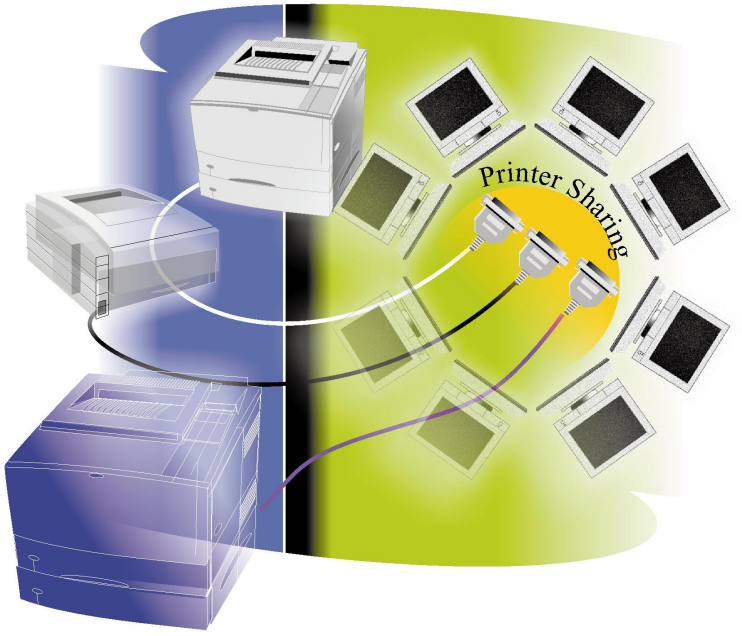
Instant EtherFast© Series

EtherFast 10/100 PrintServers



Use this User Guide to install the following Linksys products:

- EtherFast 10/100 2-Port Switched PrintServer (EFSP42)
- EtherFast 10/100 3-Port Print Server (EPSX3)
- EtherFast 10/100 1-Port Print Server (PPSX1)

User Guide

LINKSYS®

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LIMITED WARRANTY

Linksys guarantees that every EtherFast 10/100 PrintServer is free from physical defects in material and workmanship under normal use for three (3) year from the date of purchase. If the product proves defective during this warranty period, call Linksys Customer Support in order to obtain a Return Authorization number. BE SURE TO HAVE YOUR PROOF OF PURCHASE ON HAND WHEN CALLING. RETURN REQUESTS CANNOT BE PROCESSED WITHOUT PROOF OF PURCHASE. When returning a product, mark the Return Authorization number clearly on the outside of the package and include your original proof of purchase.

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Linksys P.O. Box 18558, Irvine, CA 92623

FCC STATEMENT

The EtherFast 10/100 PrintServer has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits 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 device
- Connect the equipment to an outlet other than the receiver's
- Consult a dealer or an experienced radio/TV technician for assistance

Table of Contents

Introduction

Your New EtherFast 10/100 PrintServer

Congratulations on your purchase of the Linksys EtherFast 10/100 PrintServer, the fastest and easiest way to network your printers. Now you can sharing your printing resources without tying up your workstation performance with pending print jobs.

Linksys is also introducing its new line of hybrid PrintServers, with the first PrintServer ever to offer **four integrated 10/100 Switched Ports**, giving your network the combined power of a switch and print server in one! The EtherFast 10/100 2-Port Switched PrintServer (EFSP42) features two high-speed printer ports and four extra full duplex, 10/100 autosensing switched ports, allowing you to connect up to two printers and four PCs (or other network devices) without the hassles of adding more hardware. This Switched PrintServer serves as an ideal network backbone, providing dedicated bandwidth and the simplest way to expand and organize your departmental, small office, or home office networks.

Your PrintServer comes with an easy-to-use software management suite that runs seamlessly with all Windows operating systems. Fully compatible with standard laser, bubble jet, ink jet, and dot matrix printers, the PrintServer also supports your bidirectional printers. Direct Memory Access (DMA) technology, a 256KB buffer, and automatic collision control all result in your PrintServer handling print jobs up to 50% faster than regular print servers-even complex graphics and layout jobs.

