



LevelOne Printer Servers

WPS-0100

WPS-0100- USB

User Guide

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Chapter I

Introduction



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

Features

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

- **Versatility.** The LevelOne Wireless Printer Server supports TCP/IP, SMB (Service Message Block), AppleTalk (EtherTalk), and NetBEUI. Operating system support includes Apple and Microsoft Windows.
- **Easy Installation and Setup.** Installation can be accomplished in minutes. For initial configuration, a number of utility programs are supplied to simplify setup. For Windows 95/98/NT/ME/2000/XP users, the supplied Wizard allows quick and easy setup.
- **Web-based Interface.** The Web-based interface provides an easy method of configuration in TCP/IP networks.
- **Compact Size.** This allows the LevelOne Wireless Printer Server to be used even where space is limited.
- **Remote Management Tools.** A variety of software tools are provided. In most environments, both the LevelOne Wireless Printer Server and attached bi-directional printers can be configured remotely, from any station on your LAN. For Windows users, the supplied BiAdmin program makes it easy to configure the LevelOne Wireless Printer Server for a variety of network and server configurations.
- **SNMP Support.** The LevelOne Wireless Printer Server can act as a SNMP agent, with its own MIB. This allows TCP/IP users to monitor, configure and troubleshoot the LevelOne Wireless Printer Server using their existing SNMP management tools.
- **JetAdmin Support.** If you are already using HP's *JetAdmin*, you can also use this program to manage your LevelOne Wireless Printer Server.
- **Internet Printing Protocol (IPP) Support.** All models can act as an IPP (Internet Printing Protocol) Server, allowing clients, suppliers, colleagues and others to print to your printer from anywhere on the Internet. Windows IPP Client software is also supplied.
- **Wireless LAN Support.** Wireless stations supporting the IEEE 802.11b standard can interoperate with the Wireless LevelOne Wireless Printer Server. Both LAN and WLAN users can print to the attached printer.

Safety Instructions

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

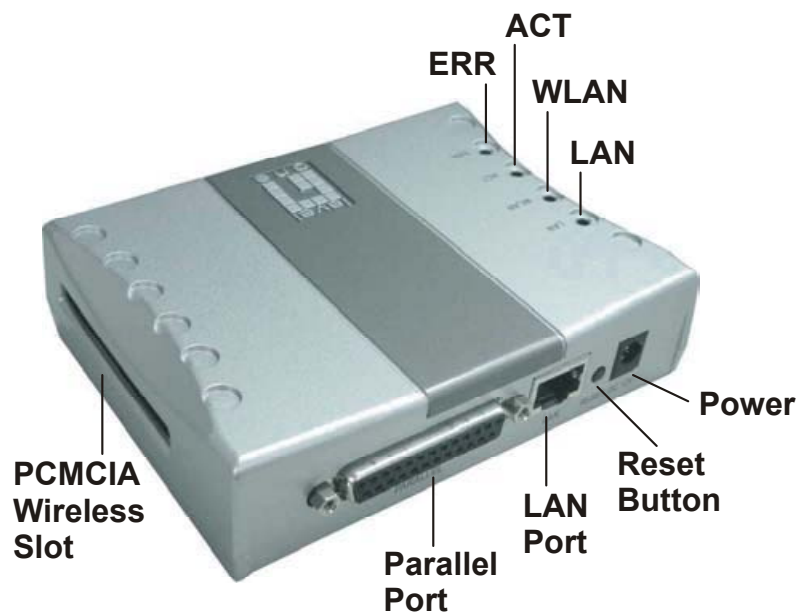
- The LevelOne Wireless Printer Server
- Power Adapter
- One CD-ROM containing all support programs and this manual
- Quick Install Guide

Models

This manual covers the following Wireless LevelOne Wireless Printer Server models. Details of the LEDs is in this Chapter. Further details of each model are contained in *Appendix A - Specifications*.

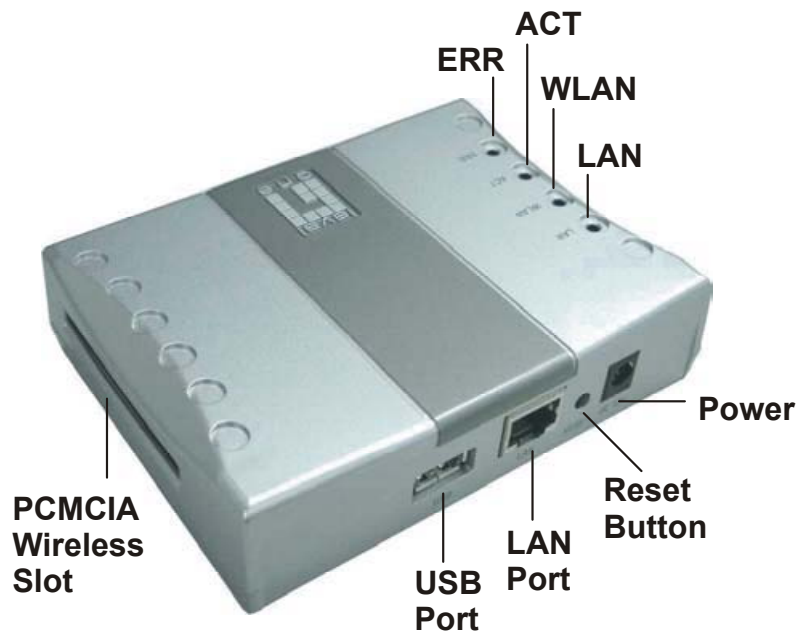
WPS-0100

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



WPS-0100 USB

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



LED Indicators

The models have four LED indicators on the top. The ERR LED is orange or red. The ACT indicator LED is green. The LED indicator modes are described in the following tables.

LED	Description
LAN	Off - Idle Flashing - Transmitting or receiving data through the LAN.
WLAN	Off - Idle Flashing - Transmitting or receiving data through the Wireless LAN.

The ACT and ERR LEDs work together to indicate the status:

ACT	ERR	Description
Solid Off	Solid Off	No power
Solid On	Solid On	Hardware error
Solid On	Solid Off	Normal operation (Idle)
Blinking	Blinking	Firmware upgrade in progress (the two LED blink in sequence)

Reset Button

The LevelOne Wireless Printer Servers are fitted with a Reset 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 LevelOne Wireless Printer Server OFF.
2. Press and hold the Reset button. While pressing the button, switch the LevelOne Wireless Printer 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 LevelOne Wireless Printer Server and the attached printer are ON.
2. Press the Reset 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, the test page will not be printed.

Chapter 2

LAN Installation

2

This chapter describes how to install the LevelOne Wireless Printer Server in your Local Area Network.

Procedure

1. Preparation

- a) Ensure the power is OFF. Do not connect the LevelOne Wireless Printer Server while power is On.
- b) If you have a compatible 802.11b Wireless PCMCIA card, it must be inserted into the PCMCIA slot on the rear. With the LEDs on the PCMCIA card facing UP, slide the card into the PCMCIA slot until it encounters some resistance. Push firmly and it will click into position.
- c) Find the *Default Server Name* for your LevelOne Wireless Printer 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 will be needed during configuration.



Note!

During configuration you will be able to change the device name. The new name MUST NOT contain any spaces or blanks

2. Connect the Printer

Connect the printer or plotter to the LevelOne Wireless Printer Server's printer port, as appropriate:

- WPS-0100 USB - Use the USB cable supplied with your printer to connect the printer to the LevelOne Wireless Printer Server's USB port.
- WPS-0100 - Use a standard Parallel port cable to connect the printer to the parallel port on the LevelOne Wireless Printer Server. Parallel printer cables should be less than 3 meters long.

3. Connect the Network Cable

- Connect a standard network cable from the LAN connector on the Print Server to a standard 10BaseT or 100Base Hub or Switch.



Note!

This will disable the Wireless interface, because the default "Infrastructure mode" wireless setting can NOT be used with the LAN interface. To use both the LAN and Wireless interfaces, the Wireless mode must be set to "Ad-hoc".

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

4. Power Up and Check the LEDs

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

- Check the LED indicators of the unit. When the Red ERR LED goes out and the Green ACT LED remains lit or flashes, the LevelOne Wireless Printer Server is ready.
- On the WPS-0100 USB LevelOne Wireless Printer Server, the Red ERR LED will remain flashing if the LevelOne Wireless Printer Server can't connect to the printer.



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

Chapter 3

3

Printer Server Configuration

This chapter provides an overview of the configuration process.

Overview

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

- The LevelOne Wireless Printer Server usually requires configuration. A Windows-based setup Wizard is provided on the CD-ROM to simplify this task.
- PCs wishing to use the printer attached to the LevelOne Wireless Printer 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**, 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 LevelOne Wireless Printer Server using the *Peer-to-peer Print Driver* installed by the *User* setup option on the CD-ROM.



Only Windows and Macintosh environments are supported.

Using the Windows Wizard

The Windows-based Wizard runs on Windows 95, 98, NT4.0, ME, Windows 2000 and XP. It will configure the LevelOne Wireless Printer Server for your Network environment.

