server being aware of it. Simply reset the Wireless 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 Wireless 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 Wireless Print Server with the same name may have received your print job. Use the PSTOOL to reconfigure your Wireless Print Server name and ensure all Wireless 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, Wireless 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 Wireless Print Server to use the same protocol as the printer and computer.

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 Wireless 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.
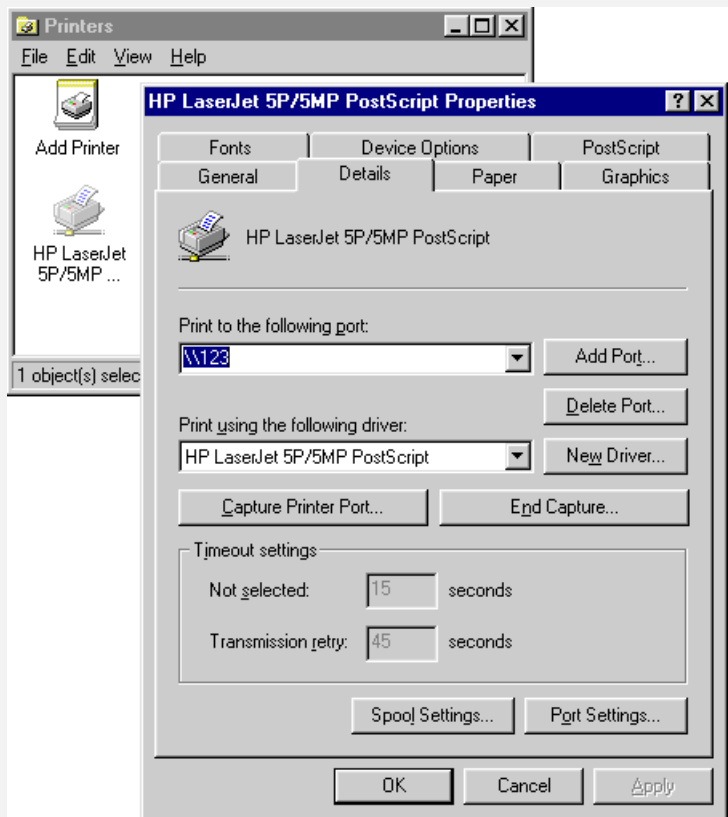
7. Click the *Add Port* button. On the resulting screen, select *Other*, then *Printer Server*, as the port to add, as shown below.
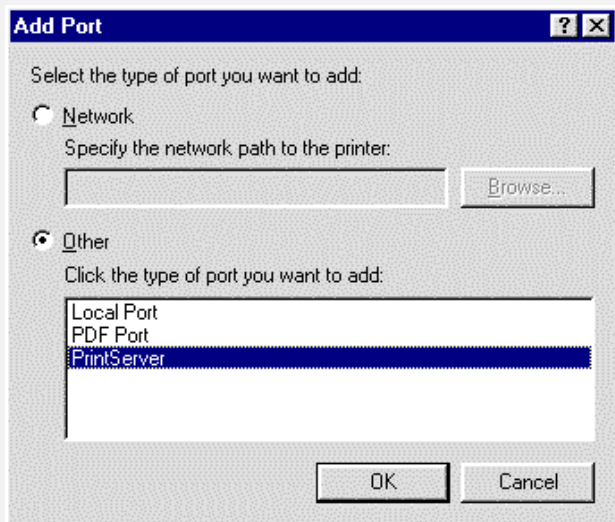
8. Click OK to see the *Print Port Configuration* screen, as shown below.
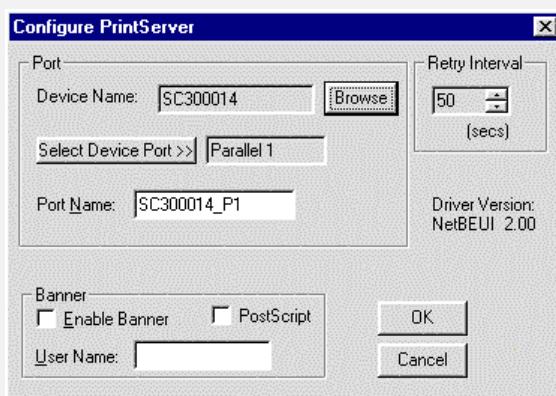
9. Click the *Browse Device* button, select the desired Wireless Print Server, and click OK.