PrintServer Package Contents

Check to see that your Linksys product contains all of the items listed below. If any items are missing, contact your Linksys dealer.

EtherFast 10/100 2-Port Switched PrintServer (EFSP42)

- One Linksys EtherFast 10/100 2-Port Switched PrintServer
- One Setup and Utility CD
- One Power Adapter and One Power Cord
- One User Guide and Registration Card

EtherFast 10/100 3-Port PrintServer (EPSX3)

- One Linksys EtherFast 10/100 3-Port PrintServer
- One Setup and Utility CD
- One Power Cord
- One User Guide and Registration Card

EtherFast 10/100 1-Port PrintServer (PPSX1)

- One Linksys EtherFast 10/100 1-Port PrintServer
- One Setup and Utility CD
- One Power Cord
- One User Guide and Registration Card

Etherfast 10/100 PrintServer Features

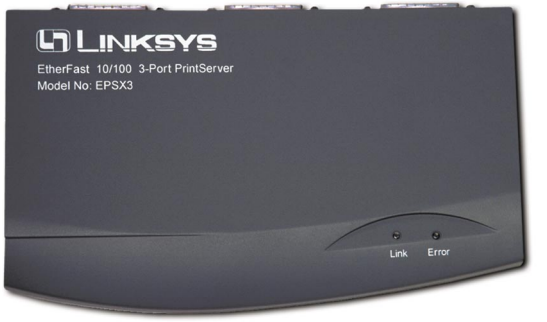
- Bidirectional 1, 2, and 3-Port PrintServers Serve Both 10BaseT and 100BaseTX Network Hardware
- Simultaneously Supports Multiple Print Jobs
- Runs with Virtually All Laser, Ink Jet, Bubble Jet, Color, and Dot Matrix Printers
- All PrintServer Ports Support Parallel and Bidirectional Printers
- Stand-Alone Unit - No Dedicated PrintServer PC Required
- Easy-to-Use Management Utility
- Compatible with Both Half and Full Duplex Networks
- On-Board DMA Controller Chip Supports Turbo Printing Speeds
- 256KB RAM Buffer for Faster Graphics
- 512KB Flash Memory for Future Upgrades
- Automatic Data Collision Control & Polarity Correction
- Free Technical Support & Software Upgrades
- 3-Year Limited Warranty

Additional Features for the 2-Port Switched PrintServer

- 4 Full-Duplex, Dedicated-Bandwidth 10/100 Switched Ports
- 10/100 Autosensing Lets You Integrate Both 10Mbps and 100Mbps Devices
- Uplinks Easily to Other Switches and Hubs for Hasslefree Expansion
- Advanced Store-and-Forward Packet Switching
- Runs Up to a Blazing 200Mbps in Full Duplex Mode
- Independently Switched Ports Protects Your PCs From Downed Segments

Getting to Know the EtherFast 10/100 Printservers

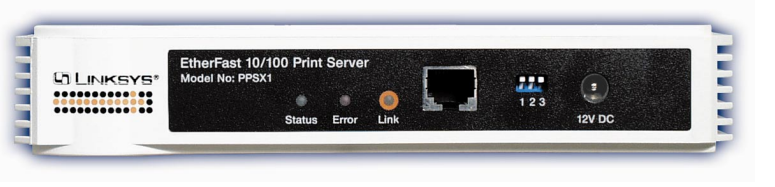
- The EtherFast 10/100 3-Port PrintServer (EPSX3)



Top View

Back View

- The EtherFast 10/100 1-Port PrintServer (PPSX1)



Front View

Back View

Your 1 and 3-Port Printserver LEDs

Following are the LEDs on the front of your PrintServer. The guide below tells you what each LED means. Not all PrintServer models will have all the LEDs.