Procedure

1. Insert the supplied CD-ROM into your drive. If the setup program does not start automatically, run SETUP in the root folder.
2. Run the *Setup Wizard*, either by using this option on the first installation screen, or by selecting it from the menu after running the *Installation* option.



To install both the Setup Wizard and the BiAdmin management program, select the "Administrator" option when running the *Installation*.

3. Within the *Setup Wizard*, select the LevelOne Wireless Printer Server you wish to configure, click *Next*, and step through the Wizard.

If the desired LevelOne Wireless Printer Server is not listed:

- Check all cables to the LevelOne Wireless Printer Server.
- Check the LevelOne Wireless Printer Server's LEDs:
 - The Red LED should be OFF and the Green LED should be ON or flashing.
 - If your model supports 10BaseT and 100BaseT, check the 10/100BaseT link LED next to the LAN connection. If the auto negotiation fails, the 10/100BaseT Link LED will not light when the device is powered up. (If there are 2 LEDs, neither will light.).
- Check that your PC and the LevelOne Wireless Printer Server are on the same LAN segment. (If you don't have a Router or Gateway on your LAN, you only have 1 segment.)
- Check that your PC has either the TCP/IP or NetBEUI network protocols installed. See *Checking your Network Protocols* in *Chapter 4 - Client PC Setup* for details.
- If you PC can't configure the LevelOne Wireless Printer Server correctly (in Infrastructure mode), then try to connect to LAN and disable the Wireless.

Alternative to the Windows Wizard

If you do not have a Windows 32 platform available, you can use your **Web Browser** to configure the LevelOne Wireless Printer Server.

See *Chapter 6 - Web Interface Setup* for details.

Wireless Configuration

The WPS-0100 and WPS-0100 USB are Wireless stations, and can communicate with other 802.11b Wireless stations. They have 3 modes:

- **802.11 Ad Hoc mode** - Wireless stations communicate directly with each other. This is the current standard.
- **Ad Hoc mode** - Wireless stations communicate directly with each other. This is the older standard.



Of the two (2) Ad-hoc modes, "802.11 Ad Hoc" mode is recommended. If your Wireless LAN Card doesn't provide "802.11 Ad Hoc" mode, try "Ad Hoc" mode on the PC and "802.11 Ad Hoc" on the WPS-0100 USB/ WPS-0100. If this fails, select "Ad-hoc" mode on the LevelOne Wireless Printer Server.

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



The WPS-0100 and WPS-0100 USB do NOT allow both a LAN connection and "Infrastructure" mode. In "Infrastructure" mode, connecting a LAN cable will disable the Wireless interface. To use the LAN interface, "Ad-hoc" mode must be used.

Required configuration

	Ad-hoc Mode	Infrastructure Mode
SSID	<p>Must match the other Wireless stations, unless the SSID is null or "any".</p> <p>If its SSID is null or "any", a Wireless station can join any Ad-hoc group. But since the WPS-0100 and WPS-0100 USB are fixed devices (rather than roaming), their SSID should not be null or "any".</p> <p>It's recommended to assign value to SSID for WPS-0100 and WPS-0100 USB.</p>	Must match the Access Point.
Channel	<p>Should match the other Wireless stations.</p> <p>However, when joining an existing ad-hoc group, a Wireless station will use the Channel in use, rather than its own Channel.</p> <p>For a device like the LevelOne Wireless Printer Server, it is best to set it to the Channel providing the least interference and best performance.</p>	<p>Access Point sets the Channel used.</p> <p>Wireless stations automatically locate the correct channel.</p>
WEP Settings	Must match the other Wireless stations.	Must match the Access Point.

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

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

BiAdmin Wireless Screen

Installation and use of the BiAdmin Windows utility is described in Chapter 5.

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

The image shows a 'Wireless Configuration' dialog box with the following fields and options:

- Regulatory Domain:** Unknown
- Station Name:** F2-71-00-00-00-00
- SS ID (Service Set Identifier):** [Empty text box]
- Channel No:** 11 (dropdown menu)
- Network Type:** Infrastructure (dropdown menu)
- Encryption:**
 - ☒ WEP Disabled
 - ☐ WEP Enabled
- Default Key:** KEY 1 (dropdown menu)
- WEP Keys:**
 - ☒ 64 bits
 - ☐ 128 bits
 - Key1, Key2, Key3, Key4 (each with a 5-character grid)
- WEP Authentication:**
 - ☐ Open System
 - ☒ Shared Key
- Buttons:** Set to Default, Save to Device, Cancel, Link Info, Help

Figure 1: Wireless Screen

Regulatory Domain	It is illegal to use this device in any location outside of the regulatory domain.
Station Name	The name used to identify this Wireless station.
SSID	<ul style="list-style-type: none"> • If using an ESS (Extended Service Set) this ID is called an ESSID (Extended Service Set Identifier). • To communicate, all Wireless stations MUST use the same SSID/ESSID. Change this value, or change the other Wireless stations, to ensure each Wireless station has the same value. • The default value is "null", so the Wireless station can join any Ad-hoc group. <p>Note! The SSID is case sensitive.</p>

Channel No	<p>To communicate in "802.11 Ad-hoc" or "Ad hoc" mode, all Wireless stations MUST use the same Channel number.</p> <ul style="list-style-type: none"> • If using "802.11 Ad-hoc" or "Ad-hoc" mode, select the value you wish to use on your Wireless LAN. • If using "Infrastructure" mode, the Channel is selected automatically, to match the Channel used by the Access Point. • If you experience interference (shown by lost connections and/or slow data transfers) you may need to experiment with different channels to see which is the best.
Network Type	<p>Select the correct value for your Wireless LAN.</p> <ul style="list-style-type: none"> • 802.11 Ad-hoc mode is used when each Wireless station communicates directly with other Wireless stations. This is the current standard. • Ad-hoc mode is used when each Wireless station communicates directly with other Wireless stations. This is the older standard. • Infrastructure mode is used when each Wireless station connects to the Wireless Access point. This also provides access to the wired LAN.
Encryption	
WEP Disabled/ Enabled	<p>If Disabled (default), data is NOT encrypted before being transmitted.</p> <p>If Enabled, you must provide either the 64 Bit key table or the 128 Bit keys, as described below. The key is used to encrypt the data before transmission.</p>
64 Bit	<ul style="list-style-type: none"> • 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. <p>Key Table:</p> <p>This table is used when Encrypting and Decrypting data. All stations, 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.</p> <p>The easiest way to ensure there are no problems is to have every Station, use the same key table (all entries identical). Then, it does not matter which key is used as the default key.</p>
128 Bit	<p>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.</p>
WEP Authentication	<p>Options are "Open System" or "Shared Key".</p> <p>Some Wireless cards do not support both methods. Check your documentation to determine the correct value to use.</p>

Wireless Link Info Screen

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

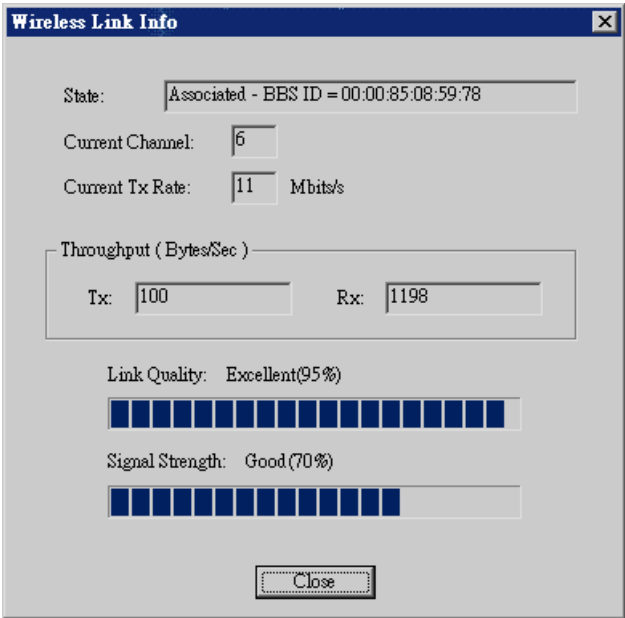


Figure 2:Link Info Screen

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.



Note!

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

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.

Chapter 4

4

Client PC Configuration

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

Overview

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

Printing Methods

The LevelOne Wireless Printer Server supports a number of printing methods:

- **Peer-to-peer Print Driver** is used by the **User** installation on the CD-ROM. The print jobs are stored (queued) on your PC, and sent to the LevelOne Wireless Printer Server when it is available.
- **Server-based Print Queue** means that the all print jobs are stored (queued) on the Network Server (e.g. Windows NT/2000) and then sent to the LevelOne Wireless Printer Server. This allows the Network Administrator to modify the Print Queue. For example, an important job can be moved to the head of the queue.
- **Windows SMB** printing is a Microsoft standard for using a "Network Printer". No additional software needs to be installed on your Windows PC, and printing from MS-DOS programs is supported. However, because the LevelOne Wireless Printer Server can not store files, large print jobs may cause problems.
- **AppleTalk** is also supported, and normally no configuration of the LevelOne Wireless Printer 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 or 2000, the easiest method is to install the *Peer-to-peer Print Driver* on the CD-ROM, by selecting the **User** installation.
- If using Windows, and you need to print from MS-DOS programs, or you don't wish to install additional software, use SMB.
However, SMB is not suitable for large, complex documents, so if you need this as well as MS-DOS printing, you should install BOTH the *Peer-to-peer Print Driver* and SMB printing. MS-DOS programs can use the SMB printer, Windows programs should use the *Peer-to-peer Print Driver*.
- If your LAN has Network Servers (e.g. Windows NT, Windows 2000 Server) use the method advised by your Network Administrator. The LevelOne Wireless Printer Server can print via a queue located on a Network server, if desired.
- **Macintosh** users - refer to the Macintosh section of this chapter.