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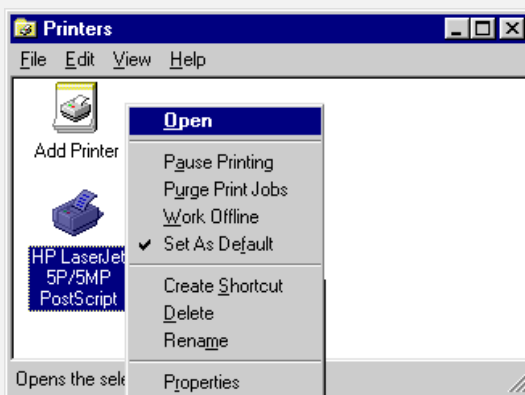
The Printer should no longer be grayed out, and is ready for use.

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 2 above.
	Note: The screens shown in Solution 2 are from Windows 95. Other versions of Windows may look slightly different, but the process is identical. If using Window NT or 2000, do NOT enable Sharing for the printer.
Problem No. 4	When printing from some software applications such as Power Point, it takes a long time and the print out is incorrect.
Solution No. 4	The problem is due to the printer, which is being configured to **Start printing after the first page is spooled**. To change this setting:

- Go to *Control Panel - Printers* and click on your printer.
- Then select *File - Properties - Details*.
- When the Details screen appears, click the *Spool Settings* button.
- When the Spool Settings dialogue box appears, choose *Start printing after last page is spooled* and click OK.

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

Appendix A
Specifications

A

General Specifications

TEW-P1U1P Wireless Print Server	
Power Consumption	5.5w max.
External Power Adapter	12V DC
LEDs	4
USB Port (1.1)	1
Parallel Port	1
Ethernet Interface	10/100BaseT
Wireless Interface	IEEE802.11b WLAN standard
FCC / CE	FCC, CE. Class B

Environmental Specifications	
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

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	AppleTalk
TEW-P1U1P	√	√	√

Feature Support

Model	HTTP Setup	E-mail Printing	IPP Support	AutoIP	FTP/Telnet Support
TEW-P1U1P	√	√	√	√	

Appendix B
Network Server Configuration

B

Windows NT4.0 Server

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

- If it is already installed, add a TCP/IP Remote Printer, as described below.
- Otherwise, install TCP/IP printing support, then add a TCP/IP Remote Printer.

Adding TCP/IP Printing Support

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

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 Wireless 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 for Parallel Port, L2 for USB Port).

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 2000/2003 Server

1. Start the *Add Printer* Wizard, select *Network Printer*, then click *Next* to browse for the Wireless Print Server.

2. Locate and double-click the Wireless Print Server, select the desired port (L1 for Parallel Port, L2 for USB Port), and click *Next*.

   A message like the following will be displayed:
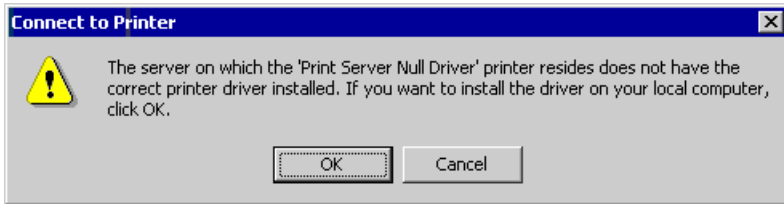
Figure 44: Windows 2000 Message
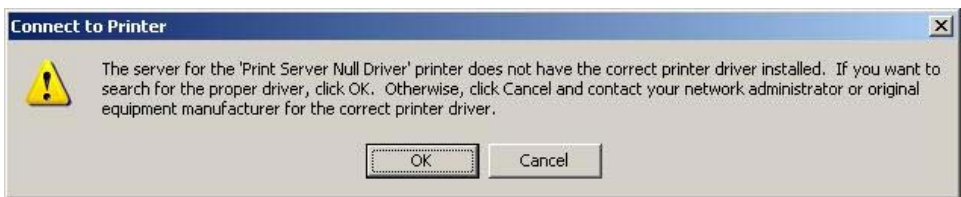
Figure 45: Windows2003 Message

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*.