Power — The **Power** LED lights up **green** when the PrintServer is powered on.

Link — The **Link** LED lights up **green** when a successful connection is made between the PrintServer and your network through the PrintServer's Uplink Port. This LED is labeled as **Link/Act** on the 2-Port model.

Status — The **Status** LED lights up **green** when the PrintServer runs a self-diagnostic test while booting up. It turns off when the diagnosis is successfully completed. If this LED stays on too long, see page 44 for Troubleshooting.

Error — The **Error** LED lights up red when there is a problem with the PrintServer or it is writing information to the PrintServer. When assigning an IP address, this LED will also light up for a few seconds.

Dip Switches Settings (1 and 3-Port Models Only)

There are three small, white dip switches on the PrintServer that you can use to set your PrintServer to auto-detect or manually set your network speeds. These switches are on the left edge of the 3-Port PrintServer (EPSX3) and on the front of the 1-Port PrintServer (PPSX1). A switch set in the down position is ON. In the up position, the dip switch is OFF. Set your dip switches as follows:

Dip Switch 1: This dip switch controls the **Auto-Negotiation Mode**, which enables the PrintServer to automatically detect the speed (10Mbps or 100Mbps), polarity, and duplex of your network cabling. If Dip Switch 1 is OFF in the up position, Dip Switches 2 and 3 are automatically disabled.

Dip Switch 2: This dip switch controls the PrintServer's speed. For 100Mbps data transfer, set this dip switch OFF in the up position. For 10Mbps transfer, set the switch ON in the down position. When Dip Switch 1 is OFF, Dip Switch 2 is disabled.

Dip Switch 3: This dip switch controls the duplex mode of data transfer. When this switch is set ON in the down position, data transfer runs in half duplex mode. When this switch is set on OFF in the up position, data transfer runs in full duplex mode. When Dip Switch 1 is OFF, Switch 3 is disabled.

Note: *The 2-Port Switched PrintServer (EFSP42) does not have any dip switches.*

Getting to Know the 10/100 2-Port Switched PrintServer (EFSP42)

The Front Panel LEDs (EFSP42)

The 10/100 2-Port Switched PrintServer LEDs

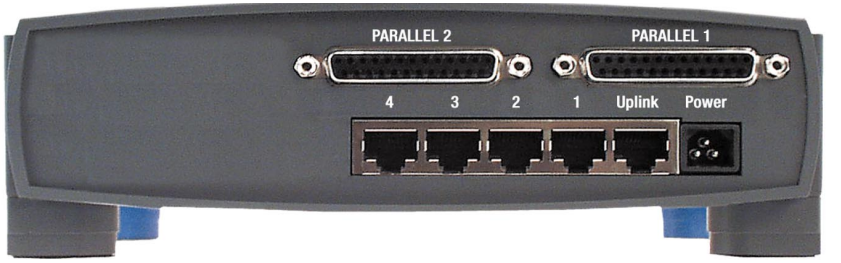
These 3 LEDs apply to the 2-Port Switched PrintServer only (EFSP42).

Link/Act — The **Link/Act** LED lights up a solid green when the PrintServer is successfully connected to a device through that port. If this LED is flickering green, the PrintServer is actively sending or receiving data through that port.

Full/Col — The **Full/Col** LED lights up solid green when a successful full duplexconnection is made through that port. When this **Full/Col** LED is off, then the data is transmitting in half duplex mode. If the green LED flickers, that connection is experiencing collisions. Infrequent collisions are normal. If the switch seems to experience excessive collisions, verify that your network cabling is securely crimped and installed correctly. If this LED flickers too often, see page 44 for Troubleshooting.

100 — The **100** LED lights up orange when a successful 100Mbps connection is made through that port. When the **100** LED is off, then the data transfer rate is 10Mbps.

The Rear Panel Ports



The 10/100 2-Port Switched PrintServer Ports

Power Port — This port on the back of your unit connects your Switch's AC Power cord.