Checking your Network Protocols (Windows)

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

- If using the *Peer-to-peer Print Driver*, the installation program will check this for you.
 - If using *Windows SMB Printing*, you must check manually, as follows:
1. Select the *Settings - Control Panel - Network* option on the Start Menu. You should see a screen like the one following:

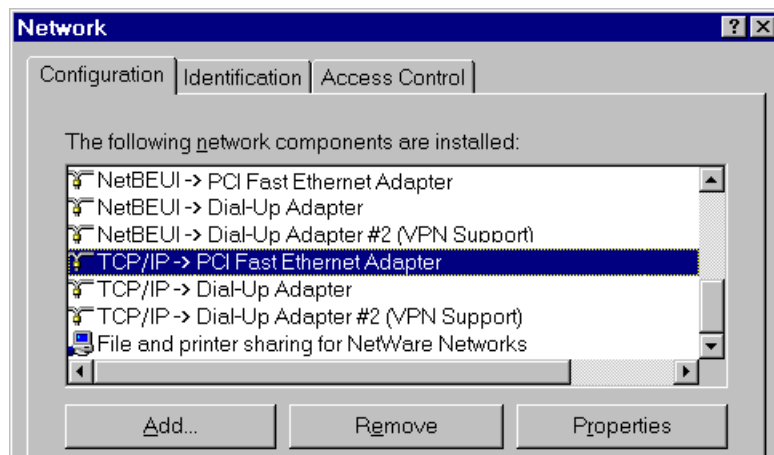


Figure 3: Network Configuration

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

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

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

Windows Peer-to-peer Print Driver

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

Setup

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

1. Insert the supplied CD-ROM into your drive. If the setup program does not start automatically, run **SETUP** in the root folder.
2. Select the **Installation** icon, then choose the **User** option in the "Setup Type" screen. This will install the *Peer-to-peer Print Driver*.
3. Follow the prompts to complete the installation. (Refer to the *Windows* section of *Chapter 8 - Troubleshooting* if there is a problem with the installation.)
4. The *Print Driver Setup* will then run.
5. The LAN will be searched for LevelOne Wireless Printer Servers, and a screen like the following will be displayed.
 - If desired, change the Workgroup name and click *Refresh*.
 - Select *List all Print Servers* to list all LevelOne Wireless Printer Servers, regardless of Workgroup.
 - 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.

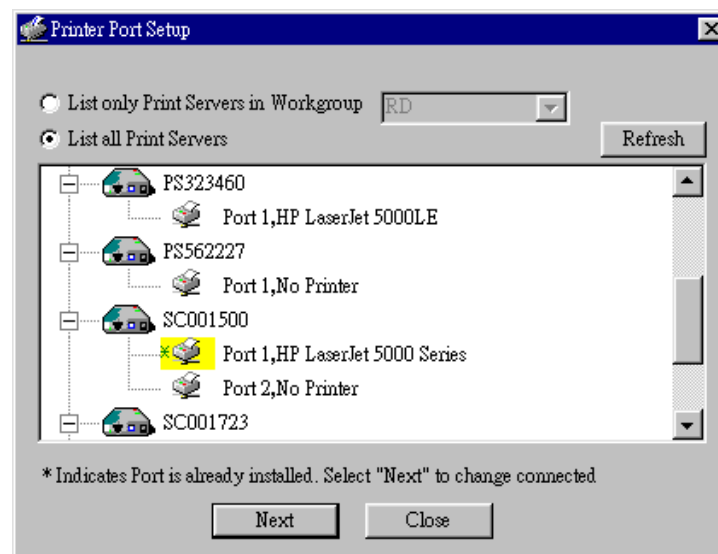


Figure 4: Add Port (Peer-to-peer Print Driver)

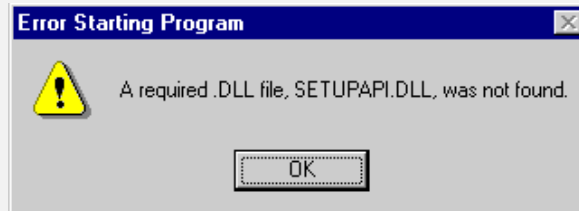
If your LevelOne Wireless Printer Server is not listed:

- Select "List all Print Servers", and click the "Refresh" button.
- Check that both the LevelOne Wireless Printer Server and the printer are properly connected, and powered on.
- Check that the LevelOne Wireless Printer Server has been configured, using the *Setup Wizard* on the CD-ROM.

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



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



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

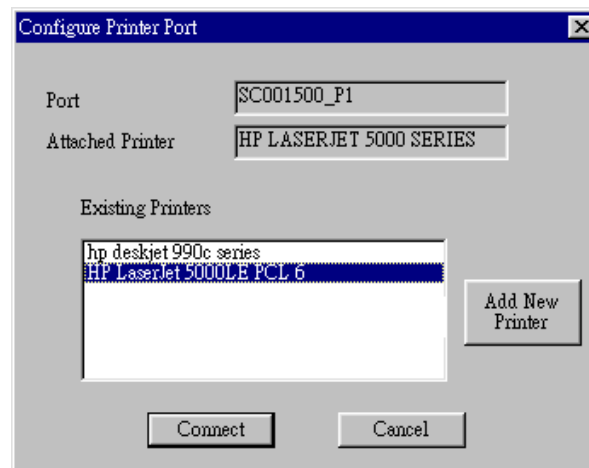


Figure 5: Configure Printer Port

8. Select the "Add New Printer" to run the Windows *Add Printer* wizard if the desired printer is not in the Existing Printers list. Follow the Wizard to complete the installation:
 - 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.
9. Click the "Connect" icon to complete the Installation. You can now print using this printer.
 - To install additional Printers, repeat steps 8 and 9.
 - Use the **Start** menu to run this program in future. The default installation is *Start - Programs - Print Server Utility - Print Server Setup*.

Management

- Print jobs can be managed like any Windows printer. Open the *Printers* folder (*Start - Settings - Printers*) and double-click any printer to see the current print jobs.
- If the printer attached to the LevelOne Wireless Printer 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 of Windows.
- If the LevelOne Wireless Printer Server's IP Address is changed, and you can no longer print, delete the port (see procedure above) and re-install it.

Port Options

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

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

An example screen is shown below:

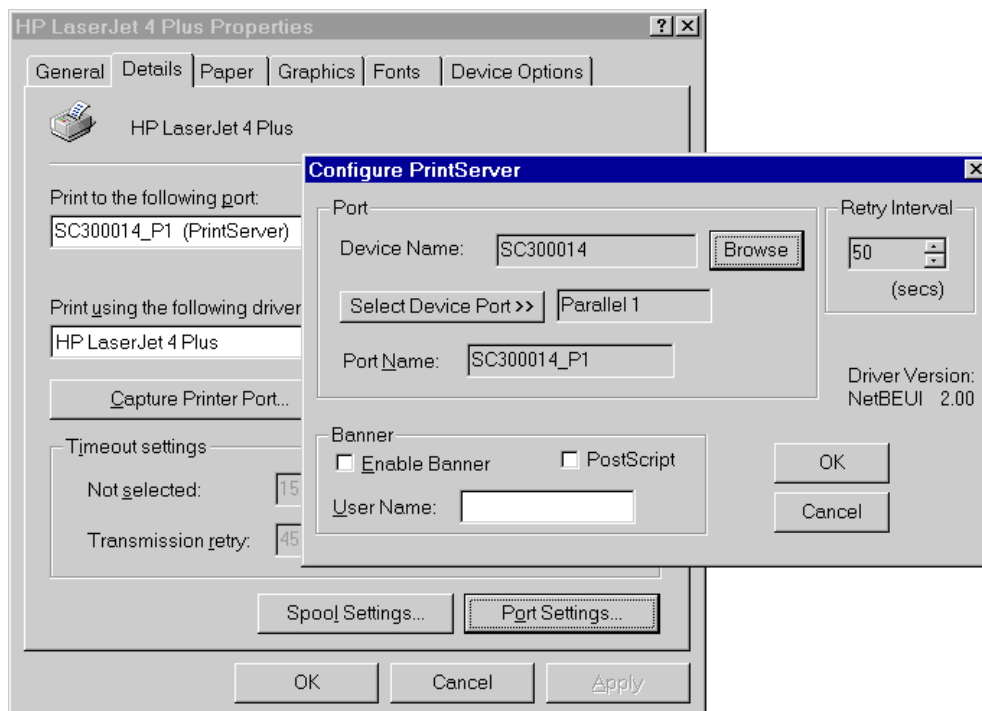


Figure 6: Port Settings (Peer-to-peer Driver)

