

Instant EtherFast® Series

EtherFast® 10/100 PrintServers



Use this Guide to install the following products:

EPSX3 ver. 2 EtherFast 10/100 3-Port PrintServer

PPSX1 ver. 2 EtherFast 10/100 1-Port PrintServer

User Guide

 **LINKSYS**®

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FCC STATEMENT

The EtherFast® 2-Port PrintServer with 4 10/100 Switched Ports has been tested and complies with the specifications for a Class B digital device, pursuant to Part 15 of the FCC Rules. These rules are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used according to the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which is found by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment or devices
- Connect the equipment to an outlet other than the receiver's
- Consult a dealer or an experienced radio/TV technician for assistance

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Chapter 1: Introduction

The EtherFast® 10/100 PrintServers

The EtherFast 10/100 PrintServer is the easiest and fastest way to add up to three printers to your network. Because it is equipped with up to three high-speed printer ports, the 10/100 PrintServer allows any PC on the network to print to any combination of laser, color, bubble jet, ink jet, and even dot matrix printers—including the latest generation of bi-directional and bi-tronic printers from HP, Lexmark, and others. The EtherFast 10/100 PrintServer is the ideal choice for both large corporations and small workgroups with printer sharing needs. Plus, it attaches directly to your network's cabling, so no dedicated print server PC is required. Each 3-Port or 1-Port EtherFast 10/100 PrintServer comes with a full suite of management utilities and support for multiple network protocols. Adding a PrintServer to your 10/100 LAN will save money and increase your network's efficiency.

Features

- Add Up to 3 Parallel or Bi-Directional Printers to Your 10/100 Network
- Stand-Alone Print Server—No Dedicated PC is Required
- Includes Support for Multiple Operating Systems and Protocols
- Compatible with Virtually all Laser and Ink Jet Printers
- Attaches Directly to Network Cabling
- Bi-Directional, DMA-Equipped Parallel Printer Ports for Maximum Printer Efficiency
- 512KB Flash ROM Memory
- Fully Software Configurable
- Free Technical Support—24 Hours a Day, 7 Days a Week, Toll-Free US Calls
- 3-Year Limited Warranty

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Package Contents for the 3-Port PrintServer



Figure 1-1

- One Linksys EtherFast® 10/100 3-Port PrintServer
- One Setup Utility CD-ROM
- One Power Adapter
- One User Guide (not shown)
- One Registration Card (not shown)

Package Contents for the 1-Port PrintServer



Figure 1-2

- One Linksys EtherFast® 10/100 1-Port PrintServer
- One Setup Utility CD-ROM
- One Power Adapter
- One User Guide (not shown)
- One Registration Card (not shown)

Chapter 2: Getting to Know the EtherFast® 3-Port PrintServer

The 3-Port PrintServer's LEDs



Figure 2-1

- Power** *Green.* The Power LED illuminates when the PrintServer is powered on.
- Link** *Green.* If the LAN Link LED is continuously illuminated, the PrintServer is successfully connected to a device through that port.
- Printer 1 (P1), Printer 2 (P2), Printer 3 (P3) LEDs**
- Status** *Green.* For each printer, the Status LED illuminates when the PrintServer is connected to a printer that is ready to print.
- Error** *Red.* The Error LED lights up when there is a problem printing to the indicated printer.

The 3-Port PrintServer's Ports



Figure 2-2

- Power Port** This port on the back of your unit connects your Switch's power adapter.
- Printer 1, Printer 2, Printer 3** These three parallel (LPT) ports connect to your printers.
- LAN Port** This Ethernet RJ-45 port connects to your network device, such as a PC, other print server, remote hard drive, and any other networkable device. Use UTP Category 5 or better cabling with this port.
- Reset Button** Briefly pressing the Reset Button will refresh the PrintServer's connections, potentially clearing any jammed links. Holding in the Reset button will generate a diagnostic print-out.

Reset Button

This button has two functions: to restore the factory default settings and to print a diagnostic test page containing all current settings.

To reset the factory default settings:

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

To generate a diagnostic test printout:

1. Ensure that the PrintServer and the attached Printer are ON.
2. Press the Reset button and hold it in for 2 seconds.
3. The diagnostic test page, containing the current settings, will be printed, unless you have a PostScript printer. PostScript printers are unable to print this page.

Chapter 3: Getting to Know the EtherFast® 1-Port PrintServer

The 1-Port PrintServer's LEDs



Figure 3-1

- Power** *Green.* The Power LED illuminates when the PrintServer is powered on.
- Act** *Green.* If the Act LED is continuously illuminated, the PrintServer is actively sending or receiving data.
- LAN** *Green.* The LAN LED illuminates to indicate that the PrintServer is successfully connected to a device through the LAN port.
- Error** *Red.* The Error LED lights up when there is a problem printing to the indicated printer.

The 1-Port PrintServer's Ports



Figure 3-2

Power Port	This port on the back of your unit connects your Switch's power adapter.
Printer Port	This parallel (LPT) port connects to your printer.
LAN Port	This Ethernet RJ-45 port connects to your network device, such as a PC, other print server, remote hard drive, and any other networkable device. Use UTP Category 5 or better cabling with this port.
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Chapter 4: Hardware Installation

Overview

Before starting your physical installation, be sure to find the PrintServer's Default Name and Node Address. This information may be hard to access after the PrintServer is completely installed in your network and surrounded by wires and computers.

Finding the PrintServer's Default Name

On the back or bottom of the PrintServer, there is a sticker with an SC number printed on it (example: SCA71107). This number is the PrintServer's *Server Name*, which you'll use in the PrintServer driver installation. Since it is written in hexadecimal form, the Default Name (SC number) may include letters as well as numbers. You can also find this using the Bi-Admin Utility.

Connecting The PrintServer to Your Network

The PrintServer does not have an ON/OFF power switch. Whenever its AC power adapter is plugged into a power supply, the PrintServer is powered on. The PrintServer can be powered on before, during, or after you have connected it to your network.

Connecting Your PrintServer to Your Network

1. After powering on the PrintServer, plug one end of a UTP Category 5 (or better) cable into the PrintServer's LAN Port.
2. Connect the other end of the cable into the RJ-45 port of a networked hub or switch. The distance between your PrintServer and the second device should not exceed 328 feet (100 meters).

Connecting Printer(s) to Your PrintServer

1. Connect each printer to one of the PrintServer's parallel (LPT) ports with your printer cable. Some printers, especially bi-directional models, may require special shielded cabling. Consult your printer's user guide for cabling specifications.
2. Power on your printer(s).

Connecting the Power

1. Plug the power adapter cord into the PrintServer's Power port on the back of the PrintServer.
2. Plug the power adapter into the wall. The PrintServer's **Power** LED should light up green.
3. The **Link** or **LAN** LED will become active. If the LED does not light up, see "Appendix A: Troubleshooting" for more information.



Important: Only use the power adapter packaged with the PrintServer. Using a different power adapter could damage the PrintServer.

Your PrintServer hardware installation is now complete, and you are now ready to install your PrintServer software.

- If you are running any version of Windows, go to the next section.
- If you are running NetWare, go to "Chapter 12: NetWare Services Setup."

Chapter 5: Windows Driver Setup

Installing the Windows Drivers



Note: Make sure you have an IP address for the computer and an IP address for the PrintServer. If you need to assign an IP address to the PrintServer, go to Chapter 5: Bi-Admin: PrintServer Management.

1. To begin driver installation, click the **Start** button, and select **Run**. Type **D:\Driver\Win9xnt\Setup.exe** (where "D" is the letter of your CD-ROM drive) in the **Open** field that appears. Click the **OK** button.

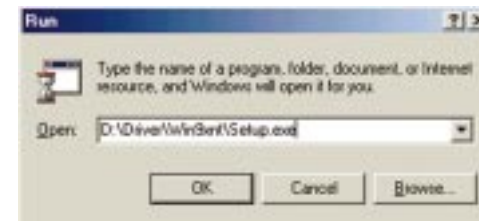


Figure 5-1

2. The Welcome screen appears. Read the text that appears, and click the **Next** button.

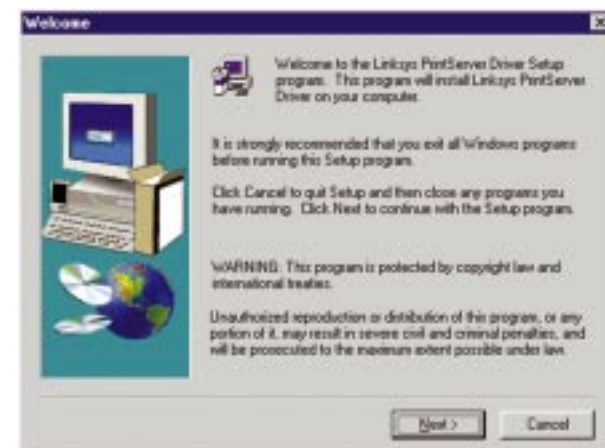


Figure 5-2

3. Click **Next** to accept the default Destination Directory, shown in Figure 5-3 (recommended). If you choose to utilize another directory, click the **Browse** button, and choose the appropriate directory. Then, click the **Next** button.



Figure 5-3

4. The following screen, shown in Figure 5-4, will assign a **Program Folder** to the Windows Taskbar. The default Program Folder is the **Linksys PrintServer Driver**. If you would like to use another name for the Program Folder, type it in the **Program Folders** field or select one from the **Existing Folders** field. Click the **Next** button to continue.



Figure 5-4

5. Driver installation is now completed, but the Print Driver still needs to be configured. The PrintServer will not function properly until the Print Driver is configured. Check the box beside **Configure Print Driver Now**, and click the **Finish** button to continue.



Figure 5-5

6. Before setting up and configuring the Printer Port, follow the directions on the screen, as shown in Figure 5-6, and click the **OK** button to continue.

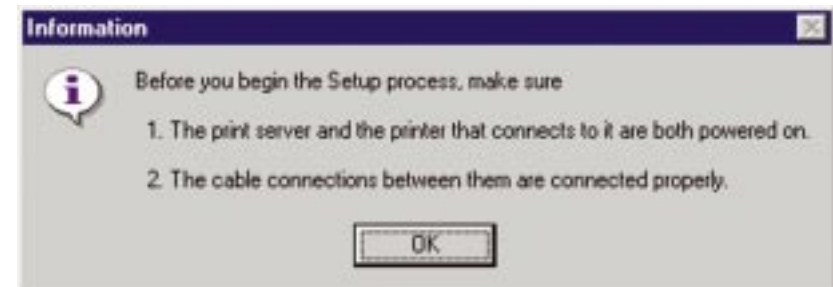


Figure 5-6

7. The Printer Port Setup screen will display the PrintServer and all of the printers with which it communicates. Here, you have the option of installing the printer by highlighting its description and clicking the **Next** button. You can also close this screen by clicking the **Close** button.

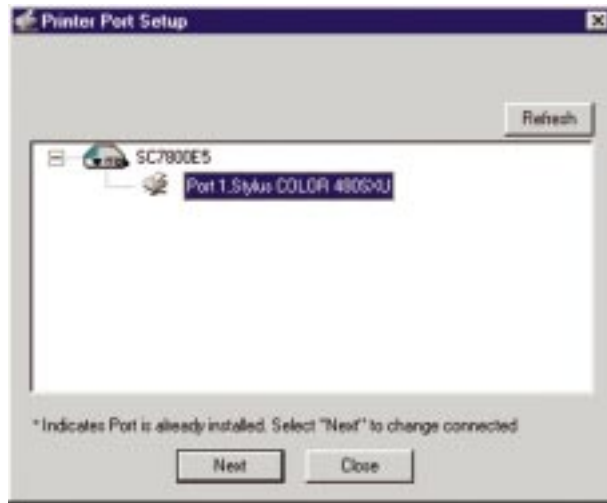


Figure 5-7

8. This will display the Configure Printer Port screen. Any installed printers will be displayed in the **Existing Printers** field. To connect a printer, select the printer from this field, and click the **Connect** button. You can install a printer by clicking the **Add New Printer** button.