Parallel 1, Parallel 2 — These two Parallel (LPT) Ports connect to your printers.

Uplink Port — The Uplink Port, which is shared with Port 1, connects to a standard RJ-45 port on another switch, hub, or router to expand your network.

Ports 1 to 4 — These four ethernet RJ-45 Ports connect to your network devices, such as PCs, other print servers, remote hard drives, and any other networkable device. Use Cat 5 UTP cabling with these ports.

PrintServer Hardware Installation

Overview

The following instructions will get your PrintServer hardware installed and powered on your network.

Before starting your physical installation, be sure to find the PrintServer's Default Name and Node Address first. The 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 your PrintServer, there is a white bar code sticker with a SC number printed on it (example: SC123456). This number is the PrintServer's Default Name, which you'll use in the PrintServer driver installation. Since it is written in hexadecimal form, the SC number may include letters as well as numbers. Write it in the box below for future reference.

Finding the PrintServer's Node Address

To find the node address of the PrintServer, add **00C002** to your PrintServer's Default Name. The resulting combined number is your PrintServer's Node Address. Write it in the box below for future reference.
(example: 00C002123456).

For example, if your PrintServer's Default Name is SC123456, then your PrintServer's Node Address is **00C002**123456.

PrintServer **Default Name**: _____

PrintServer **Node Address**: 00C002_____

Connecting Your PrintServer to your Network

Connecting the Power

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

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

1. Plug the power adapter into your PrintServer's Power Port (on the back of the unit). If you have a Switched PrintServer (EFSP42 only), connect the its power cord to the power adapter, which is larger than the cord, and then plug the power cord into the Switched PrintServer.

2. Plug the power adapter into the wall. The PrintServer's **Power** LED should light up green.

Connecting Your Printserver to Your Network

If you have a 1 or 3-Port PrintServer (PPSX1 or EPSX3), connect your PrintServer with a Cat 5 UTP cable from the RJ-45 port to a standard port on your switch or hub. If you have a 2-Port Switched PrintServer, complete steps 1 through 4 below.

1. After powering on the PrintServer, plug one end of a Category 5 UTP cable into the PrintServer's Uplink Port (EFSP42 only).

2. Connect the other end of the cable into a networked hub or switch. The distance between your Printserver and the second device should not exceed 328 feet (100 meters).

3. The **Link** and **Status** LEDs will both become active. If the **Link** LED does not light up or the **Status** LED stays on for a long time, see page 44 for Troubleshooting.

4. You can network other computers or peripherals through the PrintServer's Switched RJ-45 Ports 1 through 4 (EFSP42 only) at any time. When the PrintServer is powered on, the Switched Ports are always active and will accept new network connections.

Connecting Printer(s) to Your PrintServer

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

2. Power on your printer(s).

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

• If you are running Windows 98, 95 or NT 4.0, go to page 13.
• If you are running NetWare, go to page 29.

Part I - Windows Driver Setup

Overview

This section installs the Printserver driver on your Windows 98, 95, or NT computers to give them PrintServer printing abilities. The PrintServer is fully compatible with Windows 98, 95, and NT 4.0 environments.

At this point, you must have:

- the PrintServer hardware installed on your network. If not, see page 11.
- TCP/IP installed on each of your computers. If not, see page 58.
- IPX installed on each of your computers. If not, see page 58.
- an IP address assigned to each of the computers on your network. If not, see page 58.

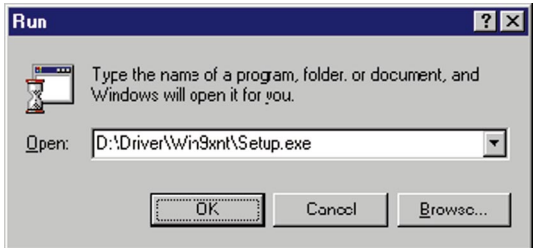
This setup should be completed on the network administrator's computer before all other users' computers on the network. The IP address for your PrintServer will be assigned in this first installation on the network administrator's computer only, which takes three extra steps.