Items shown on this screen are as follows:

Port	<p>If desired, click <i>Browse</i> to select a different LevelOne Wireless Printer Server. If the selected device has multiple ports, the <i>Select Device Port</i> button can be used to select the port.</p> <p>The <i>Port Name</i> can not be changed after installation. This name is shown in the Printer's <i>Properties</i>.</p>
Banner	<p>Check this option to print a banner page before each print job.</p> <ul style="list-style-type: none"> • If using a PostScript Printer, check the <i>PostScript</i> box. • The <i>User Name</i> will be printed on the banner page.
Retry Interval	<p>Sets how often Windows will poll the LevelOne Wireless Printer Server to establish a connection when the printer is busy. Increase this value if you get too many warning messages.</p>

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 LevelOne Wireless Printer Server's printer as a Windows SMB network printer:

1. Double-click the *Network Neighborhood* or *My Network Places* icon on the desktop.
2. On the *View* menu, select *Details*.
3. Locate the desired LevelOne Wireless Printer 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.

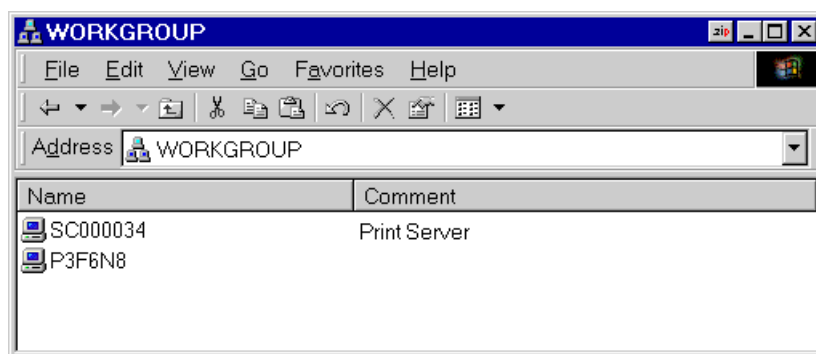


Figure 7: Network Neighborhood

4. Double-click the LevelOne Wireless Printer 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.

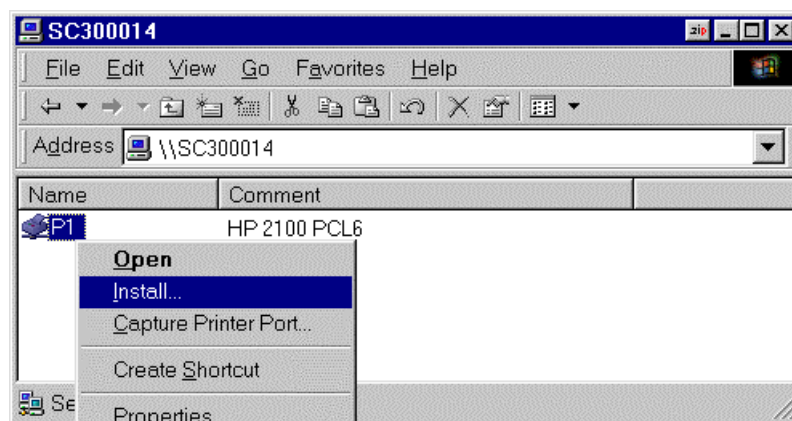


Figure 8: Install SMB Printer

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 LevelOne Wireless Printer Server, and complete the Wizard.

7. This printer will now appear in your *Printers* folder (*Start - Settings - Printers*) and can be used like any other printer. However, SMB printing is not suitable for large complex print jobs - you should use the *Peer-to-peer Print Driver* instead.

Printing from MS-DOS Programs

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

Capture settings can be set by:

- Saying "Yes" to the prompt "Do you print from MS-DOS programs?" when installing a Network Printer.
- OR, using the **Capture Printer Port** menu option shown in Figure 8 above.

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

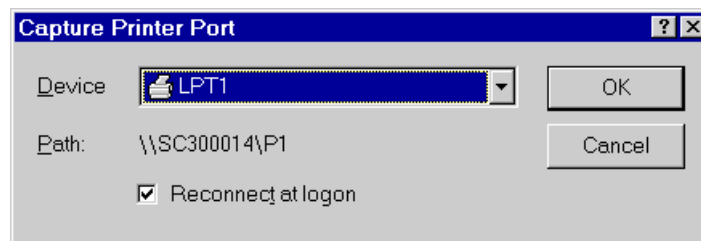


Figure 9: Capture Printer Port

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

Windows with Server-based Print Queues

1. Open your *Printers* folder, and start the *Add Printer Wizard*.
2. When prompted, select *Network Printer*.
3. When prompted for *Network Path or Queue Name*, click the *Browse* button, and locate the Server and Printer (or Print Queue) that 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 LevelOne Wireless Printer Server supports AppleTalk (EtherTalk), PAP, ATP, NBP, ZIP and DDP protocols, enabling Macintosh computers on the network to view and use the LevelOne Wireless Printer Server as a regular AppleTalk printer.

Normally, no configuration is required.

Software Requirements

System 7.x OS or newer.

AppleTalk Setup

1. Click the apple icon and choose Control Panel.
2. Click Network.
3. Ensure that *EtherTalk* is selected under *AppleTalk Connection*.
4. Click *Chooser*. The Chooser panel will open.
5. Click on either the *LaserWriter 8* icon (recommended) or the *LaserWriter 7* icon. LaserWriter 8 makes use of the fonts installed in the printer itself, so the printing response time is quicker. LaserWriter 7 uses the fonts installed in the computer, which increases network traffic and takes more printing time.
6. Select a LevelOne Wireless Printer Server from the printer list by clicking on the appropriate name. The LevelOne Wireless Printer Server's name is recorded on a label on the bottom of the LevelOne Wireless Printer Server as "Server Name". This name consists of 8 digits and/or numbers.
7. Click on the *Close* box.
Configuration is now complete.

Printing

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

Chapter 5

5

BiAdmin Management Utility

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 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 program in the root folder.

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

Operation

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

Main Screen

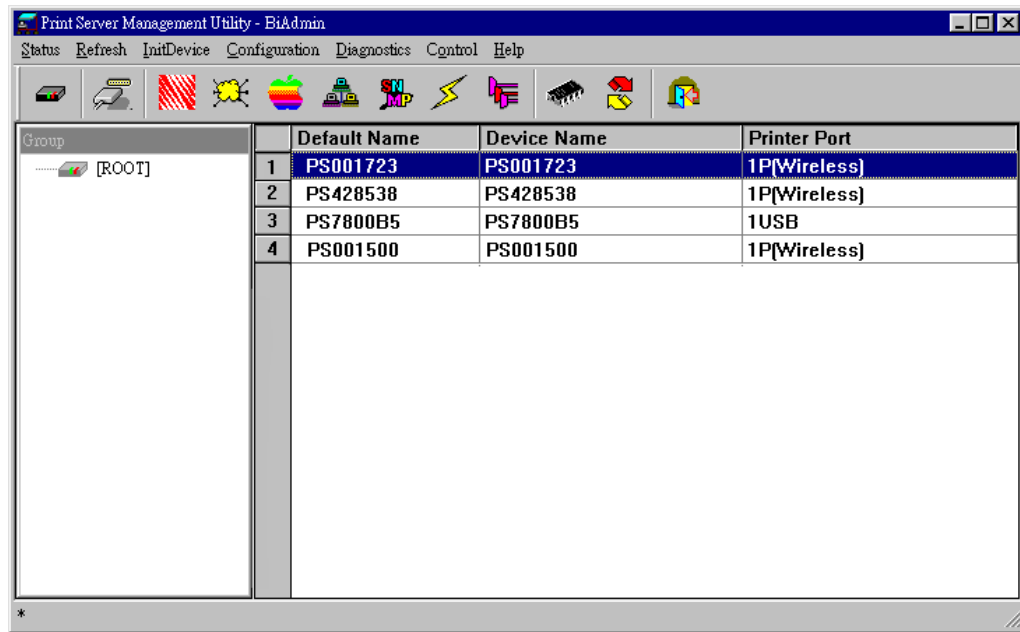


Figure 10: BiAdmin Main Screen

Groups

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

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

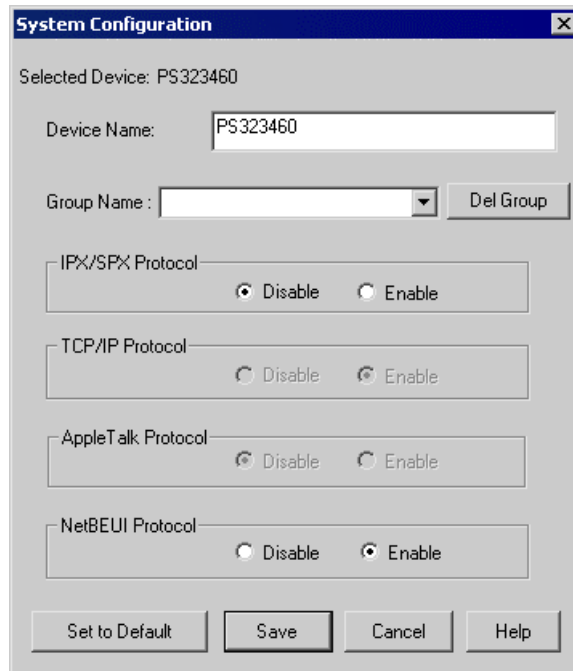


Figure 11: System Configuration - Groups

Device List

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

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

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

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

Status Icons

Once a LevelOne Wireless Printer Server has been selected, the Icons become active.