Unix Systems

Your Wireless Print Server supports the LPD Unix printing method, which is supported by all common Unix systems.

You must configure both the Wireless Print Server itself and your Unix system, as described in the following sections.

Wireless Print Server IP Address Configuration

Because it supports dynamic IP Address allocation using DHCP or BOOTP, the Wireless 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 Wireless Print Server.

- Configure your **BOOTP Server** (if you have one), to provide an IP address to the Wireless Print Server, then restart the Wireless Print Server.

- Use a Windows platform and run the **Setup Wizard** or **BiAdmin** utility to allocate a valid IP Address to the Wireless Print Server.

- Add an entry to the **arp** table to associate the hardware address of the Wireless Print Server with the desired IP address, as follows:

```
arp -s IP_Address 00:c0:02:xx:xx:xx
```

Where:

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

Example

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

You should then assign this IP address to the Wireless Print Server using your Web Browser, as described in *Chapter 6 - Web-based Management*.

Note:

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

Other Wireless Print Server Configuration

The recommended method to configure the Wireless Print Server is to use the Web-based interface, as described in *Chapter 6 - Web-based Management*.

- Ensure that the TCP/IP settings are correct for your network.

- The logical printers (e.g. L1) must be configured correctly to match your system.

LPD Configuration

Configuration for the most common platforms is described below.

LPD on IBM AIX 4.15

Before proceeding, ensure that the Wireless Print Server has been assigned an IP Address. To setup your AIX system for LPD printing, perform the following steps.

1. Add the Wireless Print Server to **/etc/hosts.lpd**, using the name you assigned to the Wireless Print Server.

2. Start the LPD daemon if it is not running, using the following command:

   ```
   start src -s qdaemon
   ```

3. Start the system administration tool **smit** and select *Print Spooling*.

4. Create the required number of queues (one for each logical printer) by selecting:

   Add a Print Queue

   Remote (Printer attached to Remote Host)

   Standard Processing

5. Use the following information:

Field	Entry
Name of queue to add	Use a single-word queue name, which indicates which printer is attached.
Hostname for remote server	Wireless Print Server name as used in /etc/hosts.lpd.
Name of queue on remote server	Logical printer number (e.g. L1) to service this queue.
Type of print spooler on remote server	Use default value. (AIX Version xxx)

6. Ensure that the logical printers are configured in the Wireless Print Server.

7. Print using the following command:

   ```
   lp -d printer_queue file_name
   ```

   Where
   printer_queue is one of the entries used in *Name of queue to add*.
   file_name is the file you wish to print.

LPD on System V

Before beginning LPD Setup, ensure that an IP Address has been assigned to the Wireless Print Server. Keep the following points in mind:

The **remote host name** is the name of the Wireless Print Server.

The **remote printer name** is the print queue name for the Logical Printer. Logical printers also need to be configured on the Wireless Print Server itself.

If your UNIX asks for the LPD type, be sure to identify the service type as BSD. The Wireless Print Server's LPD protocol meets BSD system standards.

In the sample commands shown, *printer_name* is the name of the Print Queue serviced by the Wireless Print Server, and *Spooler_directory* is the name of the directory, which is used to spool the print jobs.

Procedure

Action	Sample Command
Stop Print Services	/usr/lib/lpshut
Add a System Printer	/usr/lib/lpadmin -p *printer_name* -v /dev/null
Restart the Print Services	/usr/lib/lpsched
Enable printing to the new printer device	enable *printer_name*
Start accepting jobs for the new printer device	accept *printer_name*
Create a spooling directory	mkdir /usr/spool/*Spooler_directory*
Make spooling daemon the owner of this directory	chown daemon */usr/spool/Spooler_directory*
Create read/write permissions	chmod 775 */usr/spool/Spooler_directory*
Give permissions to LPD processes.	chgrp daemon */usr/spool/Spooler_directory*
Add remote printer(s)	See following section

Adding Remote Printers

A remote printer is added by inserting the following line in the /etc/printcap file.