It is assumed that your CD-ROM drive's letter name is designated as D. If your CD drive is named another letter, replace all instances of D with the appropriate letter.

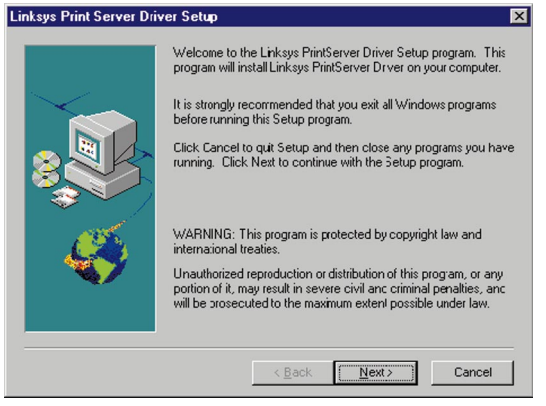
If you need to install the PrintServer driver on computers without a CD-ROM drive, you can create a setup disk by copying the contents of D:\Driver\Win9xNT onto a floppy disk.

> ***Note**: To set up DHCP on the PrintServer, install **Bi-Admin** first (see page 37), then install **DHCP** (see page 57), then proceed to install the Printer Driver.*

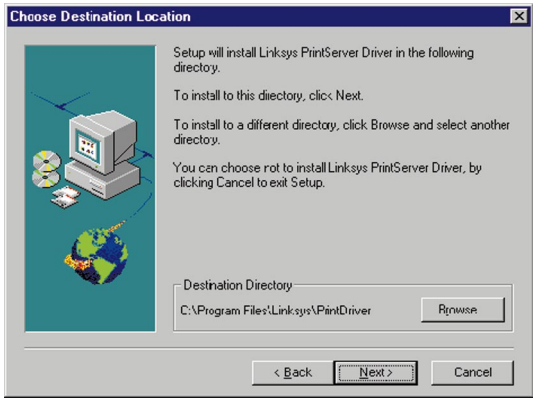
1. Click on **Start**, **Run**, and enter D:\Driver\Win9xnt\Setup.exe. Click **OK**.



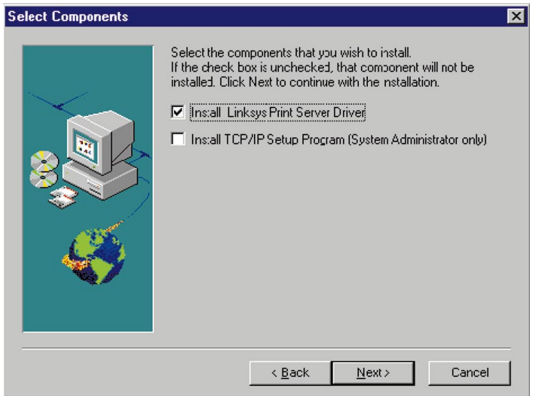
2. The **Install Wizard** window appears. Click **Next.**



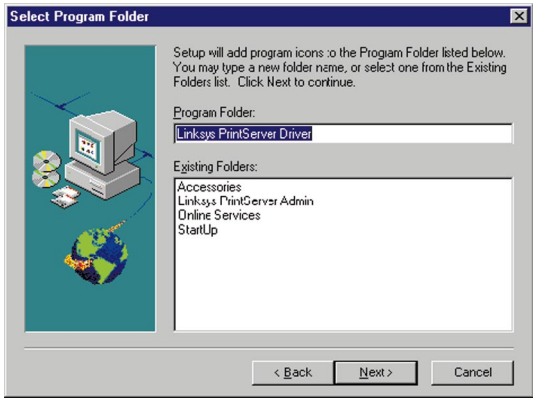
3. Click **Next** to accept the Destination Directory default, shown below.