Note!

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



Device Information

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

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

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



Printer Status

Menu equivalent: *Status - Port Status*

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

Configuration Icons

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



NetWare

Menu equivalent: *Configuration - NetWare*.

This option is unavailable for these LevelOne Wireless Printer Server models.



TCP/IP Configuration

Menu equivalent: *Configuration - TCP/IP*

Selecting this icon will allow configuration for TCP/IP. Some models may have checkboxes for *DHCP*, *Bootp*, and *Rarp*.



AppleTalk Configuration

Menu equivalent: *Configuration - AppleTalk*

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



NetBEUI Configuration

Menu equivalent: *Configuration - NetBEUI*



SNMP Configuration

Menu equivalent: *Configuration - SNMP*

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



Wireless Configuration

Menu equivalent: *Configuration - Wireless*

This Icon will be active if the selected device has the capability to serve as a Wireless Station for your LAN.



Logical Port Configuration

Menu equivalent: *Configuration - Logical Port*.

This option is for use with the Unix LPD printing method.

Other Icons



Upgrade

Menu Equivalent: *InitDevice - Upgrade*

This option allows you to upgrade the firmware for the selected LevelOne Wireless Printer 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: *None*

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



Exit

Menu Equivalent: *Help - Exit*

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

Menu Options

Status Menu

Device Info	Same as <i>Device</i> button. Display all the configuration and status information about the selected LevelOne Wireless Printer Server. The data is presented in a scrolling, read-only window.
Port	Same as <i>Port Status</i> buttons.

InitDevice Menu

Attach Remote	This is used to connect to a LevelOne Wireless Printer Server device on another LAN segment. If your LAN does not have a Router, ignore this option.
Connected Protocol	This option allows you to designate which LAN protocol will be used for communication between the selected device and this application. You should select ONE protocol only.
Find	Use this option to use the IPX/SPX protocol to locate a LevelOne

	Wireless Printer Server on the LAN. Simply enter the <i>Default Name</i> of the LevelOne Wireless Printer Server you wish to locate. The <i>Default Server Name</i> is shown on a sticker on the base of the device.
Reset Device	This will cause the device to reboot. This should be done after making any configuration changes, or if the device stops responding after some problems.
Restore Factory Default	This will restore ALL device values to their factory defaults. To restore only the current screen, use the <i>Set to Default</i> button on the screen.
Set IP Address	For TCP/IP networks only: <ul style="list-style-type: none"> • If a LevelOne Wireless Printer Server does not appear on the main screen, use this option to set a Device IP Address, Gateway IP Address, and Network Mask to the LevelOne Wireless Printer Server. • This should only be necessary if your LAN is using ONLY the TCP/IP protocol. In other cases, BiAdmin will use IPX/SPX to locate the LevelOne Wireless Printer Server even if it doesn't have a valid IP Address. • To locate the LevelOne Wireless Printer Server, enter the <i>Default Name</i>. The <i>Default Server Name</i> is shown on a sticker on the base of the device. • Enter the required IP Address, Network Mask, and Gateway IP Address. • After saving the data to the device, refresh the listing. The LevelOne Wireless Printer Server should then appear in the device list on the main screen.
Upgrade	Upgrade the firmware in a LevelOne Wireless Printer Server. See Upgrade Icon for details.

Configuration Menu

The **System** option allows you to:

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

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

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

Diagnostics menu

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

Control Menu

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



The "Abort Mail Print Job" menu option does NOT cancel IPP print jobs.

Chapter 6

6

Web Interface Setup

This chapter explains how to use your Web Browser to configure the LevelOne Wireless Printer Server models

Overview

The LevelOne Wireless Printer Servers incorporate a HTTP server. This allows you to connect to the LevelOne Wireless Printer 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 LevelOne Wireless Printer 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 LevelOne Wireless Printer Server.
- Use the Windows setup wizard, the supplied **BiAdmin** program, or another utility to allocate a valid IP Address to the LevelOne Wireless Printer Server.
- Add an entry to the **arp** table to associate the hardware address of the LevelOne Wireless Printer Server with the desired IP address, as follows:

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

Where:

IP_Address is the IP Address you wish to assign to the LevelOne Wireless Printer Server.

00:c0:02:xx:xx:xx is the hardware address of the LevelOne Wireless Printer Server.

Example (Windows):

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



Note!

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

The diagnostic print-out can also be used to find the LevelOne Wireless Printer Server's IP address and hardware address. (Press and hold the Reset button for 2 seconds.)

Connecting to the LevelOne Wireless Printer Server

1. Start your Web Browser.
2. In the *Address* box, enter *HTTP://* followed by the IP Address of the LevelOne Wireless Printer Server.
e.g.
`http://192.168.0.21`
3. You will then be prompted for the password. If no password has been set, just press ENTER.
4. Use the menu bar on the top of the screen to move about. Remember to save each screen before changing to a different screen.

Configuration Screens

AppleTalk

AppleTalk	
The zone determines which Macs have access to the printer. Communication parameters must match your Mac computers.	
AppleTalk zone:	AppleTalk zone *
Communication:	Printer Object Type: LaserWriter
	Communication Protocol: <input type="radio"/> ASCII <input checked="" type="radio"/> Binary
<div>Get Defaults Save Cancel</div>	

Figure 12: 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 LevelOne Wireless Printer 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

NetBEUI	Set the Workgroup name to match your PCs. Other settings normally do not need to be changed.
Domain Name:	<input type="text" value="Workgroup"/>
Options:	Response Time (0.1 secs): <input type="text" value="0"/> (0..255) Abort Print Job if Error: <input type="radio"/> Yes <input checked="" type="radio"/> No <input type="button" value="Save"/> <input type="button" value="Cancel"/>

Figure 13: NetBEUI Screen

Domain Name	Enter the designated work group to be serviced by the LevelOne Wireless Printer 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 Print Job if Error	YES terminates a print job if a printing error occurs. NO (default) will try to continue but may cause print errors. If print errors occur, try setting this value to YES.

SNMP (Simple Network Management Protocol)

SNMP	
The data below is essential if using SNMP. The required MIB is on the CD-ROM. Save your data after each change.	
General:	SysContact <input type="text" value="Jeff Bridges"/> SysLocation <input type="text" value="R305"/>
Management Stations:	Station No. <input type="text" value="1"/> <input type="button" value="Get Data"/> <div> IP Address <input type="text" value="203"/> <input type="text" value="70"/> <input type="text" value="212"/> <input type="text" value="211"/> </div> <div> Community <input type="text" value="Public"/> </div> <div> Access <input type="text" value="Read-only"/> </div>
Trap Receivers:	Receiver No. <input type="text" value="1"/> <input type="button" value="Get Data"/> <div> IP Address <input type="text" value="203"/> <input type="text" value="70"/> <input type="text" value="212"/> <input type="text" value="211"/> </div> <div> Community <input type="text" value="Private"/> </div> <div> <input checked="" type="checkbox"/> Enable with Severity level: <input type="text" value="1"/> </div> <div> <input type="button" value="Save"/> <input type="button" value="Cancel"/> </div>

Figure 14: SNMP Screen

SysContact	Text Field - Name of the contact person.
SysLocation	Text Field - Location of the contact person.
Management Stations	
Station No.	Select the Management station (1..4), and click the Get Data button to update the display for the selected item.
IP Address	Enter the IP Address of the management station, which has the SNMP program installed.
Community	This is a text field. Enter the name of the community.
Access	Select the desired level of access.
Trap Receivers	
Receiver No.	Select the Trap Receiver number (1..4), and click the Get Data button to update the display for the selected item.
IP Address	Enter the IP Address of the Trap Receiver, which will be sent the Trap message.
Community	This is a text field. Enter the name of the community.
Enable	Check to enable; select the severity level. Note: Currently, all traps are level 1.