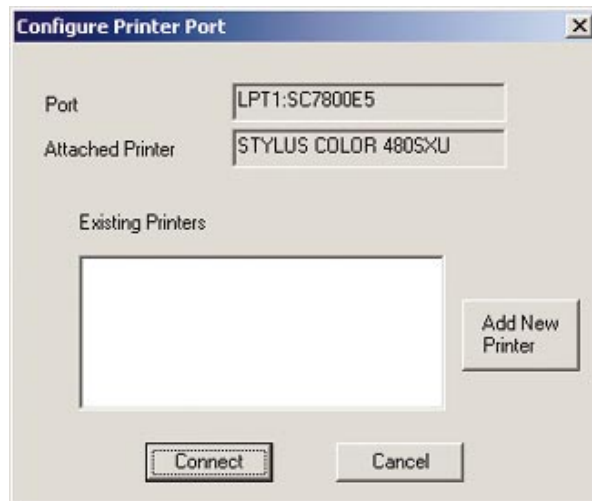


Figure 5-8

9. The Add Printer Wizard screen will come up at this point. Follow the standard procedure for adding printers under Windows. If you have any questions on adding printers, please refer to your printer's documentation.

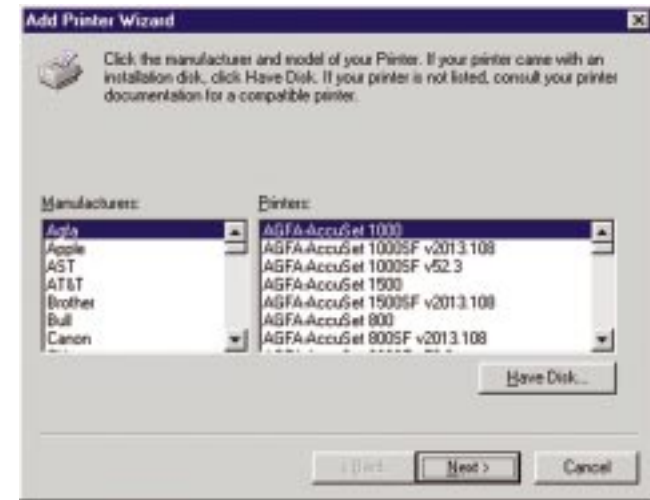


Figure 5-9

10. After your printer(s) have been added, you will return to the Configure Printer Port screen. Click the **Connect** button to connect the printer(s).

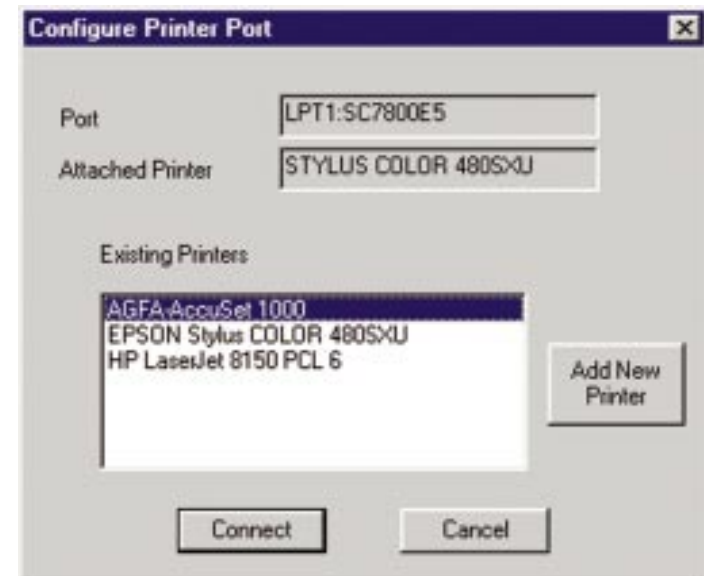


Figure 5-10

11. The Printer Port Setup screen will appear again, displaying the printers which are now communicating with the PrintServer. Click the **Next** button to add any more printers or **Close** to complete the installation and configuration procedure.

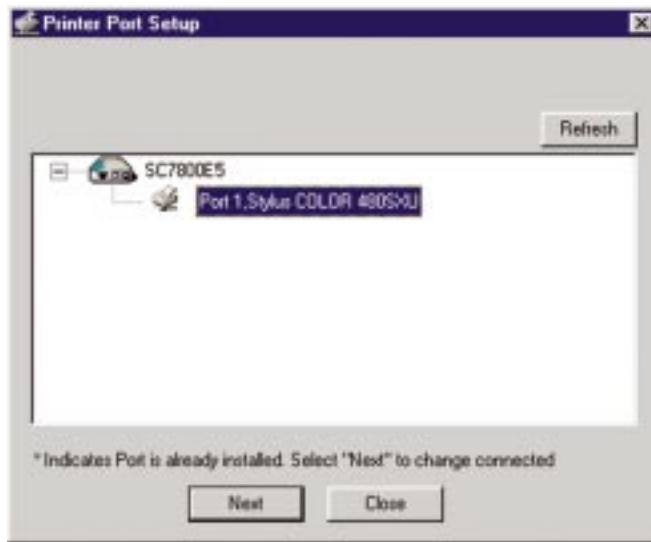


Figure 5-11

Chapter 6: Bi-Admin: PrintServer Management

The PrintServer is managed by a utility program called Bi-Admin on the PrintServer CD. Fully compatible with Windows 95, 98, Millennium, NT, 2000, and XP, Bi-Admin allows you to change the PrintServer's internal settings, check on the unit's status, and perform basic diagnostic tests. Note that the Bi-Admin program must only be installed on the network administrator's computer. Also, Bi-Admin requires that the IPX/SPX protocol be installed initially, which you can always remove later.

Bi-Admin is a Windows-based program, so if you are using the PrintServer in a NetWare DOS-only environment, you must use a program other than Bi-Admin to manage the PrintServer.

Installing the Bi-Admin Management Utility

1. Insert the PrintServer CD into your CD-ROM drive.
2. Click the **Start** button and select **Run**. Type **D:\utility\biadmin\setup** in the provided field and press the **Enter** key.
3. When the setup program's title screen appears, click the **Next** button.
4. Enter the directory name where you want the Bi-Admin program to be installed. The default directory of **C:\Linksys\printserver** is recommended. Click the **Next** button.
5. Continue with the setup program's instructions. Setup will copy the necessary files to your system. Click the **Finish** button to complete the setup.

Starting the Bi-Admin Management Utility

1. To start the Bi-Admin program, click the **Start** button, select **Programs**, click **Linksys printserver admin**, and choose **Bi-Admin**. If the Bi-Admin icon has been created, you can just double-click on it instead. You can drag the shortcut icon onto your Desktop for easy access to the Bi-Admin program.

2. When you see the screen shown in Figure 6-1, click the **OK** button.

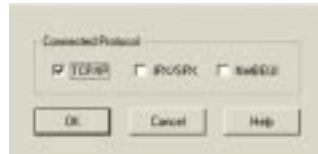


Figure 6-1

3. When the Bi-Admin program appears, it will automatically scan the network for available Linksys PrintServer hardware. Any hardware found on the network will appear in the Default Name, Device Name, and Printer Port categories on the right hand side of window. Default Name is the SC number located on the back or bottom of the PrintServer unit, and cannot be changed.

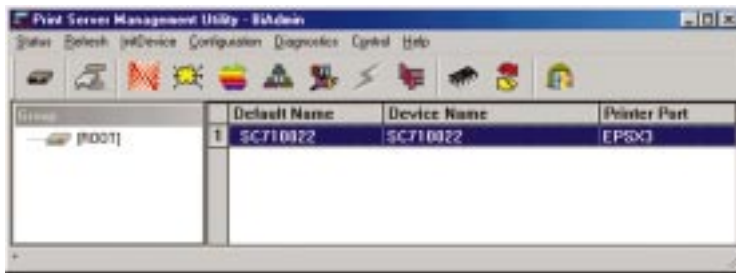


Figure 6-2

4. When any change or operation is executed, you will be prompted for a password. Enter your password, making sure to use the same case (i.e. upper or lower) that you used when creating the password, and press the **Enter** key. If no password was created, press the **Enter** key.

“Device name” is a nickname that you can give the PrintServer to make it more user-friendly for users on the network. It can be changed with Bi-Admin by clicking the **Configuration** button and selecting **System**.

“Printer Port” displays the model of the PrintServer that you are using.



Note: Sometimes the PrintServer’s **Error** or **Status** LED may light up or flicker as it accepts your configuration changes. This is normal.

Bi-Admin Help Files

The Help files for the Bi-Admin program can be accessed by clicking the **Help** button in the Menu bar. These help files offer extensive advice and details about all of your PrintServer’s functions and capabilities.

Using Bi-Admin

Obtaining Device Information:

The Device Information Icon



Figure 6-3

To access information about your PrintServer, either click on it in the Device List window (on the right side of the Bi-Admin window) or highlight the PrintServer and click on the **Device Information** icon, shown here. You can also highlight the PrintServer and then click on **Status** to select *Device Information*. The Bi-Admin program displays the PrintServer’s information, in the following format, in a read-only window:

```
Hardware ID: 0620103428
Firmware Version: 6010
Protocol ID: 005F
Default Name: SCA71107
Server Name: SCA71107
NetWare Info:
  Master File Server:
  NDS Tree Name:
  NDS Tree Context:
  Print Server Mode Status:
  Remote Printer Mode Status: N/A
  Ethernet || Network Number: DD319022
  802.2 Network Number: 02000100
  802.3 Network Number: DD319023
  SNAP Network Number: AA0000AA
AppleTalk Info:
  Printer Type:
  SCA71107:LaserWriter
TCP/IP Info:
  IP Address: 192.168.1.78
  Gateway Address: 192.168.1.254
  Subnet Mask: 255.255.255.0
  Email Server IP Address: 0.0.0.0
  Printing Account Name: N/A
  Redirect Account Name: N/A
SMB Info:
  Domain Name: WORKGROUP
```

You can save this information to a text file by clicking the **Save to Text** button in the **Device Information** window and giving Bi-Admin the location to which the file should be saved.

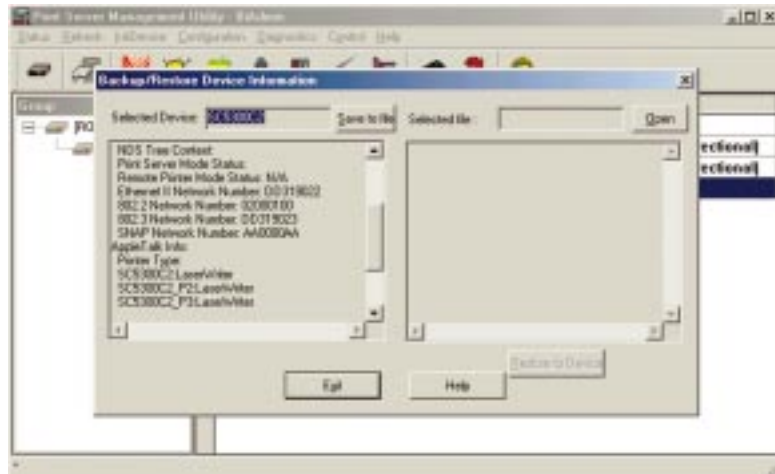


Figure 6-4

Refreshing the Device List:

The Refresh Icon

To force Bi-Admin to refresh its list of PrintServers on the network, click the **Refresh** button and Bi-Admin will scan the network for available PrintServers to update the Default Names, Device Names, and Printer Port charts.