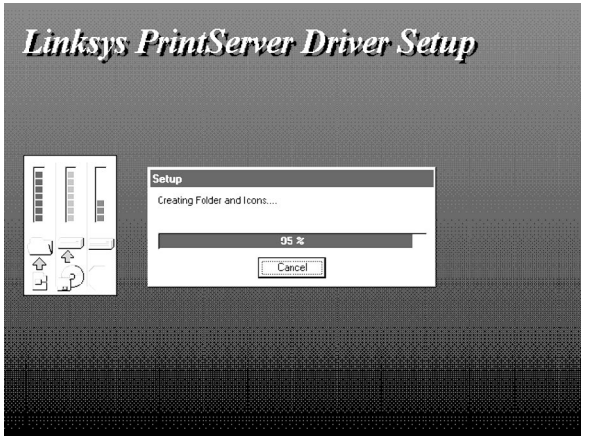
4. The **Select Components** window appears. If your computer is the network administrator's computer, check *Install TCP/IP Setup Program (System Administrator only)*. Otherwise, select the default, *Install Linksys PrintServer Driver*. Click **Next**.



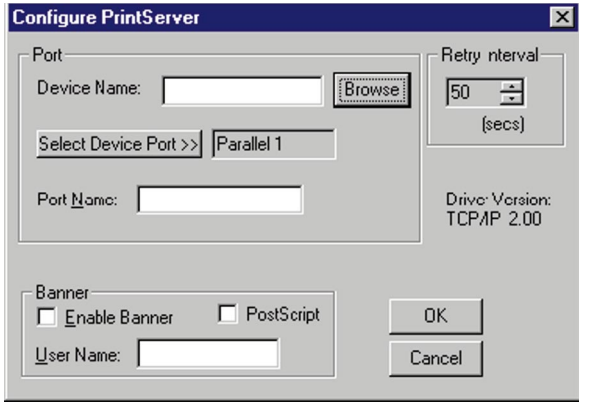
5. Accept the default Program Folder. Click **Next**.



The window below will appear as the files are copied to your computer.

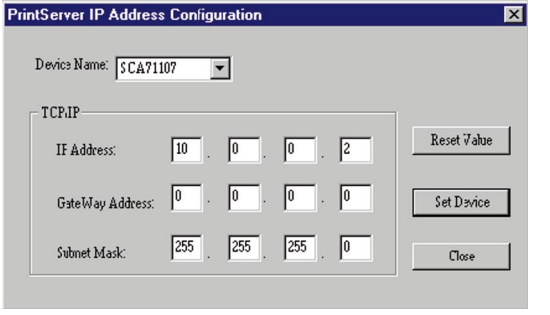


6. Before the file copy finishes, the **Configure PrintServer** window will pop up again as a pre-test. Click **Cancel** to complete the file copy. To check for your successful file copy, click on **Start**, **Programs**, **Linksys PrintServer Driver**, and check to see that **TCPIP Setup** is on its sub-folder.



If you are setting up the network administrator's computer, finish steps 7 to 10. Otherwise, if you are simply installing this on a network user's computer, skip steps 7 to 9 and proceed to step 10 to finish this section.

7. On the network administrator computer only, click **Start**, **Programs**, **Linksys PrintServer Driver**, and **TCPIP Setup** to set up your PrintServer's IP address.



8. In the **Device Name** field, enter the PrintServer's 8-digit Default Name written on page 10 and the white barcode sticker on your unit. The example settings below for the PrintServer Settings and the Network Administrator Computer Settings show how the settings have been set for the picture in step 7. If you are not sure what settings to use, see your network administrator.

Printserver Settings

Device Name: SCA71107
IP Address: 10.0.0.2
Subnet Mask: 255.255.255.0
Gateway: 0.0.0.0 (optional)

Network Administrator Computer Settings

IP address: 10.0.0.1
Subnet Mask: 255.255.255.0

9. When you are finished entering the values for the IP address, Gateway address (optional), and the Subnet Mask, click **Set Device**.