TCP/IP

TCP/IP		Settings for the TCP/IP network protocol. Using a fixed IP Address is recommended.														
IP Address:	IP Address: <input type="radio"/> DHCP Client <input checked="" type="radio"/> Fixed IP Address:															
	<table border="1"> <tr> <td>IP Address</td> <td>192</td> <td>168</td> <td>0</td> <td>1</td> </tr> <tr> <td>Subnet Mask</td> <td>255</td> <td>255</td> <td>255</td> <td>0</td> </tr> <tr> <td>Gateway Address</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> </table>		IP Address	192	168	0	1	Subnet Mask	255	255	255	0	Gateway Address	0	0	0
IP Address	192	168	0	1												
Subnet Mask	255	255	255	0												
Gateway Address	0	0	0	0												
Connection:	Delay before reconnection attempt (secs) <input type="text" value="2"/> (0..255)															
	Number of reconnection attempts <input type="text" value="254"/> (0..255)															
<div> <input type="button" value="Get Defaults"/> <input type="button" value="Save"/> <input type="button" value="Cancel"/> </div>																

Figure 15: 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 LevelOne Wireless Printer 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 LevelOne Wireless Printer 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

Configure Server	The password protects the configuration data. Unused protocols can be disabled.
Print Server Name:	Print Server Name: <input type="text" value="AdminLaser"/>
Password:	Device Password: <input type="password" value="jklolok"/>
	Verify Password: <input type="password" value="jklolok"/>
Protocols:	Enable: <input checked="" type="checkbox"/> Appletalk <input checked="" type="checkbox"/> NetBEUI
	<input type="button" value="Save"/> <input type="button" value="Cancel"/>

Figure 16: 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 <i>Verify</i> field. Once a password is entered, it is required in order to gain access and change the configuration.
Enable Protocols	Non-TCP/IP protocols may be disabled if they are not required on your LAN.

Wireless Configuration

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

Wireless																																									
SSID and WEP settings must match the Wireless stations using this Access Point.																																									
Configuration:	Regulatory Domain: USA Station Name: SC000014 SSID (Service Set Identifier): <input type="text"/> Channel No: 1 Network Type: Infrastructure <input type="button" value="Link Info"/>																																								
WEP Data Privacy:	<p><input type="radio"/> Off - no data encryption</p> <p><input type="radio"/> 64 Bit Encryption using this key table</p> <p>Default Key 1</p> <table border="1"><tr><td>Key 1:</td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td></tr><tr><td>Key 2:</td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td></tr><tr><td>Key 3:</td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td></tr><tr><td>Key 4:</td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td></tr></table> <p><input type="radio"/> 128 Bit Encryption using this key</p> <table border="1"><tr><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td></tr><tr><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td></tr></table> <p>WEP Authentication: Open System</p> <p><input type="button" value="Get Defaults"/> <input type="button" value="Save"/> <input type="button" value="Cancel"/></p>	Key 1:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	Key 2:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	Key 3:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	Key 4:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Key 1:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>																																				
Key 2:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>																																				
Key 3:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>																																				
Key 4:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>																																				
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>																																		
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>																																		

Figure 17: 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 <i>Device (Host) Name</i> on the WAN screen.
SSID (ESSID)	<p>To communicate, all Wireless stations MUST use the same SSID/ESSID. The default value is null.</p> <p>Note! The SSID is case sensitive.</p>
Channel No.	<p>The default Channel for the USA and Canada is 3.</p> <p>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.</p>
Network Type	<p>Select the correct value for your Wireless LAN.</p> <ul style="list-style-type: none"> • 802.11 Ad-hoc mode is used when each Wireless station communicates directly with other Wireless stations. This is the current standard. • Ad-hoc mode is used when each Wireless station communicates directly with other Wireless stations. This is the older standard. • Infrastructure mode is used when each Wireless station connects to the Wireless Access point. This also provides access to the wired LAN.
Link Info Button	Click this button will open the sub screen.
WEP Data Privacy	
Off	If OFF (default), data is NOT encrypted before being transmitted.
64 Bit Encryption	<p>If selected, data is encrypted, using the default key, before being transmitted.</p> <p>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.</p> <p>Default Key</p> <p>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.</p> <p>Key Table:</p> <p>This table is used when Encrypting and Decrypting data. All stations, 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.</p> <p>The easiest way to ensure there are no problems is to have every Station, use the same key table (all entries identical). Then, it does not matter which key is used as the default key.</p>

128 Bit Encryption	<p>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.</p> <p>Key</p> <p>Enter the key value you wish to use. Other stations must have the same key</p>
WEP Authentication	<p>Options are "Open System" or "Shared Key".</p> <p>Some Wireless cards do not support both methods. Check your Wireless card's documentation to determine the correct value.</p> <p>Ensure that all Wireless stations use the same setting as the Access Point.</p>

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 Status

This screen displays the current status of the printer. 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*.

Chapter 7

Special Features



This chapter covers the special features of the LevelOne Wireless Printer Server.

Overview

The LevelOne Wireless Printer Server has three (3) special features:

- IPP (Internet Printing Protocol) support
- Proprietary *Internet Mail Printing* system.
- SNMP (Simple Network Management Protocol) is fully supported by all models.

Internet Printing Protocol (IPP)

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

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

IPP Server Configuration

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

- The LevelOne Wireless Printer Server must have a valid IP Address. For printing via the Internet, the LevelOne Wireless Printer 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

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

- Window 95/98/ME
- 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 through 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/NT 4.0)

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

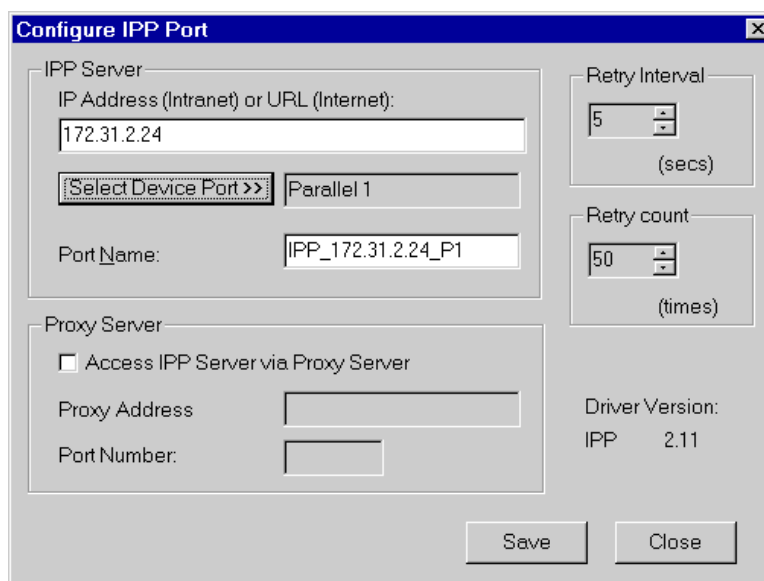


Figure 18: IPP Port

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.

- 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:

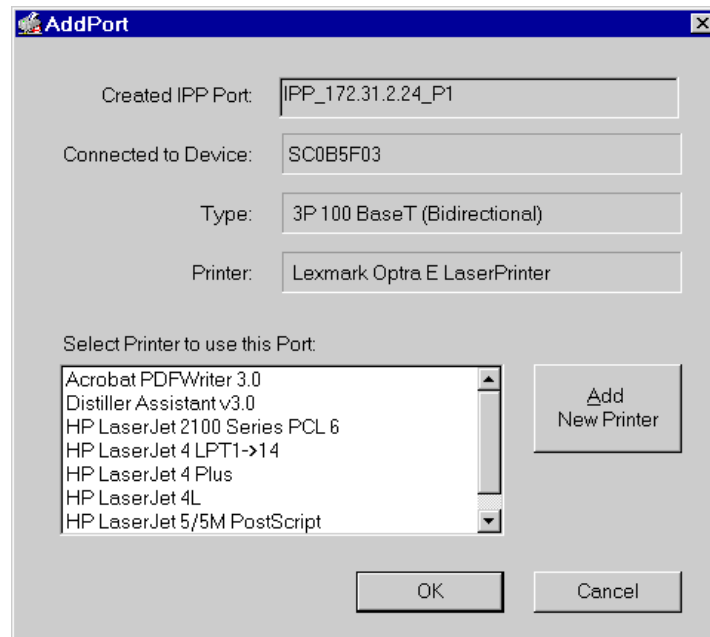


Figure 19: Select Printer for IPP Port

- 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 18: IPP Port using the Windows *Port Settings* button:

- Open the *Printers* folder (*Start - Settings - Printers*)
- Right-click the IPP Printer, and select *Properties*.
- 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

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 LevelOne Wireless Printer 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.