Figure 6-5

Checking the Status of a Printer Port:

Printer Status Icons

The numbered Printer Port icons let you to check the name, status, and printing details of each printer attached to the PrintServer. A password may be required to access this information. You may be able to configure some printers' settings within the **Printer Status** window.



Figure 6-6

Your PrintServer only shows as many parallel port icons as it has ports. For example, with this model, only two parallel port icons will show. Because Linksys PrintServers do not support serial printing, the serial port icon will always remain gray and inaccessible.

Setting the PrintServer's IP Address

The PrintServer's IP address can be easily changed at any time. Click on the **Device Name** of the PrintServer whose address you want to change. Then, click on **Init Device** and **Set IP Address**. This will bring up the **Set IP Address** window.

If the **Default Name** field is empty, enter the Server Name (PrintServer's SC number), copied from the PrintServer's sticker. Enter the new IP Address, Gateway Address (optional), and Subnet Mask for the PrintServer, then click the **Set** button. The new settings will be written to the PrintServer unit. For a few quick TCP/IP setup tips, see "Appendix C: Setting Up the TCP/IP and IPX Protocols."

Also, if you have a DHCP server, you can enable DHCP and leave all the IP, Gateway, and Subnet values on zero. See "Appendix B: DHCP Support for the PrintServer."

Changing the Device Name

The PrintServer comes with a default device name printed on the bottom of the unit, and always starting with the prefix SC (example: SC489392). This device name is the name of the PrintServer any time users on the network query it. To make the PrintServer more user-friendly, you can give it a unique device name to help identify its location (example: Marketing).

To change the PrintServer's device name, click the Device Name of the PrintServer you want to affect. Then, click the **Configuration** button and select **System**. The **System Configuration** window will appear.

To include the PrintServer in a group (for administrative use), use the **Group Name** option, which appears as a drop-down menu.

Enter a new device name for the PrintServer in the Device Name field. When you finish, click the **Save to Device** button. The new setting will be stored in the PrintServer unit. To verify the change, click the **Refresh** icon in the Bi-Admin menu bar. Bi-Admin will search the network for available PrintServers and report back with their device names.

Enabling and Disabling Protocols

If you are not using multiple protocols on your network, you may want to disable one or more of the PrintServer's internal protocols; this may help reduce unwanted network traffic.



Important: Always leave at least one protocol enabled on the PrintServer. Disabling all protocols could leave you without a way to communicate with the unit. Unless you require TCP/IP to be disabled, leave it alone.

To disable one of the PrintServer's protocols, click the Device Name of the PrintServer you want to change. Then, click the **Configuration** button and select **System**. The **System Configuration** window will appear. Each protocol is listed, along with **Enable** and **Disable** buttons. Enable or disable the protocols you want, then click the **Save to Device** button to save the changes.

Attaching Bi-Admin to a Remote PrintServer

The Bi-Admin program can locate Linksys PrintServers on networks other than your own, given your network is running TCP/IP across a WAN or other network-to-network link via a router. To attach Bi-Admin to a remote Linksys PrintServer located on a remote network, click on **Init Device** and select **Attach**. The **Add Cross Segment PrintServer** window will appear. Enter the IP address of the remote unit and click the **Set** button. The remote PrintServer will appear in the list of available PrintServers, allowing you to configure it.

Resetting the PrintServer

If the PrintServer seems locked up for any reason, you can reset it from the Bi-Admin program. To reset a PrintServer, click the **Device Name** of the PrintServer you want to reset, select **Init Device**, and choose **Reset Device**. You can also reset it by pressing the **Reset** button on the back of the unit, or by unplugging its power cord.

Restoring Factory Default

If you have made irreversible changes in configuration that have rendered the PrintServer unusable, or if you simply want to start over from scratch, you can set the PrintServer back to the default mode so that the device will operate just as it did when you purchased it. Click **Init Device** and select **Restore Factory Default**.



Important: Restoring Factory Default will change ALL settings back to their original, default values.

Logical Port Configuration:

Logical Port Configuration Icon



Figure 6-7

To set or change the PrintServer's logical port settings, highlight the PrintServer to be changed and click on the **Logical Port** icon (shown here). The **Logical Port Configuration** window will appear. Make any changes to the settings, and click the **Save to Device** button when you are finished.

Upgrading the Firmware:

The Firmware Upgrade Icon



Figure 6-8

To make sure that the PrintServer is running its most current version of firmware, upgrade the device's ROM chip regularly. To do so, you must be able to access both the Internet and the PrintServer device from your computer. Click the **Upgrade Firmware** icon and follow the instructions on the screen. Updated Firmware can be downloaded from the Linksys website as www.linksys.com.

Exiting Bi-Admin:

The Application Exit Icon

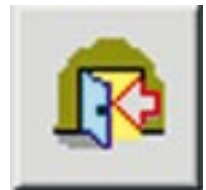


Figure 6-9

To exit the Bi-Admin program, click the **Exit** icon.

Chapter 7: Configuring the PrintServer Using the Web-based Utility

Accessing the Web-based Utility

Use the following directions to utilize the PrintServer's built-in Web-based Utility to configure your PrintServer.

Open your web browser and type **http://** followed by the PrintServer's IP address in the browser's Address box. Use the Bi-Admin software to find the IP address. Then, press the **Enter** key.



Figure 7-1

The Password Screen will appear. Leave the **User Name** field blank. The **Password** field will be blank as well. If you want to password protect your PrintServer, enter a password now. If you don't want to be required to enter this password every time you log on, check the box next to **Save this password in your password list**. This will automatically log you in when you return to this page. (Note: If you change your password, the automatic login will not work until you save the new password over the old one.) If you decide to enter a password, do so and click the **OK** button. Otherwise, just click the **OK** button.



Figure 7-2

The Server Page



Figure 7-3

When the Configure Server screen appears, enter the PrintServer name (in the example shown here *SCA71107*). Then enter your password (if you created one) into the Password field and type it again in the Verify Password field to confirm it. Check all boxes that apply to your network next to the Enable area under Protocols. Generally, AppleTalk is only for Macintosh networks. IPX/SPX and NetBEUI are usually associated with PC-based networks. If you are unsure, however, you may check all boxes. This option, while giving you the greatest chance of connection, increases network traffic. Once you've made all your choices, click the **Save** button.

The Printer Page

Click the Printers tab to open the Printer Status screen. On this screen, you will be able to see the status of any printers connected to the PrintServer. You can also test the printers by clicking the **Print Test Page** button corresponding to the printer you want to test.



Figure 7-4

The TCP/IP Page

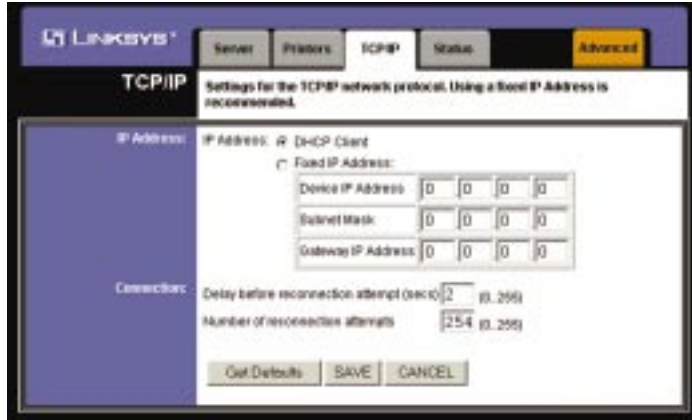


Figure 7-5

Click the **TCP/IP** tab to view or change the PrintServer's TCP/IP values. If you are using DHCP to assign IP addresses, select **DHCP Client**. If you need to assign the PrintServer a **Fixed IP Address** (also known as Static IP Address), select this option and enter the appropriate values under **Device IP Address**, **Gateway IP Address**, and **Subnet Mask**.

To find your Router IP address, consult your router's documentation. While the Device IP Address is unique to the router, the Subnet Mask is the same as any PC connected to the network. If you change the PrintServer's IP address, make sure that you reconnect to the PrintServer using that new IP address. Otherwise, you will not be communicating with the PrintServer.

Under the **Connection** settings, you can set how long you want the PrintServer to delay between attempting connections to the network. You can also specify the number of times that the PrintServer will attempt to make a connection. Enter your chosen values in the boxes provided.

If you want to reset the settings for this screen, you can click the **Retrieve Defaults** button to return to the factory default settings.

If you make any mistakes prior to saving, click the **Cancel** button to exit the screen without making any changes.

Once you are certain of any changes you have made, click the **Save** button to implement the changes.

The Status Page

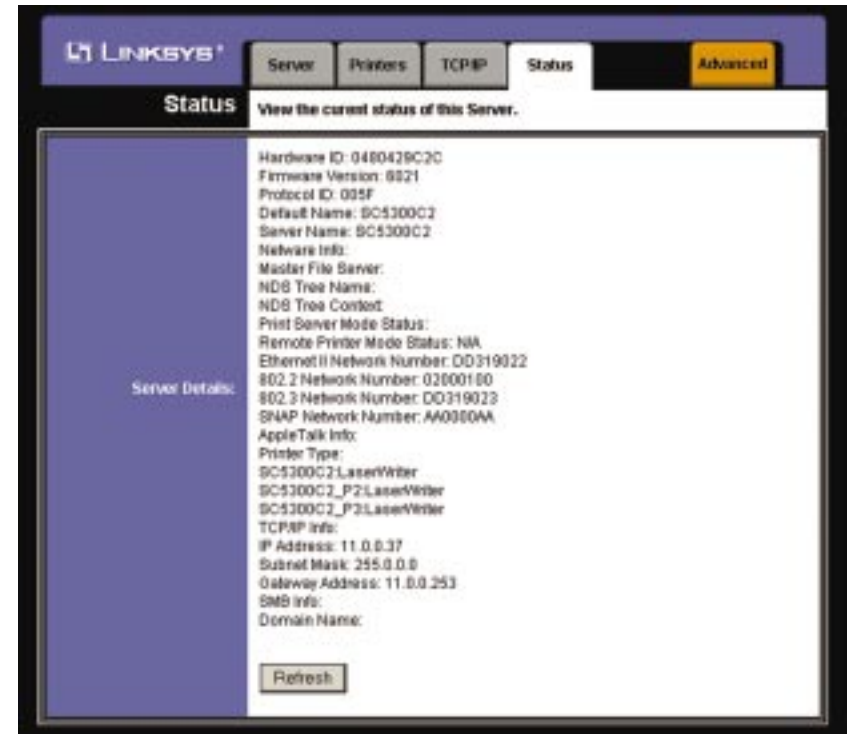


Figure 7-6

Click the **Status** tab to allow you to view information about your PrintServer. No values can be changed on this screen. Clicking the **Refresh** button causes the PrintServer to update this information again.

Chapter 8: Advanced Properties

The Advanced Properties section of the Web-based Utility is for users who have a thorough understanding of networks and network settings. Changing these settings can cause interruption of network communication and make the PrintServer cease functioning properly. To access the Advanced Properties, click the **Advanced** tab in the Web-based Utility.

The AppleTalk Page

AppleTalk is a network communications protocol which allows computers to talk to each other using Ethernet. Typically only Macintoshes use AppleTalk, although other platforms can be made to use it with extra software.

AppleTalk Zones (if available) can be seen in the Chooser, the AppleTalk Control Panel, and the Network Browser. Once you have determined the AppleTalk Zone that you want the PrintServer to be associated with, enter its name in the field next to **AppleTalk zone**.