The entry is really one line, but can be entered as shown.
Use a TAB character where shown.

```
Printer_name|Remote_Printer_Alias:\
[TAB] :lp=:\
[TAB] :rm=PS_NAME:\
[TAB] :rp=Logical_Printer_name:\
[TAB] :sd=Spooler_directory:\
[TAB] :mx#0:
```

Where:

Printer_name is the Print Queue name used to store jobs for the corresponding logical printer.
PS_NAME is the Wireless Print Server name defined in /etc/hosts.
Logical_Printer_name is the logical printer name on the Wireless Print Server. (e.g. L1)
Spooler_directory is the directory you created in Step 6.

Example:

```
Marketing|RP1_PS123456:\
[TAB] :lp=:\
[TAB] :rm=PS_Rm203:\
[TAB] :rp=L1:\
[TAB] :sd=/usr/spool/Marketing:\
[TAB] :mx#0:
```

Repeat this process for each Logical Printer/Print Queue combination that you wish to create.

LPD on Linux

If using the command line, the procedure is the same as for System V. (above)

On recent Linux distributions, you can use the graphical X-windows interface instead of the command line. The procedure is described below, but may vary according to your version of Linux.

1. Start your X-windows shell.

2. Select *Control Panel*, then *Printer Configuration*.

3. Select *Add*. For the printer type, select *Remote Unix (lpd) Queue*.

4. Use the following data to complete the resulting dialog.

Field	Data
Name	Enter a name for this printer
Spool Directory	/var/spool/lpd/*name_of_printer*
File Limit	0 (no limit)
Remote Host	Name or IP Address of Wireless Print Server e.g. SC3000014 Note: host file entry is required to use the name instead of IP Address
Remote Queue	L*n* Where *n* is the Logical Printer number By default, L1 is port 1, and L2 is port 2 if the Print Server has 2 ports.

5. Save this data, and exit the Printer Configuration. Configuration is now completed, and the printer is now available for use.

LPD on BSD

Before continuing, ensure that an IP Address has been assigned to the Wireless Print Server. Remember the following:

The **remote host name** is the name of the Wireless Print Server.

The **remote printer name** is the logical printer (e.g. L1) on the Wireless Print Server.

If asked for the LPD type, enter the service type as BSD.

In the sample commands shown, *printer_name* is the Print Queue serviced by the logical printer on the Wireless Print Server, and *Spooler_dir* is the name of the directory, which is used to spool the print jobs.

Procedure

Action	Sample Command
Create a spooling directory	mkdir /usr/spool/*Spooler_dir*
Set spooling daemon as owner of this directory	chown daemon */usr/spool/Spooler_dir*
Create read/write permissions	chmod 775 */usr/spool/Spooler_dir*
Give permissions to LPD processes	chgrp daemon */usr/spool/Spooler_dir*
Add remote printer(s)	See below
Start lpc print mechanism	lpc start *printer_name*

Adding Remote Printers

A remote printer is added by inserting the following line in the /etc/printcap file.

The entry is really one line, but can be entered as shown.
Use a TAB character where shown.

```
Printer_name|Remote_Printer_Alias:\
[TAB] :lp=:\
[TAB] :rm=PS_NAME:\
[TAB] :rp=Logical_Printer_name:\
[TAB] :sd=Spooler_directory:\
[TAB] :mx#0:
```

Where:

> *Printer_name* is the Print Queue name used to store jobs for the corresponding logical printer.
> *PS_NAME* is the Wireless Print Server name defined in /etc/hosts.
> *Logical_Printer_name* is the logical printer name on the Wireless Print Server. (e.g. L1)
> *Spooler_directory* is the directory you created in Step 6.

Example:

```
Marketing|RP1_PS123456:\
[TAB] :lp=:\
[TAB] :rm=PS_Rm203:\
[TAB] :rp=L1:\
[TAB] :sd=/usr/spool/Marketing:\
[TAB] :mx#0:
```

Repeat this process for each Logical Printer/Print Queue combination that you wish to create.

Printing using LPD

For LPD printing instructions, refer to your UNIX manual. The following example is for a BSD system:

```
lpr  -P printer_name filename
```

Where:
printer_name is the name of the Print Queue defined on the Unix host.
filename is the name of the file you wish to print.