10. If you are configuring a...

- Windows 98/95 computer, go to page 18 to finish your PrintServer Setup.
- Windows NT 4.0 computer, go to page 23 to finish your PrintServer Setup.

Part II - Windows 98 and 95 Port Configuration

Overview

This section configures your Windows 98 or 95 computers to give them printing abilities to the PrintServer.

At this point, you must have:

- the PrintServer hardware installed on your network. If not, see page 10.
- TCP/IP installed on each of your computers. If not, see page 58.
- IPX installed on each of your computers. If not, see page 58.
- your PrintServer and each of the computers on your network assigned to an IP address. If not, see page 58.

If you do not complete the above first, your installation will not be complete.

It is assumed that your CD-ROM drive's letter name is designated as D. If your CD drive is named another letter, replace all instances of D with the appropriate letter.

If you need to install the PrintServer driver on computers without a CD-ROM drive, you can create a setup disk by copying the contents of D:\Driver\Win9xNT onto a floppy disk.

Installing the Printer Driver for Each Printer

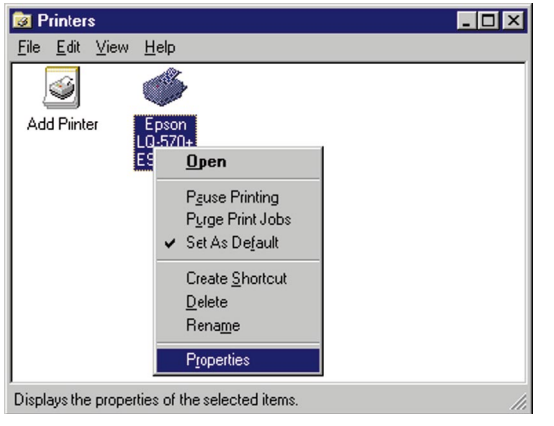
After installing TCP/IP, install the Windows printer driver for each printer(s) attached to the PrintServer.

1. Click on **Start**, **Settings**, and **Printers**.

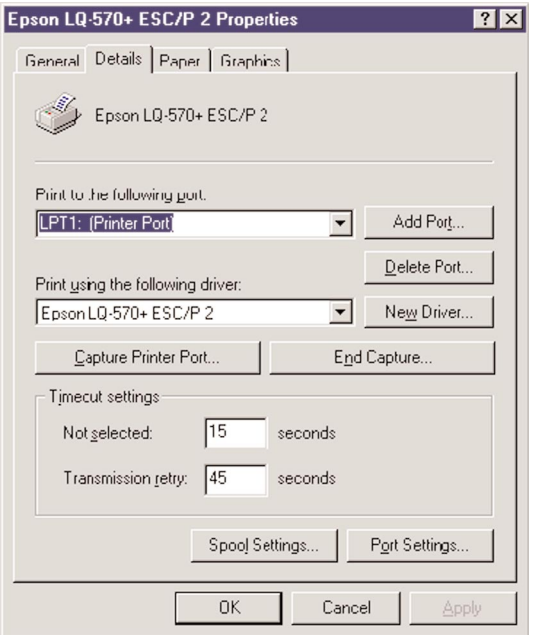
2. If no printers are installed, install the printer driver(s) per the directions from the printer's manufacturer, as if the printer is a "local" printer attached directly to the PC.

3. After the printer driver has been installed, click on **Start**, **Settings**, and **Printers**. Locate the printer you want to attach to the PrintServer, which appears as an icon in the **Printers** folder, and right-click on it.