The Printer Object type can be obtained from the printer's manufacturer. For each printer connected to the PrintServer, you will choose the Communications Protocol that allows the devices on the network to communicate. Choose either **ASCII** or **Binary** for each printer, according to the recommendation of the printer's manufacturer.

If you make any mistakes prior to saving, click the **Cancel** button to exit the screen without making any changes. Once you are certain of any changes you have made, click the **Save** button to implement the changes.



Note: Linksys does not support its products in an Apple networking environment. If you encounter trouble, consult your printer documentation for possible help with settings.



Figure 8-1

The Logical Printers Page

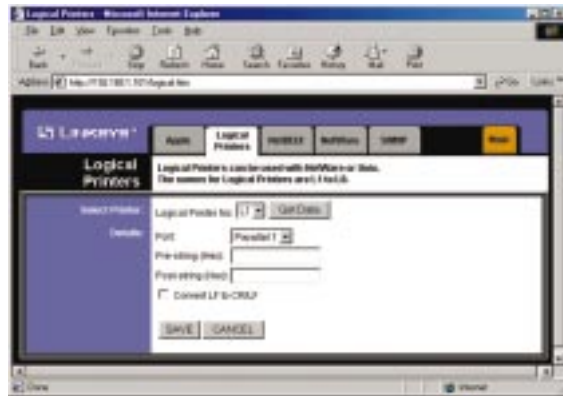


Figure 8-2

Click the **Logical Printers** tab to view or change the PrintServer's logical printer settings.

For each Logical Printer, the following fields are available:

Logical Printer(Port) Select the Logical Printer Port you wish to configure (L1 to L8). Click the **Get Data** button to update the display with the current data for the selected logical printer.

Port Select the Printer Port used by the Logical printer.

Pre-string The printer control string (in hex) to be sent to the printer before each print job. This string cannot exceed 30 characters.

Post String The printer control string (in hex) to be sent to the printer after each print job. This string cannot exceed 30 characters.

Convert LF to CR+LF If checked, LF (line feed) characters are changed to CR+LF (carriage return and line feed).

If you make any mistakes, click the **Cancel** button to exit the screen without making any changes. Once you are certain of any changes you have made, click the **Save** button to implement the changes.



Note: Linksys does not provide any technical support for logical printers configuration.

The NetBEUI Page

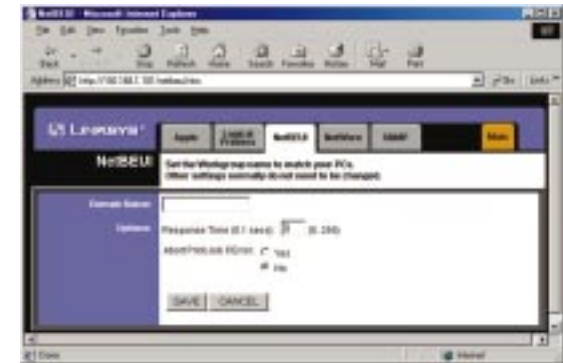


Figure 8-3

Click the **NetBEUI** tab to view or change the PrintServer's NetBEUI connection settings.

Enter the name of the domain that you want the PrintServer associated with in the **Domain Name** field. If you are unsure of the Domain Name, you can find it by looking on any computer already on the network. In Windows 95, 98, and NT, right click **Network Neighborhood** and select **Properties**. Under the Identification tab, there will be listed that computer's name, and the Domain to which it is connected. For Windows Millennium and 2000, right click **My Network Places**. Then right click **Local Area Connection** and choose **Properties**. Then right click **TCP/IP** and choose **Properties**. The Domain name will appear. If you want the PrintServer to be connected to that same Domain, enter that Domain name here. If no Domain name exists there, you will use the Workgroup name from that window.

Under Options, you can also specify the **Response Time** that you prefer for the PrintServer. This is the amount of time (measured in seconds) that the PrintServer will wait for a response from the network before "timing out".

You also have the option to **Abort Print Job if Error**. Selecting **Yes** here will terminate the printing if there is an error of any kind. If you select **No**, print jobs that have errors will be sent to the printer, but may not print properly.

If you make any mistakes prior to saving, click the **Cancel** button to exit the screen without making any changes. Once you are certain of any changes you have made, click the **Save** button to implement the changes.



Note: Linksys does not provide technical support for the NetBEUI protocol.

The NetWare Page



Figure 8-4

Click the **NetWare** tab to view or change the PrintServer's NetWare settings.

NetWare Mode Select **Print Server** or **Remote Printer**, as appropriate. The default is Print Server mode.

Frame Type Select the frame types used by your network. (Ethernet 802.2, Ethernet 802.3, Ethernet SNAP, and Ethernet II) By default, all frame types are enabled.

Remote Printer Mode

Novell Printer Server for P1 NetWare print server to service the PrintServer's parallel port 1.

Novell Printer Server for P2 NetWare print server to service the PrintServer's parallel port 2.



Note: Linksys does not provide technical support for NetWare.

Novell Printer Server for P3 NetWare print server to service the PrintServer's parallel port 3.

Print Server Mode

NDS Tree Name (NDS mode only) The File Server's NDS tree name (root name).

NDS Context (NDS context) Path to the NDS Context. This does not include the Context itself, and each OU should be separated by a period (e.g. department.company).

Master File Server (Bindery Mode only) Name of the PrintServer's master file server.

NetWare Password The password on the NetWare Server. The Print Server device needs this password to connect to the NetWare server.

Job Notification The options are:

- Job notification at only the workstation where the print job originated.
- Job notification at all workstations that you have logged into.

Polling Queue Interval Defines how often the PrintServer will poll the queues to be serviced.

If you make any mistakes, click the **Cancel** button to exit the screen without making any changes. Once you are certain of any changes you have made, click the **Save** button to implement the changes.

The SNMP Page



Figure 8-5

Click the **SNMP** tab to view or change the PrintServer's SNMP settings.

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

The appropriate MIB file must be imported into your SNMP management program using the Import-Compile command. Check your management program for details on this procedure. The MIB file is provided in the Mib folder on the CD-ROM. The name of the file is **Mib2p.mib**.

General

SysContact Text Field - Name of the contact person.
SysLocation Text Field - Location of the contact person.



Note: Linksys does not provide technical support for SNMP management.

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 management station's IP Address, which has the SNMP program installed.

Community This is a text field. Enter the name of the community, normally **public** or **private**.

Access Select the desired level of access, **Read-only**, **Read-Write**, or **Not Accessible**.

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 Trap Receiver's IP Address, where the Trap message will be sent.

Community This is a text field. Enter the name of the community, normally **public** or **private**.

Enable Check to enable; select the severity level. By default, all traps are level one.

If you make any mistakes, click the **Cancel** button, to exit the screen without making any changes. Once you are certain of any changes you have made, click the **Save** button to implement the changes.

Chapter 9: 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 IPP Server's IP Address or URL.

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

- *The PrintServer must have a valid IP Address. For printing via the Internet, the PrintServer'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 IPP Server's correct URL or IP Address. To use a URL rather than an IP Address, you need to register its domain name.*
- *Unless clients are using Windows 2000 or XP, 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.*

Windows IPP Client Setup

Installing using IPP CLIENT.EXE

1. Run this program, located at **d:\driver\ipp\ipp client.exe**, to unzip the included files.
2. The IPP Setup program will then run.
3. Follow the prompts to complete the installation.

IPP Client Configuration for Windows 95, 98, Millennium, and NT 4.0

1. Run the **Add IPP Port** program entry created by the installation. A screen like the one shown in Figure 8-1 will be displayed.

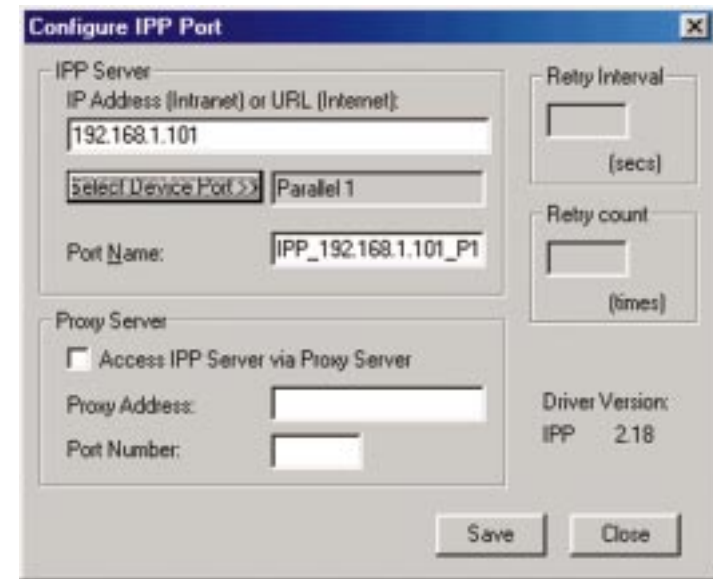


Figure 9-1

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.



Note: Verify that the parallel port appears in the field beside the **Select Device Port** button. If it does not, click the **Select Device Port** button, and select the appropriate parallel port.

5. Click **Save** to create the IPP port on your system. You will see a message confirming that the port has been created and then Figure 8-2.



Figure 9-2

6. Perform one of these steps. 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. Make sure 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 Configure IPP Port screen by performing these steps:

1. Open the **Printers** folder (**Start => Settings => Printers**).
2. Right-click the **IPP Printer** and select **Properties**.

3. Click the **Port Settings** or **Configure Port** button (Details or Port tab, depending on your version of Windows). The Configure IPP Port screen (shown in Figure 8-3) will appear.

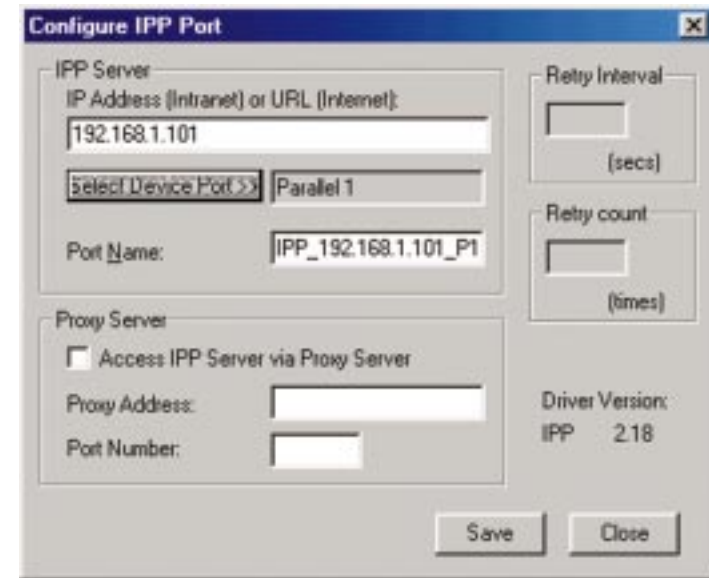


Figure 9-3



Note: Verify that the parallel port appears in the field beside the **Select Device Port** button. If it does not, click the **Select Device Port** button, and select the appropriate parallel port.

There are two settings—Retry Interval and Retry Count—that 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 for Windows 2000 and XP

Windows 2000 and XP have their own IPP Client, and there is no need to install the supplied IPP Client Software. To use this IPP Client with the PrintServer, 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 in Figure 8-4.