Example:

```
lpr  -P Marketing  /etc/hosts
```

In the above example, the /etc/hosts file is sent to the printer queue Marketing. It will then be sent to the logical printer associated with this queue.

Netware Systems

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.
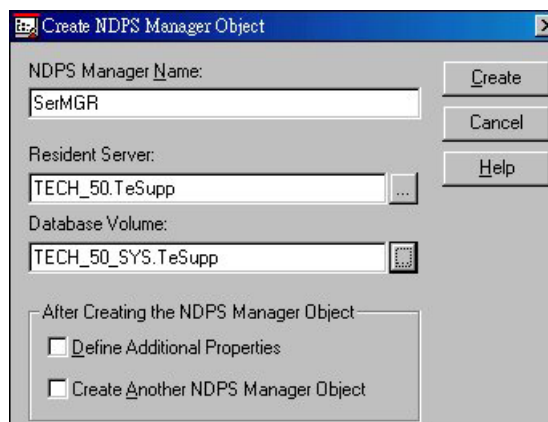

Figure 46: Create NDPS Manager Object

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

6. Browse the Resident Server and select where you want the NDPS Manager object to be assigned. (e.g. TECH_50.TeSupp in figure 1 above)

7. Browse the Database Volume and select where you want the NDPS Manager database to be assigned. (e.g. TECH_50_SYS.TeSupp in figure 1 above)

8. Click **Create**. The new NDPS Manager will appear in the main browser window.

    To start the NDPS Manager in future, enter the following command at the console:
    ```
    LOAD NDPSM
    ```
    then select the NDPS Manager object.

    To start the NDPS Manager whenever you bring up the server, add a command like the following to your server's AUTOEXEC.NCF file:
    ```
    LOAD  NDPSM  SerMGR.TeSupp
    ```
    The last item is the name of the NDPS Manager object you wish to load.

9. After creating an NDPS Manager, you can create NDPS printers by using NetWare Administrator, as explained below.

Creating an NDPS Printer Agent

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

1. Start the NDPS Manager object you will be using to control the Printer Agent.

2. At the *Identification* page, click the *Printer Agent List.*

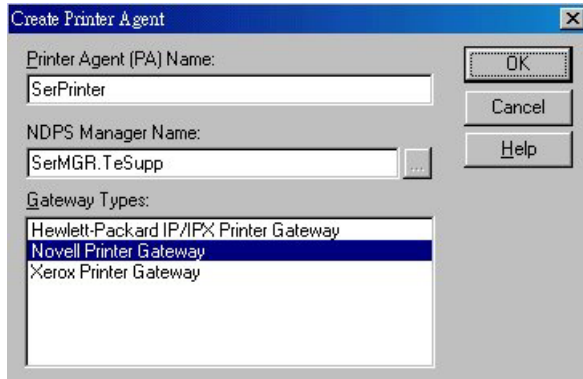3. Click *New* to see the *Create Printer Agent* window, as shown below.

Figure 47: 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.
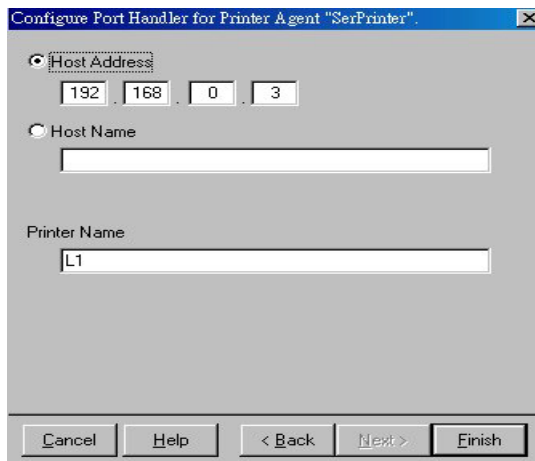

Figure 48 Configure Port Handler

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. (L1 for Parallel Port, L2 for USB Port).

12. Click *Finish*, then select appropriate drivers for Windows 3.1, Windows 95/98 etc as required.

13. The new Printer Agent will now appear in the Printer Agent List window.

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

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