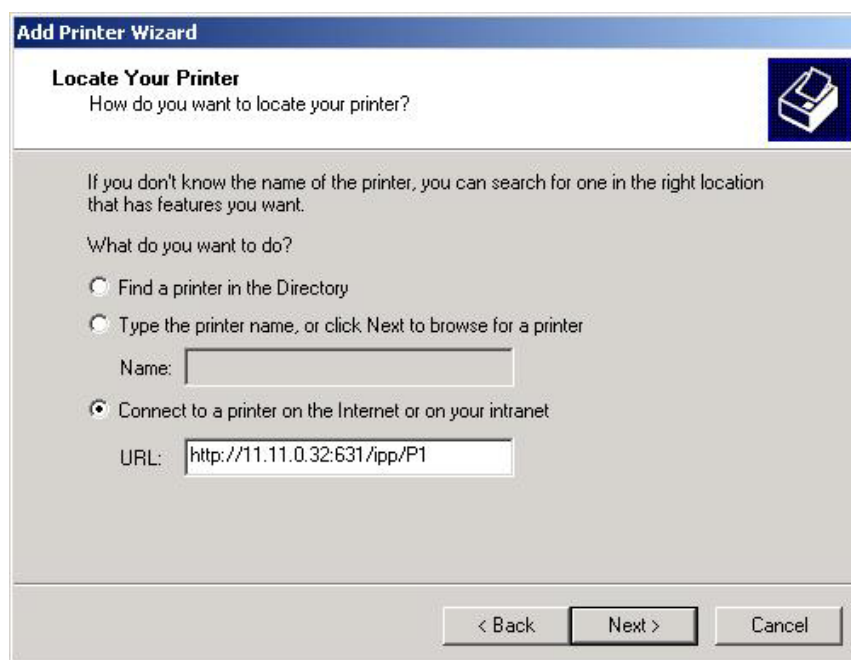


Figure 20: Windows 2000 - Locate your Printer

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.

`ip_address:631/ipp/P1`



Note!

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

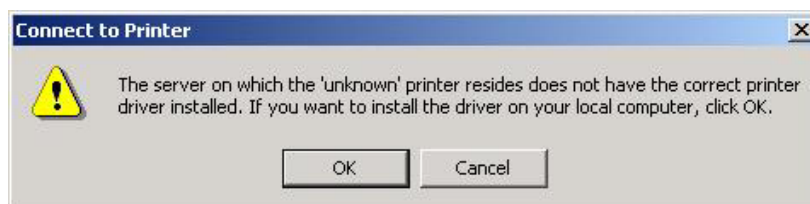


Figure 21: Windows 2000: No printer driver

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 LevelOne Wireless Printer Server an E-Mail, with the print job normally sent as an attachment to the E-Mail. The LevelOne Wireless Printer 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 LevelOne Wireless Printer Server

- **TCP/IP Protocol.** The LAN must use the TCP/IP protocol.
- **Mail Server Access.** The LevelOne Wireless Printer Server must be able to access the Mail Server using a single IP address.
- **Mail Account.** The LevelOne Wireless Printer 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 are any problems.
- **Printer Driver.** Users must have a printer driver which matches the printer connected to the remote Internet LevelOne Wireless Printer Server.
- **Print Capture Software.** To print more than plain text, users require InterNet Printing Port software to capture the print job and convert it into an E-Mail attachment. The Internet Printing Port software is available for the following operating systems:
 - Microsoft Windows 95
 - Microsoft Windows NT 4.0 or later.

Internet Mail Printing Configuration

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

User Software

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

- They send an E-Mail directly to the LevelOne Wireless Printer Server Mail Account, using their normal E-Mail application.
- The E-Mail contains plain text only.
- The Internet LevelOne Wireless Printer 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.

InterNet Printing Port Driver Configuration (ver 1.0)

Port Name : WAN

Remote Printer

E-mail address
PrintServer@customer.com

Your E-mail information

Mail Server Name or IP Address
pop3serv.mycompany.com

Your Internet E-mail address (e.g. username@company.com)
myname@mycompany.com

Retry Interval: 30 Sec.

☒ Reply Notification E-mail

OK
Cancel
Help

Figure 22 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, and then choose *Properties*, as shown in the example below.

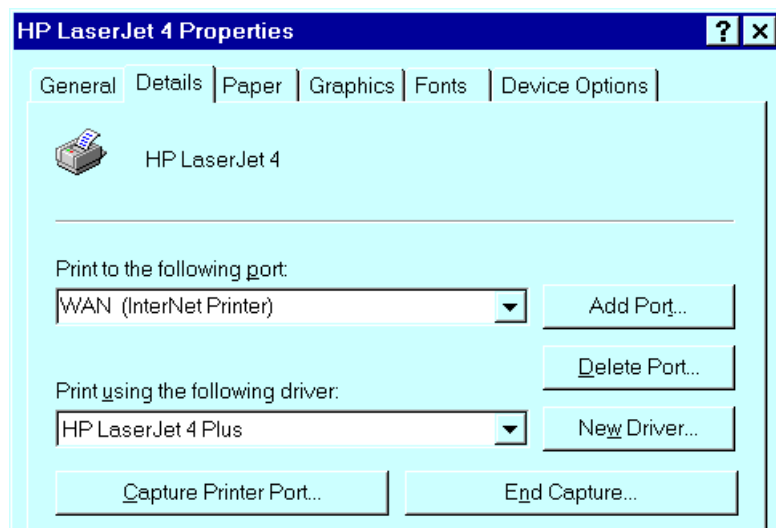


Figure 23 InterNet Printer Properties

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 22 InterNet Printer Port* on page 46.
 - 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 LevelOne Wireless Printer 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:

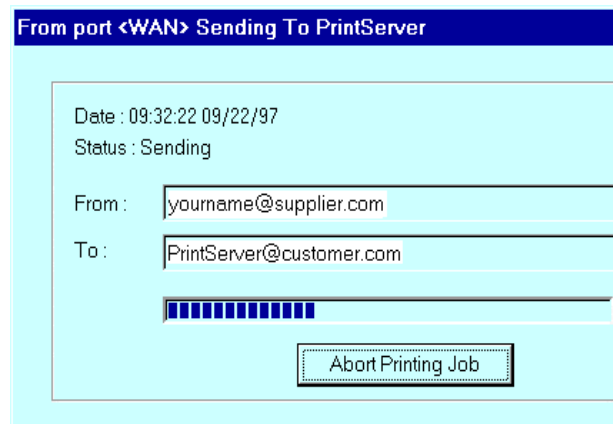


Figure 24 InterNet Printing Progress

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

Canceling a Print Job

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

SNMP

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

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

Mib1p.mib WPS-0100 USB, WPS-0100

Configuring the LevelOne Wireless Printer Server for SNMP

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

SNMP Settings

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

Management Station Settings

For each Management Station, the following fields are available:

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

Trap Receiving Station Settings

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

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

Chapter 8

Troubleshooting

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 LevelOne Wireless Printer Server still does not function properly, please contact your dealer for further advice.

Hardware & LAN Problems

Problem No. 1	All the LevelOne Wireless Printer Server's LEDs are off.
Solution No. 1	Check the power supply or power connection.
Problem No. 2	LevelOne Wireless Printer Server's status light continuously stays lit.
Solution No. 2	Reset LevelOne Wireless Printer Server by unplugging the power supply and plugging it back in.
Problem No. 3	LevelOne Wireless Printer Server's status light and power light stay on continuously and do not turn off.
Solution No. 3	Reset the LevelOne Wireless Printer Server by unplugging the power supply or by pushing the reset push button, if fitted.
Problem No. 4	The LevelOne Wireless Printer Server unit can not be found on the LAN, so configuration is not possible.
Solution No. 4	If using 10/100BaseT: <ul style="list-style-type: none">• Check the Hub. The link LED for the port to which the LevelOne Wireless Printer Server is connected should be ON. If it is Off, there is a problem in the network cable.• On the LevelOne Wireless Printer Server, check the LED(s) next to the connector. If the LED is not ON (or neither LED is On, if there are 2), the network connection is not working. Check the Ethernet cable and connectors. If using TCP/IP: <ul style="list-style-type: none">• Ensure that there are no routers between the LevelOne Wireless Printer 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 <i>Network Neighborhood</i> and try to browser the network.)
Problem No. 5	I am using DHCP, and getting an IP Address conflict involving the LevelOne Wireless Printer Server.