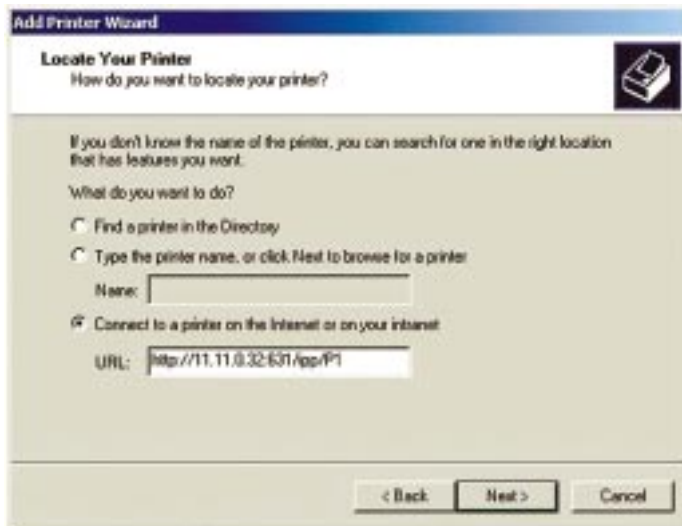


Figure 9-4

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** represents the port number.

Parallel Port 1	ip_address:631/ipp/P1
Parallel Port 2	ip_address:631/ipp/P2
Parallel Port 3	ip_address:631/ipp/P3



Note: These entries are case sensitive. They must be entered as shown, with “ipp” in lowercase, and P1, P2, or P3 in UPPERCASE.

4. If the connection can be established, and the printer on that port is online, the dialog box shown in Figure 8-5 will be displayed. This screen notifies you that the printer driver is not installed. Click the **OK** button.

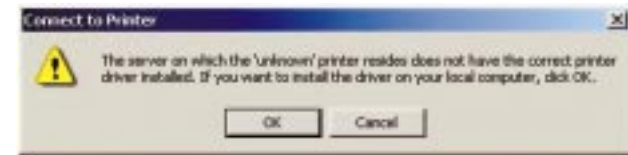


Figure 9-5

5. 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 two settings—Retry Interval and Retry Count—that can be adjusted if you have problems connecting to the IPP Server.

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

Chapter 10: NetWare Services Setup

Overview

The PrintServer provides fully functional printing services in NetWare 5.x, 4.x, and 3.x network environments.

The PrintServer communicates through the TCP/IP (for NetWare 5.x) and IPX/SPX protocols, which are built into the NetWare operating system software. This section explains how to configure your computers to print from the PrintServer in a NetWare 5.x, 4.x or 3.x environment.

Configuring and integrating the PrintServer into your NetWare network can be achieved with various software tools. Depending on the NetWare version you use, you may need to use NetWare programs such as NWADMIN or PCONSOLE. If you are installing the PrintServer using the IPX/SPX protocol, you will also need to use the QUICKSET program found on the PrintServer CD during part of the setup.

The Bi-Admin program can also configure and manage the PrintServer manually with NetWare. Instructions for installing and using Bi-Admin can be found in the section titled Installing the Bi-Admin Management Utility found in “Chapter 8: Bi-Admin: PrintServer Management.” If you are using a GUI, you may want to install Bi-Admin now before attempting to set up the PrintServer to work with your file servers.

Print Server Mode and Remote Printer Mode in NetWare

In NetWare terms, a “print server” is a software resource that communicates between the PrintServer and the NetWare network. Print jobs are handled quickly and minimal network bandwidth is required, but the NetWare print server (software) occupies one of the file server’s user licenses.

In contrast, a “remote printer” is a file server resource that distributes print jobs to physical devices like the PrintServer. Although it occupies no file server user license, it is slower than a print server resource, and generates more network traffic. When in doubt, set up the PrintServer in print server mode, especially on networks needing high-speed printing.

The PrintServer can be installed on a NetWare client-server network in either print server mode or remote printer mode.

Before You Begin



At this point, you must have:

- the PrintServer hardware completely installed.
- your NetWare network fully operational.
- Administrator or Supervisor rights on the file server(s), or be logged on as an Administrator or Supervisor.
- access to your server’s administrative utilities like NWADMIN and PCONSOLE.
- the PrintServer Setup CD in the CD-ROM drive.

To begin the installation, choose a mode of printing operation and turn to the correct page for instructions:

- **for NetWare 5.x**

Pure IP Printing Mode, see the next section.

- **for NetWare 5.x, 4.x, 3.x**

IPX Printing Mode: See the section called IPX Printing in NetWare 5.x, 4.x and 3.x.

Pure IP NetWare 5.x Setup



Note: To set up DHCP on the PrintServer, install Bi-Admin first, and then install DHCP. Install the printer driver last.

These instructions set up the PrintServer to work in a pure IP NetWare 5.x environment. Consider the following example:

```
Tree Name:      Novell
Organization:   TeSupp
CN:             Admin.TeSupp
Server Name:    TECH_50
CD-ROM Drive:  D
PrintServer IP: 192.168.0.3
```



Note: Throughout the directions, replace these settings with your own, since these parameters are given as an example only.

To enable printing from the PrintServer on a pure IP NetWare 5.x network:

- First, create an NDPS Manager on your server. This only needs to be done once, even if you create more than one NDPS printer.
- Create NDPS printers with NetWare Administrator.
- Configure Public Access Printers for your computers to print from.

Creating an NDPS Manager

1. Log on to a NetWare 5.x file server as an Administrator.
2. Run the NetWare Administrator application **Nwadmn32.exe**, which should be located in F:\public\win32 on your network. Otherwise, see your NetWare user guide or your network administrator to find the file location.
3. When the program runs, select the organization on NetWare Administrator in which you want the NDPS Manager object to reside, e.g. TeSupp.
4. Right-click on the **Create** button and select **Object** from the menu bar. The “New Object” window appears.
5. Select **NDPS Manager**, which will bring up the “Create NDPS Manager Object” window.
6. Type a new name into the **NDPS Manager Name** field at the top of the window, e.g., P_MGR.

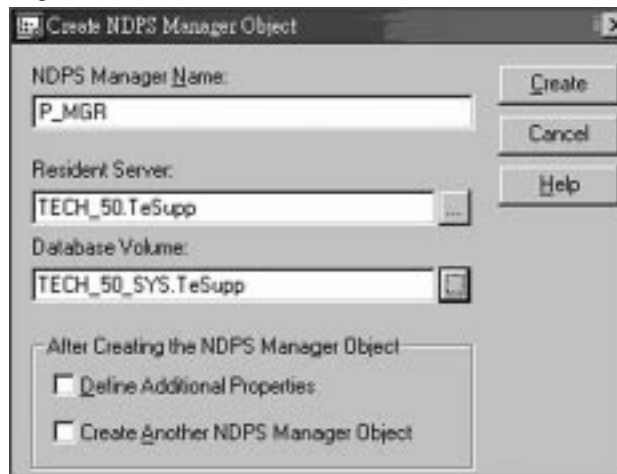


Figure 10-1

7. Click the button that looks like three dots beside the **Resident Server** field. With this, you can browse and select the name of the server to which you want to assign this NDPS Manager.
8. Click the button that looks like three dots beside the **Database Volume** field. With this, you can browse and assign a location to the NDPS Manager database, e.g., TECH_50_SYS.TeSupp.
9. Click the **Create** button. The new NDPS Manager will appear in the main Browser window.
10. Go to your NetWare server and type **LOAD NDPSM**. Activate the NDPS Manager and select the NDPS Manager you just created.



Note: To autoload the NDPS Manager each time you boot up the server, add the following line to your server's AUTOEXEC.NCF file:

LOAD NDPSM P_MGR.TeSupp

Attention! “NDPSM P_MGR. TeSupp” must be substituted for your actual object name, as it is only an example name.

Creating NetWare 5.x NDPS Printer(s)

After creating an NDPS Manager, you can now create NDPS printers by using NetWare Administrator. To create Public Access Printers using the NDPS Manager Object in the NetWare Administrator application, follow these steps:

1. Run the NetWare Administrator application **Nwadmn32.exe**, which should be located in F:\public\win32 on your network. Otherwise, see your NetWare user guide or your network administrator to find the file location.
2. Right-click on the container where you would like to create the printer and select **Create**.
3. Select **NDPS Printer**.
4. Give the printer a name and click the **Create** button.
5. The “Create Printer Agent” will appear. Click the **Browse** button for the NDPS Manager name. Select the **Manager** and click the **OK** button.

6. Select the available printer. If your printer is not available, select **None**.
7. Select **Remote (LPR on IP)** in the “Connection Type” field.
8. Click the **Next** button. Type the IP address assigned to the PrintServer. In the “Printer Name” field, give your printer a name, e.g., L1.
9. Click the **Finish** button. A window will appear, asking you to select drivers.
10. When you are asked to select drivers, select **None**. The new Printer Agent “S_Printer” now appears in the “Printer Agent List” window.

Configuring Public Access Printers

To enable your computers to print through the PrintServer, follow these steps. Before you begin, make sure you install IntranetWare Client (Version 2.2 or higher) on each computer that will be using NDPS printers.

To install an NDPS printer on your computer, use the NetWare Printer Manager utility. If you are using Windows 95, 98, Millennium, NT 4.0, 2000, or XP, run the **Nwpmw32.exe** program, which should be located at F:\public\win32 on your network. See your NetWare documentation or your network administrator to confirm the file location. After the program runs:

1. Run the NetWare Printer Manager utility on your computer. On the Printer Manager Menu bar, select **Printer** and click the **New** button.
2. Click the **Add** button.
3. Select the available printer (e.g.: S_Printer) and click the **Install** button. Then, click the **Close** button.

The printer (e.g., S_Printer) now appears in the main **Printer Manager** window, ready for print jobs.



Figure 10-2

IPX Printing in NetWare 5.x, 4.x and 3.x

Print Server Mode

To set up the PrintServer under NetWare using the IPX/SPX protocol for NetWare 5.x, use an application called Quickset.exe, which is found in the **D:\Utility\DOS** directory on your PrintServer CD.

1. Log in to the NDS network as an Administrator or as a user with Administrator privileges.
2. Go to the Context (location) where you wish to create the PrintServer object.
3. To use the NetWare Print Server mode, use the following syntax:
Quickset Unit_Name (/UN=P) (/Q1=W) (/Q2=X) (/Q3=Y)

The **Unit_Name** is the PrintServer's Default Name you copied from the white bar code sticker on the PrintServer, in the form of “SC” plus six digits, which are in hexadecimal form, so you may see letters as well as numbers.

P will be the default name of the PrintServer, if you do not specify this option here.

W, **X**, and **Y** are the queue names for parallel ports 1, 2, and 3, respectively. If you do not use this option, then the NDS mode uses the following default queue names: **NDS_Q1**, **NDS_Q2**, and **NDS_Q3** (for parallel ports 1, 2, and 3, respectively.) In the binary mode, **Q1**, **Q2**, and **Q3** will be the default names.

Here's an example, which may differ from your setup depending on what version of NetWare you are using:

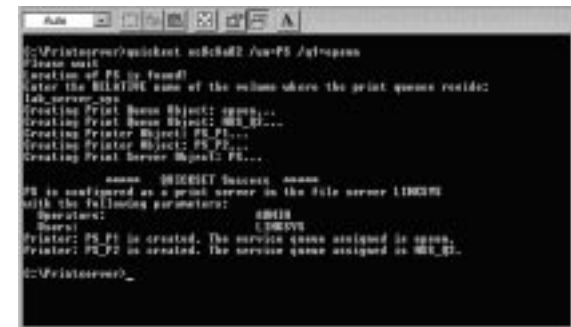


Figure 10-3

quickset SC0C8A02 /un=PS /q1= epson

This example installs the PrintServer SC0C8A02 as a NetWare PrintServer in the current location. The PrintServer's default name is now "PS," and "epson" is the name for the first printer queue.

Remote Printer Mode

The instructions below configure the PrintServer for Remote Printer Mode, and establish communication between it and your NetWare 4.x network.

Before you begin, make sure you have already set up a NetWare print server resource on a file server or elsewhere and have its name handy.

You can automatically set up the PrintServer under NetWare 4.x or 3.x with QUICKSET, a small one-time program run from either DOS with simple command-line arguments or manually through the PrintServer's PSCONFIG or Bi-Admin programs.

Log in as an Administrator or a user with Administrator's rights. Run the QUICKSET program in the D:\Utility\DOS directory of the PrintServer CD. The program must run from a MS-DOS prompt. The syntax of the program's command-line arguments must be entered as one long command, as below:

Quickset Unit_Name R (/UN=P) (/Q1=W) (/Q2=X) (/Q3=Y)

Unit_Name is the PrintServer's Default Name you copied from the PrintServer's white bar code sticker.

P is a user-friendly name you can give the PrintServer (for example: /UN=MARKETING).

R is the name of the print server resource on the file server that the PrintServer device will log into.

W, X, and Y are the queue names for parallel ports 1, 2, and 3, respectively. If you do not use this option, then the NDS mode uses the following default queue names: **NDS_Q1**, **NDS_Q2**, and **NDS_Q3** (for parallel ports 1, 2, and 3, respectively.) In the binary mode, **Q1**, **Q2**, and **Q3** will be the default names.

Appendix A: Troubleshooting

If your PrintServer is not working correctly, follow the advice in this chapter. If you have trouble printing, see the Hardware Issues section first, and then go to the Printing sections. If this Troubleshooting section does not resolve your problem, please see "Appendix I: Contact Information" to contact Technical Support.

Hardware Issues

1. All the LEDs on the front of the PrintServer are off.
 - Check the power supply and the power connection.
2. The PrintServer's Status LED stays lit continuously.
 - Reset the PrintServer by unplugging the power supply and plugging it back in, or by pressing the Reset button on the back of the PrintServer.
3. I am using DHCP, and the PrintServer gets an IP Address conflict involving the PrintServer.
 - If the PrintServer is left on when the DHCP Server is turned off, the PrintServer will retain its IP Address without informing the DHCP server. Reset the PrintServer so it will obtain a new IP Address. This problem also arises if you assigned a static IP Address within the range used by the DHCP server. If so, use another address NOT within the range used by the DHCP server.

General Printing Issues

1. A printer connected to the PrintServer cannot print or prints garbage.
 - Check the following:
 - a. Cable connection between the PrintServer and printer.
 - b. The printer driver in the application program or Windows matches the printer.
 - c. Cabling distance should not exceed 15 feet.
2. The Configuration button on the Printer Status screen in Bi-Admin is grayed out, even though my printer is bi-directional.
 - The button is unavailable until the printer has finished its print jobs and sits idle.

NetWare Printing Issues

1. The PrintServer prints garbage.
 - Print a diagnostic file using PSCONFIG or Bi-Admin program.
 - a. Run PSCONFIG and select your **PrintServer** from the list. Then, select **Print Diagnostic Report**
 - b. Select each port in turn and print a diagnostic report.
 - c. Check to see if the diagnostic report printed. If the diagnostic report printed, the problem may be caused by incorrect system configuration. Go to the next step. If the diagnostic report printout is not okay, check your printer.



Note: Windows-only printers may not print the diagnostic page.

- Print a test text file and a test graphic file. If the text file prints correctly but the graphic file prints garbage, then specify /NT (no tabs) option for NPRINT or CAPTURE commands and print again. If both print incorrectly, go to the next step.
- Temporarily disable the PrintServer servicing the print queue following the step-by-step instructions below:

NetWare 2.x and 3.x

- a. Run PCONSOLE, select **Print Queue Information**, select the print queue that the PrintServer services, and select **Current Queue Status**.
- b. Set “Servers can service entries in queue” to **NO**.
- c. Press **Esc** and select **Print Queue ID**. Record the queue ID.
- d. Send your test files to the print queue using normal print commands.

NetWare 4.x and 5.x Bindery & NDS modes

- a. Run PCONSOLE, select Print Queues, select the print queue that your PrintServer services, select **Status**.
 - b. Set *Allow service by current print servers* to **NO**.
 - c. Press the **Esc** key and select **Information**. Record the queue ID.
 - d. Send your test files to the print queue using normal print commands.
- Reroute network printing to local printing.
 - a. Disconnect the printer attached to the PrintServer and connect it to LPT1 of your PC.
 - b. Change to the drive and then the directory on the file server that contains the print queue. The directory will have the name of the queue ID (e.g. \queues\Q_ID for NDS mode, or system\Q_ID for Bindery mode).

- The test files you printed should be in the queue directory. Print these files to the local printer using the **COPY** command with the /b option (for example: copy /b test.txt LPT1).
- Compare the printouts from the PC and the PrintServer. If the printouts are the same, then the problem is not the PrintServer. The problem might be that an incorrect printer driver was chosen or the timeout setting in the CAPTURE command is too short. If the printouts are NOT the same, there may be a problem with the PrintServer.
- Enable queue service.
 - a. Disconnect the printer attached to LPT1 of your PC and connect it to the PrintServer.
 - b. For NetWare 2.x or 3.x, run PCONSOLE and Select Print Queue Information. Then, select the print queue and select **Current Queue Status**. Set Servers can service entries in queue to **YES** For NetWare 4.x bindery and NDS modes. Run PCONSOLE and select **Print Queues**. Then select the print queue and select **Status**. Set “Allow service by current print servers” to **YES**.

2. The PrintServer does not appear in the Active Device List of the PSCONFIG program.
 - Make sure that the PrintServer is on the same network segment as your PC.
 - Load the NetBEUI or TCP/IP protocol on your PC, so that Bi-Admin can try connecting using NetBEUI or TCP/IP. Once connected, check the following:
 - a. The NetWare protocol is enabled.
 - b. The Ethernet frame type of your PC may be different than the one with your PrintServer. Enable all Ethernet frame types.
3. My PrintServer is configured as a NetWare PrintServer, but cannot log in to a file server.
 - Get the PrintServer information using PSCONFIG or Bi-Admin. If the device is configured as a NetWare print server, the information will look like the following:

```
Server Name: SC110049
NetWare Information:
Master File Server: ICE
Print Server Mode Status:
Your_File_Server: Current Status
Remote Printer Mode Status: N/A
```

- Make sure the master file server name is assigned correctly.
 - Check the Current Status of Your_File_Server:
 - Connected:**
No action required
 - No file server:**
Assign a master file server using PSCONFIG or Bi-Admin
 - Connecting to Server:**
Wait and check if the file server exists
 - Password Mismatch**
Clear the NetWare password with PCONSOLE, or set the correct password for the PrintServer using PSCONFIG or Bi-Admin.
 - Print Server Not Defined**
Install PrintServer again
 - Check NetWare to see if the log in status of the PrintServer to the file servers is “Ready”. If it is not, check the error message and perform the required corrective action.
 - Check the NetWare file server's name for character length. If it is over 20 characters long, rename it with less than 20 characters.
 - If the file server is not in the status list and the PrintServer has logged into the master file server, it means that the file server has not been serviced by the PrintServer. Check to see if the file server is in the list of File Server To Be Serviced item of PCONSOLE. If not, insert the file server name to the list.
4. The PrintServer is configured as a NetWare Remote Printer and can't log in to the NetWare PrintServer.
- Get the PrintServer information as described in Issue Three.
 - Check the fields after the following.
 - Remote Printer Mode Status:**
For each logical printer, there will be a status entry. The status will be one of the following.
 - Connected:**
No action required
 - Unable to find server:**
Load NetWare Print Server.
 - Connecting to Server:**
Wait and check if the NetWare print server is loaded
 - Printer not Defined**
Install the PrintServer as a remote printer of a NetWare print server.
 - Check NetWare to see if the PrintServer is ready. If it is not, check the error message and perform the required corrective action.
- Check the NetWare print server's name. If it is over 20 characters, rename the NetWare print server name using no more than 20 characters.
5. The PrintServer cannot print the jobs sent to the print queue.
- The printer attached to the PrintServer should be on-line.
 - Verify that the PrintServer is logged into the file server. (See Issue Three.)
 - Check the current status of the queue. Run PCONSOLE and select Print Queue Information. Then select the queue and select **Current Queue Status**. There should be three YESes. If not, set them to **YES**.
 - Check if the NetWare printer number is correct.
 - 0 = parallel port 1 of the PrintServer.
 - 1 = parallel port 2 of the PrintServer.
 - 2 = parallel port 3 of the PrintServer.
 - Check to see if the PrintServer is a static queue server to the queue. Run **PCONSOLE** and select **Print Server Information**. Then, select **Print Server Configuration** and select **Queues Serviced by Printer**. Select your desired printer and check if the queue is on the list. If it's not, insert the queue into the list by pressing **Insert** key and select the queue. Then, reset the PrintServer to service the new queue.
 - If the total number of queues to be serviced is over the limit of 56, reduce the number of queues.
6. I used the Capture command to print a job but the job was separated into two parts.
- The time-out setting in Capture command may be too short. Increase the timeout value of the Capture command by using the option /TI=n of the Capture command to increase the time-out value, where **n** is the value of timeout.
7. PSCONFIG or Bi-Admin shows "No Response."
- The network traffic may be busy now. Wait for a minute and try it again.
 - Verify that the power is on.
 - Verify that the network cable is connected.
 - The node address of the PrintServer may be the same as the node address of another device on the network. If so, change the node address.
8. QUICKSET timed out when checking if the device had logged in to the file servers.
- This means that the PrintServer did not log in the master file server. It might be that the Ethernet frame types do not match.
 - a. Verify the PrintServer's frame type by using PSCONFIG or Bi-Admin.

- b. Enable the PrintServer's frame type to the frame type that the master file server uses and disable all other frame types.
9. I cannot receive "Notify message" in the NetWare 4.x environment.
 - Make sure you are a **Notify** member of the PrintServer.
 - Run NetAdmin and set the name of the Default Server to receive notification.
10. I cannot use PCONSOLE or Bi-Admin to see Printer Status or the current server status in PrintServer Information is showing Down in the NetWare 4.x environment.
 - It may be that you created the print server object in NetWare 3.x environment and used PCONSOLE in NetWare 4.x to view the status. Try the following:
 - a. Ensure the PrintServer is ON.
 - b. Delete the print server object of the PrintServer.
 - c. Install the PrintServer again in NetWare 4.x NDS environment.
11. The "String Before Job" and/or "String After Job" settings in the Logical Printers don't work properly.
 - Check the length of the control strings. No string can exceed **15** characters.
 - Check that the control strings are in **HEX**.
12. How do I service additional NetWare bindery file servers?
 - If your PrintServer is configured as a NetWare Print Server and you want it to service more than one bindery file server, perform the following steps.
 - a. Log in, with supervisory rights, to the other file servers you want the PrintServer to service.
 - b. Create queues and a print server name for your PrintServer on each file server you want to service.
 - c. Log in, with supervisory rights, to the PrintServer's master file.
 - d. Run **PCONSOLE**.
 - e. Select **Print Server Information** and select the PrintServer in the print server list.
 - f. Select **Printer Server Configuration** and choose **File Server To Be Serviced**.
 - g. Insert the file server names of the other file servers to be serviced by the PrintServer.
 - h. Reset the PrintServer.

13. How do I attach to more than one NetWare Print Server?
 - In NetWare Remote Printer mode, if you want each port of the PrintServer to attach to a different NetWare Print Server, perform the following steps.
 - a. Use **PCONSOLE** to create and assign the required printers and queues as detailed in the Remote Printer Mode section.
 - b. Run **PSCONFIG** and select **Set to NetWare Remote Printer Mode**. Enter the correct NetWare print server names in the print server name fields and select **Execute Setup**.