Solution No. 5	<p>If the LevelOne Wireless Printer Server is left on, but the DHCP server is turned off, then the LevelOne Wireless Printer Server will retain its IP Address without the DHCP Server being aware of it. Simply reset the LevelOne Wireless Printer Server so it will obtain a new IP Address.</p> <p>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.</p>
Problem No. 6	The Wireless is not working.
Solution No. 6	<ul style="list-style-type: none"> • Make sure the PCMCIA card is inserted (check the WLAN LED). • If the LevelOne Wireless Printer Server is in "Infrastructure" mode, make sure the LAN port is not connected. <p>Note! WPS-0100 and WPS-0100 USB will disable the wireless if LAN connection is detected.</p>

AppleTalk (Macintosh)

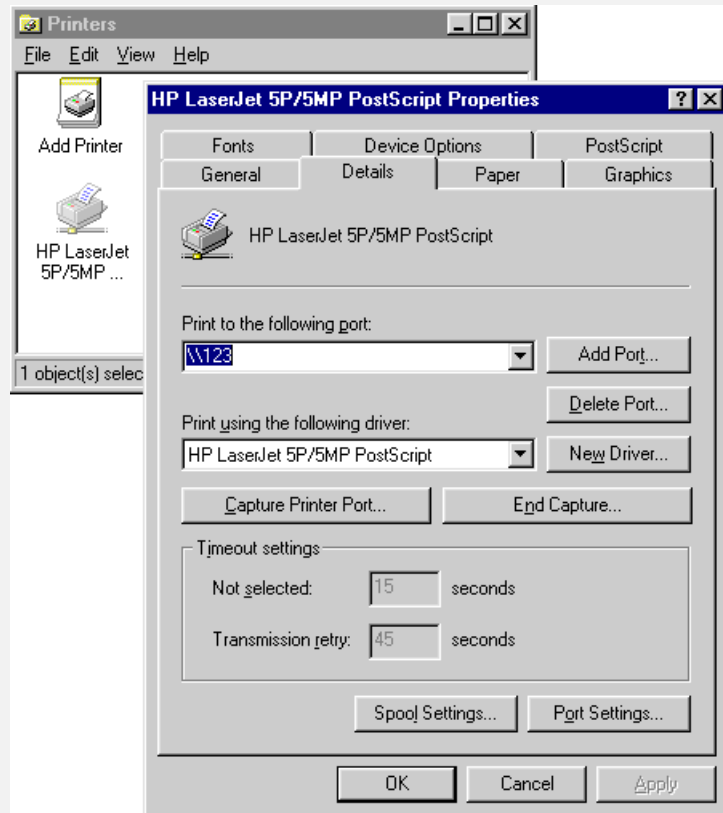
Problem No. 1	Why do I get an incorrect printout?
Solution No. 1	<p>Some possible reasons are:</p> <ul style="list-style-type: none"> • You may have chosen Binary encoding to print the file. Try to use ASCII encoding. • Some of the fonts, which are in your print file may not be supported by the printer. Try selecting LaserWriter 7 instead of LaserWriter 8.
Problem No. 2	Can't find the LevelOne Wireless Printer Server's name in the Chooser.
Solution No. 2	<p>Try the following:</p> <ol style="list-style-type: none"> 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	<p>Check the following:</p> <ul style="list-style-type: none"> • Another LevelOne Wireless Printer Server with the same name may have received your print job. Ensure all LevelOne Wireless Printer 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 <i>Remaining from</i> 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	<p>Select one of these solutions:</p> <ul style="list-style-type: none"> • 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	<p>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:</p> <ul style="list-style-type: none"> • Choose "Calibrated Color/Grayscale" in the <i>Print</i> pop-up menu in the <i>Print Options</i> 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	<p>Check the communication protocols. The computer, LevelOne Wireless Printer Server and printer must all be configured to the same communication protocol.(either Binary or ASCII).</p> <p>To configure your system:</p> <ol style="list-style-type: none"> 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 <i>Print</i> submenu to configure your computer to use the protocol you have chosen. 4. Configure the LevelOne Wireless Printer Server to use the same protocol as the printer and computer.

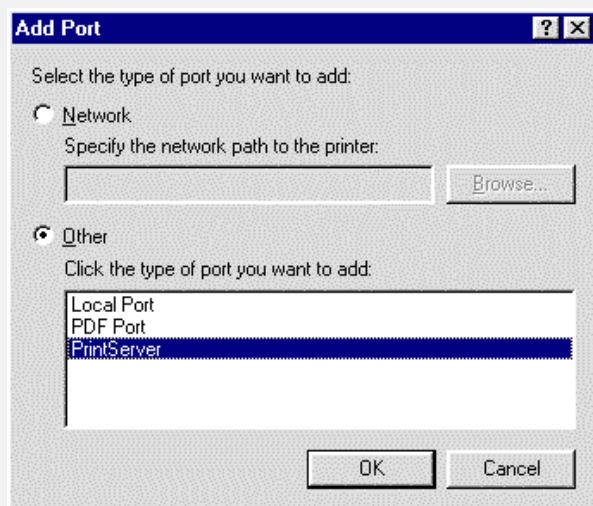
Windows Printing Problems

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	<p>This may be caused by an existing installation of the printer port software. Before attempting another installation:</p> <ul style="list-style-type: none"> • Remove the existing installation • Restart your PC <p>To remove an existing printer port installation:</p> <ol style="list-style-type: none"> 1. Open <i>Start - Settings - Control Panel - Add/Remove Programs</i> 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 LevelOne Wireless Printer Server and clicked "Add", the printer was not installed.
Solution No. 2	<p>Try installing the Printer using the standard Windows tools, as follows:</p> <ol style="list-style-type: none"> 1. Start the <i>Add Printer Wizard</i>. 2. Select <i>Network Printer</i> 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 \\123, as shown below. (Do NOT select <i>Yes</i> for "Do you print for MS-DOS programs?") <div data-bbox="563 1265 1273 1780"> </div> <ol style="list-style-type: none"> 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 (<i>Control Panel-Printers</i>). The printer icon will be grayed out indicating the printer is not ready. 6. Right-click the Printer. and select <i>Properties</i>. Then select the <i>Details</i>

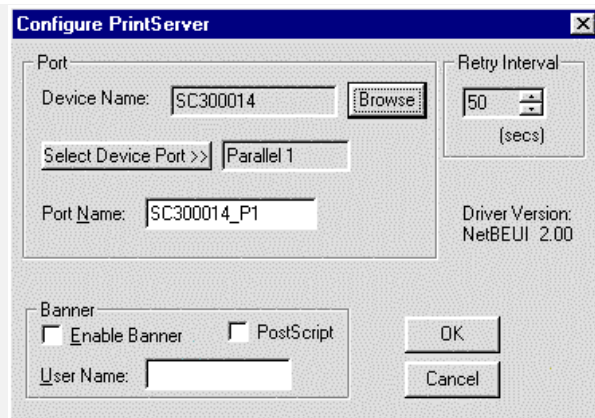
tab, as shown below.



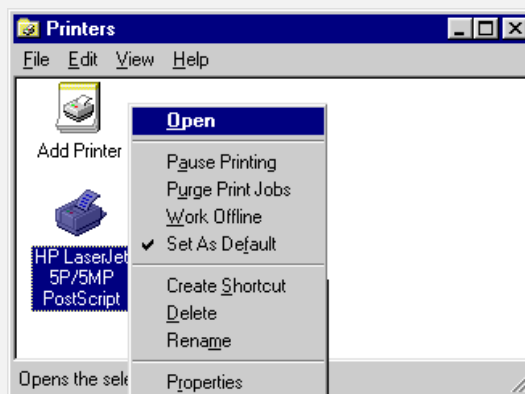
7. Click the *Add Port* button. On the resulting screen, select *Other*, then *Printer Server*, as the port to add, as shown below.



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



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



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

Problem No. 3

I connected and configured a WPS (Windows Printing System) printer as described, but I can't get the print job to print.

Solution No. 3

Printer drivers for WPS printers poll the printer before sending print data. Since the printer is networked, the printer is not found and no data is sent. The solution is to add your printer as a network printer as described in Solution 1 above.

Note: The screens shown in Solution 1 are from Windows 95. Other versions of Windows may look slightly different, but the process is identical. If available, Sharing for the printer should NOT be enabled.

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 LevelOne Wireless Printer Server port cannot print or prints garbage.
Solution No. 5	<p>Check the following:</p> <ul style="list-style-type: none"> • Cable connection between LevelOne Wireless Printer Server and printer. • Serial port configuration, if a serial device. • Printer driver in the application program or Windows matches the printer.
Problem No. 6	The <i>Configuration</i> button on the <i>Printer Status</i> 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.

Appendix A

Specifications



General Specifications

WPS-0100	
Power Consumption	3w max.
External Power Adapter	12V DC
LEDs	4
Parallel Port	1 Centronic female DB-25 connector
Ethernet Connector	10/100BaseT
FCC / CE	Class B
WPS-0100 USB	
Power Consumption	3w max.
External Power Adapter	12V DC
LEDs	4
USB Port (1.1)	1
Ethernet Connector	10/100BaseT
FCC / CE	Class B

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

Parallel Port Pin Assignments

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

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

Regulatory Approvals

Model WPS-0100 and WPS-0100 USB Printer Servers

FCC Statement

This equipment generates, uses, and can radiate radio frequency energy. It has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a domestic environment.

Operation is subject to the following two conditions:

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

CE Marking Warning

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

Appendix B

Network Server Configuration



Windows NT Server

Preparing for TCP/IP Printing

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

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

Windows NT 4.0

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

Adding a TCP/IP Remote Printer

Windows NT 4.0

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

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

Windows 2000 Server

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

The following message will be displayed:

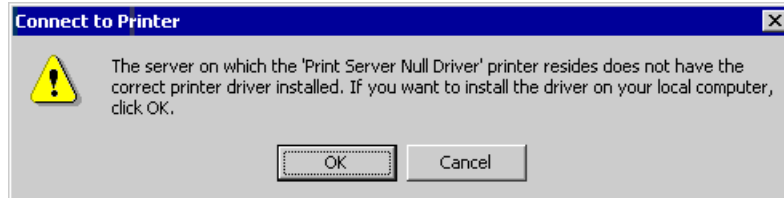


Figure 25: Windows 2000 Message

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

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