Windows Printing Issues

1. When printing from some software applications, such as PowerPoint, it takes a long time and the printout is incorrect.
 - The problem is due to the printer being configured to *Start printing after the first page is spooled*. To change this setting:
 - a. Open the **Control Panel**, select **Printers** and click on your printer.
 - b. Select **File**, choose **Properties**, and click **Details**.
 - c. When the **Details** screen appears, click the **Spool Settings** button.
 - d. When the **Spool Settings** dialogue field appears, choose **Start printing after last page is spooled** and click the **OK** button.
2. While adding my printer as instructed in Windows 95, 98, or Millennium, I received a message stating that Printer could not be found.
 - Some printer drivers, when configured as Local Printer, will poll the printer to see if it is connected. Since the printer is networked, the printer can not be detected. To fix this, do the following:
 - a. Select **Network Printer** when asked "How is the printer attached to your computer?"
 - b. When prompted for Network Path or Queue name enter a dummy value such as \\SCnum\P2 for LPT2. Then, click the **Next** button.
 - c. The printer wizard will display a message stating the Network Printer is off-line. Continue to install the printer as normal.
 - d. When finished, open the **Control Panel**, choose **Printers** and select your printer. The printer icon will be grayed out indicating the printer is not ready.
 - e. Select **Properties** and click on **Details**. In the **Print to the following port** box, select **PrintServer**.
 - f. Click the **Apply** button. Then, click the **OK** button. This will close the Properties window.
 - g. Select the printer and go to the **File** menu. Verify that the Work off-line option is **OFF**.

- h. If the printer is connected and powered **On**, the printer icon should no longer be grayed out, and you should be able to print.
3. I connected and configured a WPS (Windows Printing System) printer as described, but I can't get the print job to print.
- WPS printer drivers 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 Issue Two. The following is a list of a few common WPS printers:
- Canon LBP-430W
 Epson ActionLaser 1300/W, Epson EPL-5500/W
 Epson Stylus Series, Lexmark WinWriter Series
 NEC SuperScript series, Olivetti PG304
 Samsung MyLaser Series
 HP DeskJet CX and CS Series
4. My text prints just fine, but my graphics come out looking like garbage.
- Get the latest driver for your printer from the manufacturer. Then, click on **Start**, select **Settings**, and choose **Printers**. Right-click on the printer driver and choose **Properties**.
- For Windows 95, 98, or Millennium users, select **Details** and click the **Spool Setting** button. Change the setting to **Spool Data Format (RAW)**. Click the **OK** button. Then, click the **OK** button again.
- NT 4.0, 2000, or XP users: After you get into the **Properties** windows for the printers, click the **Print Processor** button from the **General** tab and choose **RAW** or **EMF**. Check the **Always Spool RAW Data Type** option and click the **OK** button. Then, click the **OK** button again.
5. When trying to configure or change the TCP/IP settings on the PrintServer, I get an "SPX Connect" Error.
- The utilities that the PrintServer uses require the IPS/SPX protocol to be installed. Verify these have been installed, then check cabling and make sure there is a link light on the hub and PrintServer. You can also restore the factory default using Bi-Admin's configuration menu.

6. Some DOS-based programs do not work on a Windows 95/98 peer-to-peer network.
- Some DOS application require an **LPT port** to print. You can enable the NetBEUI protocol and capture a port but you must have NetBEUI installed on your network. Follow the instructions below:
 - Run Bi-admin and select the **Configuration Menu** option. Then, select **NetBEUI**.
 - At the Domain prompt, enter your network workgroup name.
 - Click the **Save to Device** button.
 - Open **Network Neighborhood**. You should see the PrintServer on your network. If not, press **F5** a few times to refresh the window.
 - Double-click on the **PrintServer**, (e.g. "sce15223" or "scc15232").
 - You should see the port in the form of "Pn", (e.g. P1, where n is the port number on the PrintServer).
 - Right-click on the port you want to capture (e.g. P1) and select **Capture Printer Port**.
 - A window will appear asking for a Device. Select the port you want, e.g., LPT1, LPT2.
 - Put a check on the **Reconnect at logon** option so you can connect to the PrintServer when you reboot your computer.
 - To set up the printer, click the **Start** button, select **Settings**, and choose **Printer**.
 - Right-click on the printer you want to set up (e.g. the HP LaserJet 5L) and select **Properties**.
 - Click on the **Details** tab.
 - Change the Print to the LPT port number you selected in step h of these instructions.
 - Click the **Apply** button and then click the **OK** button to finish.
 - Reboot your PC.



Note: Linksys does not provide any technical support for problems with NetBEUI. Consult your operating system documentation if you need help.

Appendix B: DHCP Support for the PrintServer

To use DHCP, which assigns non-static IP addresses, you must have a DHCP server. Otherwise, the PrintServer's IP address will remain unknown and connecting to it will be impossible. In this case, ignore DHCP and configure the PrintServer for a static IP address.

DHCP is enabled by default. If you want to change settings, you must run the Bi-Admin program. When Bi-Admin loads, it scans the network for PrintServers and displays a list of PrintServers. Highlight the PrintServer to be set up, enter the PrintServer's password if one has been assigned, and click the **OK** button.

After entering the program and selecting the PrintServer to be configured, click on **Configuration** in the menu and choose **TCP/IP** from the drop-down field. The **TCP/IP Configuration** window will appear. Select **Enable** to enable DHCP and click **Save to Device**. Then, exit the Bi-Admin program. To install the PrintServer driver, see the section on **Windows Driver Setup**.



Note: For help with the Internet Mail Printing Configuration features, see the guide in the D:\Not_supp\Manual directory on the PrintServer Setup CD. Linksys does not provide technical support for this option.

Appendix C: Setting Up The TCP/IP and IPX Protocols

Setting Up TCP/IP in Windows

Before a computer can communicate with the PrintServer, it must be configured with the TCP/IP protocol. If you know how to set up TCP/IP on your computers, do so now. Otherwise, use the guidelines below to help get TCP/IP installed on all of the computers that need PrintServer access. If you are unable to successfully install TCP/IP on one or more computers after following the directions, contact the manufacturer of your computers' network operating system for further assistance. Check with your network administrator for your TCP/IP settings.

The directions below provide general guidelines for coming up with IP addresses and subnet masks. Check with your network administrator to see if you need to use specific IP addresses or DHCP settings.

First, each computer on the network will require an IP address, which is a series of numbers, separated by periods, identifying the PC on the network. To make things simple, it is recommended you use the following numbering scheme:

10.0.1.X

In this example, X is a unique, arbitrarily assigned number from 1 to 254. Each computer must have its own unique X number. Note: Never use 0 or 255 for X. These numbers are reserved by TCP/IP for other uses.

For example, if you have three computers, you could number them as follows:

10.0.1.17
10.0.1.44
10.0.1.126

In this case, 17, 44, and 126 are arbitrary numbers between 1 and 254.

Each computer will also require a subnet mask, which is a numerical “filter” that tells a computer what kinds of TCP/IP data packets to accept. If you're not sure which mask to use, the following mask is recommended:

255.255.255.0

TCP/IP Setup for Windows 95, 98, and Millennium

The following instructions are provided as examples for reference only. For complete instructions on installing and troubleshooting TCP/IP and IPX, consult your Windows operating system documentation.

1. Click the **Start** button, select **Settings**, and open the **Control Panel**. Inside the Control Panel, double-click the **Network** icon.
2. If the *TCP/IP Protocol* is listed for your network adapter, go to step four. Otherwise, click the **Add** button.
3. When the **Component Type** window appears, select **Protocol** and click the **Add** button.
4. Select **Microsoft** in the Manufacturers list and choose **TCP/IP** in the Network Protocols list. Then, click the **OK** button.
5. When the Network window reappears, click **TCP/IP** and then click the **Properties** button.
6. Select **Specify an IP Address**.
7. Enter an IP Address for the computer, along with a Subnet Mask. Click the **OK** button. If you do not have these values, consult your network administrator.
8. When the Network window reappears, click the **OK** button. Restart your machine. TCP/IP has now been successfully installed.

IPX Setup for Windows 95, 98, and Millennium

1. Click the **Start** button, select **Settings**, and open the **Control Panel**. Inside the Control Panel, double-click the **Network** icon.
2. If the *TCP/IP Protocol* is listed for your network adapter, go to step four. Otherwise, click the **Add** button.
3. When the **Component Type** window appears, select **Protocol** and click the **Add** button.
4. Select **Microsoft** in the Manufacturers list and choose **IPX/SPX protocol** in the Network Protocols list. Then, click the **OK** button.

5. When the Network window reappears, click the **OK** button. Restart your machine. TCP/IP has now been successfully installed.

TCP/IP Setup for Windows NT 4.0

1. Click the **Start** button, select **Settings**, and open the **Control Panel**. Inside the Control Panel, double-click the **Network** icon.
2. When the **Network** window appears, click the **Protocols** tab. Then, click the **Add** button.
3. Find the **TCP/IP protocol** in the **Select Network Protocol** field. Click on it once and then click the **OK** button.
4. When asked if you want to use DHCP, choose **No**.
5. If asked to supply your Windows NT CD, do so. NT will copy the necessary files to your system. You may have to switch between your PrintServer Setup CD and the NT CD.
6. When TCP/IP appears in the **Network Protocols** window, click the **Bindings** tab. Windows will store your new bindings.
7. Click the **Protocols** tab. Then, select **TCP/IP**.
8. Click the **Properties** button. Select the type of network adapter you have from the Adapters box and select **Specify an IP Address**.
9. Enter the computer's IP Address and Subnet Mask. Check with your network administrator for your settings.
10. Enter your Default Gateway if you have one.



Note: A Default Gateway is not required. Check with your network administrator.

11. When you finish, click the **OK** button. If NT asks about WINS, ignore it.
12. When the **Network** window reappears, click the **Close** button. Restart your computer when prompted. TCP/IP has now been successfully installed.

IPX Setup for Windows NT 4.0

1. Click the **Start** button, select **Settings**, and open the **Control Panel**. Inside the Control Panel, double-click the **Network** icon.

- When the **Network** window appears, click the **Protocols** tab. Then, click the **Add** button.
- Find the **IPX/SPX protocol** in the **Select Network Protocol** field. Click on it once and click the **OK** button.

TCP/IP Setup for Windows 2000

- At the Windows 2000 desktop, right click **My Network Places**. Then, right click **Local Area Connection**. Choose **Properties**.
- If the *TCP/IP Protocol* is listed for your network adapter, go to step five. Otherwise, click the **Install** button.
- When the **Component Type** window appears, select **Protocol**, and click the **Install** button.
- Select **Internet Protocol (TCP/IP)** from the list and click the **OK** button.
- When the **Network** window reappears, select **TCP/IP**, and click the **Properties** button.
- Select **Use the following IP Address**.
- Enter an IP Address for the computer, along with a Subnet Mask and Default Gateway. Then, click the **OK** button. If you do not have these values, consult your network administrator.
- When the Network window reappears, click the **OK** button. Restart your computer. TCP/IP has now been successfully installed.

IPX Setup for Windows 2000

- At the Windows 2000 desktop, right click **My Network Places**. Then right click **Local Area Connection**. Choose **Properties**.
- If the *NWLink IPX/SPX/NetBIOS Compatible Transport Protocol* is listed for your network adapter, click the **Cancel** button. Otherwise, click the **Install** button.
- When the Component Type window appears, select **Protocol** and click the **Install** button.

- Select **NWLink IPX/SPX/NetBIOS Compatible Transport Protocol** from the list and click the **OK** button.
- When the **Network** window reappears, click the **OK** button. Restart your computer. NWLink IPX/SPX/NetBIOS Compatible Transport Protocol has now been successfully installed.

IPX Setup for Windows XP

- Click the **Start** button and select the **Control Panel**. At the Control Panel, select **Network Connection**.
- If the *NWLink IPX/SPX/NetBIOS Compatible Transport Protocol* is listed for your network adapter, click the **Cancel** button. Otherwise, right click the **Install** button and select **Protocol**.
- When the Component Type window appears, select **Protocol** and click the **Add** button.
- Select **NWLink IPX/SPX/NetBIOS Compatible Transport Protocol** from the list and click the **OK** button.
- When the **Network** window reappears, click the **OK** button. Restart your computer. NWLink IPX/SPX/NetBIOS Compatible Transport Protocol has now been successfully installed.

TCP/IP Setup for Windows XP

- Click the **Start** button and select the **Control Panel**. At the Control Panel, select **Network Connection**.
- If the *Internet Protocol (TCP/IP)* is listed for your network adapter, click the **Cancel** button. Otherwise, right click the **Install** button and select **Protocol**.
- When the Component Type window appears, select **Protocol** and click the **Add** button.
- Select **Internet Protocol (TCP/IP)** from the list and click the **OK** button.
- When the **Network** window reappears, click the **OK** button. Restart your computer. Internet Protocol (TCP/IP) has now been successfully installed.

Appendix D: Setting Up the LPR Port in Windows NT 4.0, 2000, and XP

LPR Port Setup in Windows NT 4.0

To use the Windows NT 4.0 LPR port as an alternative to the EtherFast PrintServer port, complete the following procedure.

1. Install Microsoft TCP/IP Printing. To do this, click the **Start** button, and select **Settings**. Open the **Control Panel** and double-click the **Network** icon. Then, click the **Services** tab.
2. Choose to add a service. Click the **Add** button and select the **Microsoft TCP/IP Printing** option. Then, restart your computer.
3. Once your computer has restarted, make sure that the printer is installed as normal. Double-check your printer's documentation or user guide before continuing.
4. At the Windows NT Desktop, click the **Start** button, select **Settings**, and double-click the **Printers** icon. Right-click the printer that you want to set up.
5. Click the **Ports** tab. Click the **Add Port** button and select the **LPR Port** option. Then, select **New Port**.
6. You will be prompted to enter the PrintServer's IP address and the name of the NT server's print queue.
Choose one of the following:
 - **L1** - represents LPT1.
 - **L2** - represents LPT2.
 - **L3** - represents LPT3.
7. Click the **OK** button.
8. Once you are back at the **Ports** tab, you should see a checkmark on it with the IP address and the printer or print queue name, e.g., 10.0.0.1:L1.
9. Your LPR Port setup is now complete.

Standard TCP/IP Print Port Setup in Windows 2000 and XP

1. Click the **Start** button, select **Printers** and choose **Faxes**.
2. Right click on the printer you want to set up. Then, click **Properties** from the drop-down menu that appears.
3. Click the **Ports** tab.
4. Click the **Add Port...** Button.
5. When the Printer Ports window appears, select **Standard TCP/IP Port**.
6. Click the **New Port...** button.
7. The Add Standard TCP/IP Printer Port Wizard window will appear, click the **Next** button.
8. Another window will appear with Printer Name or IP Address option. Enter the PrintServer's IP Address (e.g. "10.0.0.1").
9. In the Port Name: field, enter the port name as "L1" and click the **Next** button.
10. The Additional Port Information Required window will appear. Select the Device Type option as **Custom**. Click **Settings**.
11. Change the protocol to LPR.
12. Specify the queue name in the LPR Settings box.
Choose one of the following (L stands for logical port):
 - **L1**.
 - **L2**.
 - **L3**.
13. Click the **Next** button.
14. Click the **Finish** button to complete setup.
15. TCP/IP printing setup is now complete.

Appendix E: Tips on Using the EtherFast 10/100 PrintServer

Connecting to Other Switches and Hubs

A switch, hub, or similar device is connected to the LAN port with regular UTP Category 5 cabling. Connect one end of the cable to the LAN port, then connect the other end to an uplink port on your hub or other device.

Linksys does not provide any technical support for connections made with crossover cables.

About Bi-directional Printing

Normal printing only sends print signals from a PC to a printer. **Bi-directional printing**, also called bitronic printing, refers to a printer's ability to do just the opposite- talk back to a PC to notify it of a print job status, paper jams, etc.

This two-way communication technology can be found in HP, IBM, Panasonic, and other laser or color printers where close contact between the PC and printer is key. In color printing, for example, the printer "informs" the PC of its constant status in order to mix color inks correctly for optimal quality output.

Bi-directional communication, communication from a printer to a PC, is normally handled by a combination of the printer hardware and special software on your computer. Bi-directional printers generally have highly advanced parallel interfaces. These printers often require special parallel ports in order to take full advantage of their features.

Using a bi-directional printer on a network poses unique challenges. Unlike a direct PC-to-printer connection in which a bi-directional printer can easily send its signals back to the host PC through the computer's **parallel port** (which is normally located only a few feet away from the printer), a networked printer faces the problem of having to route messages bound for a particular PC through a large array of hubs, switches, file servers, and computers. Unfortunately, most printers are not equipped to handle the complexities of printer-to-PC communication across a network. That does not mean that they can't be used on a network, however.

Linksys designed the PrintServer to function with both regular as well as bi-directional printers. Standard print servers cannot work with bi-directional printers, but the PrintServer features a custom design to support both parallel as well as bi-directional parallel interfaces. However, the PrintServer cannot pass messages from the printer back to the printing PC. This limitation is simply an industry standard.

However, the PrintServer can check any printer's online and printing status on the network with the Bi-Admin management utility software packaged with the PrintServer. The status-checking feature built into the management software does not require a bi-directional printer to function. If your printer came with special bi-directional software allowing you to monitor printer status, do not use it with the PrintServer - the software is most likely not network-capable. For best results, turn off the printer's bi-directional function either by (1) removing any bi-directional printing software from your network computers, and/or (2) turning off the printer's bi-directional print feature inside of the printer's on-board menus (if it has menus). Your printer's user guide should be able to provide specific instructions for doing this.

About the PrintServer's Software

The PrintServer is fully compatible with Windows 95, 98, Millennium, NT, 2000, and NetWare.

When used with Windows 95, 98, Millennium, 2000 and NT, the PrintServer uses the **TCP/IP** protocol for network communication. Each computer on your network that needs PrintServer access will need to have the TCP/IP protocol installed. TCP/IP installation files are included on your original Windows 95, 98, Millennium, NT, or 2000 CD-ROM. For tips on installing TCP/IP, see the section called **Setting Up TCP/IP and IPX Protocols**.

When operating under NetWare, the PrintServer uses **IPX/SPX** for communication, which is built into the NetWare network operating system. Most computers need only be able to log into the network in order to print after the PrintServer has been configured.

NetWare 5.x supports the use of both IPX/SPX and TCP/IP. Instructions for the setup and configuration of IPX/SPX are provided in the NetWare 5.x section of this user guide. TCP/IP instructions are provided in "Appendix C: Setting Up TCP/IP and IPX Protocols."

Please be aware that although Linksys provides instructions for the setup of the TCP/IP protocol, these instructions are provided for reference only. Linksys will not provide technical support for the configuration and troubleshooting of the TCP/IP protocol. For full instructions on using TCP/IP, consult your operating system's documentation.

Appendix F: Specifications for the 3-Port PrintServer

Model Number	EPSX3 ver. 2
Standards	IEEE 802.3, IEEE 802.3u
Protocol	CSMA/CD
Topology	Star
Ports	Two DMA-Equipped Bi-directional Parallel Ports, One Parallel Printer Port, One Auto-Sensing RJ-45 10/100 Port
Port Speed (Mbps)	10 or 100 (Half Duplex) 20 or 200 (Full Duplex)
Memory	512 KB RAM Buffer, 512 KB Flash Memory
Cabling Type	Printer Cabling: IEEE 1284 Standard Printer Cable Network Cabling: UTP Category 5 or Better
LEDs	Power, Link (for LAN), Status and Error (for each Printer)
Button	Reset

Environmental

Dimensions	7.32" x 6.06" x 2.52" (186 mm x 154 mm x 64 mm)
Unit Weight	15.2 oz. (0.43 kg)
Power Input	12V DC, 800 mA
Certifications	FCC Class B, CE Mark
Operating Temp.	32°F to 104°F (0°C to 40°C)
Storage Temp.	-4°F to 158°F (-20°C to 70°C)
Operating Humidity	10% to 85%, Non-Condensing
Storage Humidity	5% to 90%, Non-Condensing

Appendix G: Specifications for the 1-Port PrintServer

Model Number	PPSX1 ver. 2
Standards	IEEE 802.3, IEEE 802.3u
Protocol	CSMA/CD
Topology	Star
Ports	One DMA-Equipped Bi-directional Printer Ports, One Auto-Sensing RJ-45 10/100 Ports
Port Speed (Mbps)	10 or 100 (Half Duplex) 20 or 200 (Full Duplex)
Memory	256 KB RAM Buffer, 512 KB Flash Memory
Cabling Type	Printer Cabling: IEEE 1284 Standard Printer Cable Network Cabling: UTP Category 5 or Better
LEDs	LAN, Act, Error, Power
Button	Reset

Environmental

Dimensions	4.76" x 3.74" x 1.18" (121 mm x 95 mm x 30 mm)
Unit Weight	5.6 oz. (0.16 kg)
Power Input	12V DC, 800 mA
Certifications	FCC Class B, CE Mark
Operating Temp.	32°F to 104°F (0°C to 40°C)
Storage Temp.	-4°F to 158°F (-20°C to 70°C)
Operating Humidity	10% to 85%, Non-Condensing
Storage Humidity	5% to 90%, Non-Condensing

Appendix H: Warranty Information

BE SURE TO HAVE YOUR PROOF OF PURCHASE AND A BARCODE FROM THE PRODUCT'S PACKAGING ON HAND WHEN CALLING. RETURN REQUESTS CANNOT BE PROCESSED WITHOUT PROOF OF PURCHASE.

IN NO EVENT SHALL LINKSYS'S LIABILITY EXCEED THE PRICE PAID FOR THE PRODUCT FROM DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THE PRODUCT, ITS ACCOMPANYING SOFTWARE, OR ITS DOCUMENTATION. LINKSYS DOES NOT OFFER REFUNDS FOR ANY PRODUCT.

LINKSYS OFFERS CROSS SHIPMENTS, A FASTER PROCESS FOR PROCESSING AND RECEIVING YOUR REPLACEMENT. LINKSYS PAYS FOR UPS GROUND ONLY. ALL CUSTOMERS LOCATED OUTSIDE OF THE UNITED STATES OF AMERICA AND CANADA SHALL BE HELD RESPONSIBLE FOR SHIPPING AND HANDLING CHARGES. PLEASE CALL LINKSYS FOR MORE DETAILS.

Appendix I: Contact Information

For help with the installation or operation of this product, contact Linksys Technical Support at one of the phone numbers or Internet addresses below.

Sales Information	800-546-5797 (LINKSYS)
Technical Support	800-326-7114
RMA Issues	949-271-5461
Fax	949-265-6655
Email	support@linksys.com
Web	http://www.linksys.com
FTP Site	ftp.linksys.com

Extended Technical Support

The EtherFast® 10/100 PrintServer supports the NetBEUI and Appletalk protocols, SNMP management, Unix support, and much more. However, Linksys is neither responsible nor liable for supporting these optional features, and will not provide phone or online support for these features.

In the **Not_supp** directory on your PrintServer Setup CD, you'll find software, drivers and informative how-to guides covering the installation of the unsupported functions. The User Guides provided in the **Not_supp** directory (PDF or DOC) have all of the information you need to set up and use these functions.



<http://www.linksys.com>

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