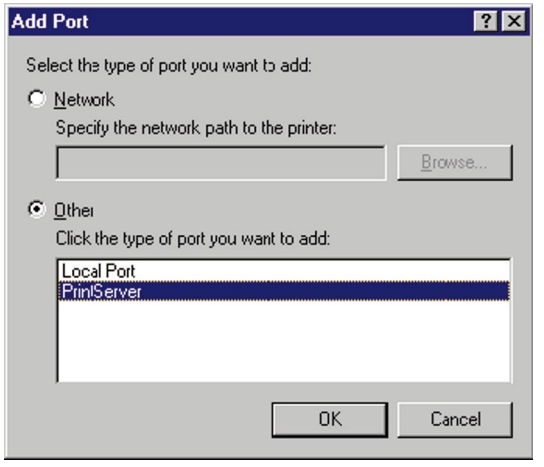
4. Click on **Properties**.



5. When the **Properties** window appears, choose the **Details** tab. Click on the **Add Port** button.

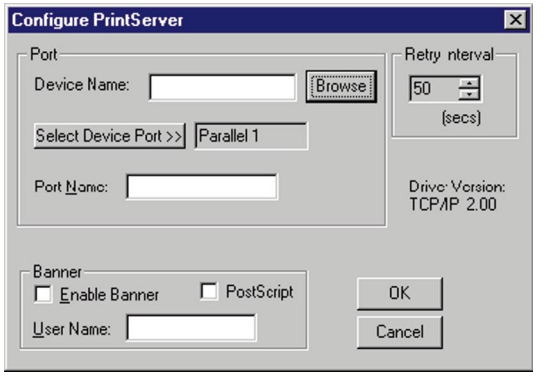


The **Add Port** window will appear, shown below.

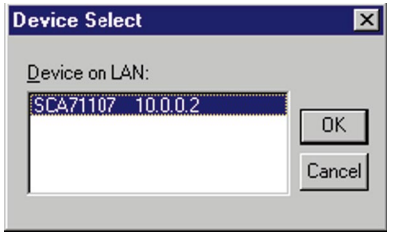


7. In the **Add Port** window, select *Other* and then *PrintServer* under the listed ports to add.

8. Click **OK**. The **Configure PrintServer** window appears, shown below.

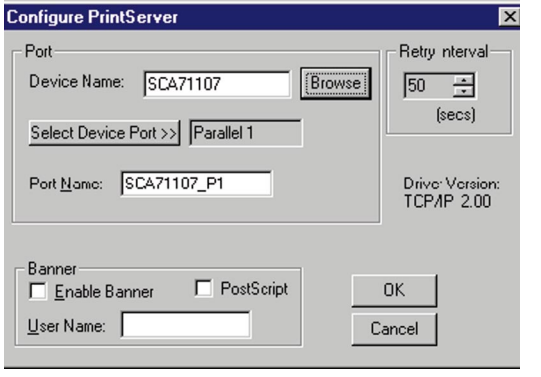


9. Enter the IP address or the Default Name of the PrintServer in the **Device Name** field. If you are not sure what the number is, click on **Browse** and choose from the list that appears, or see page 10.

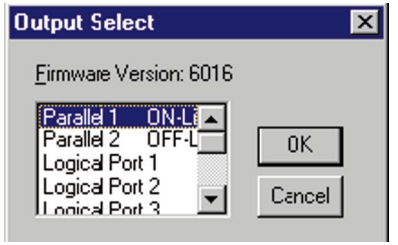


It may take a few seconds for the list to appear. If you have multiple PrintServers on your network, be sure to pick the correct name.

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



11. If you are using PrintServer with more than one parallel port, choose the PrintServer parallel (LPT) port connected to the newly installed printer.



12. In the **Configure PrintServer** window, set the **Retry interval**, which determines how many seconds Windows waits before attempting to send a print job again if the PrintServer was busy.

13. If you want each print job to be identified with the user's name, enable the banner. If you need postscripting printing for the banner, select the *PostScript* option. Be sure to enter the workgroup or username you want to appear on the banner.

14. When you finish, click **OK**. When the **Printer Properties** window reappears, click **Apply**, then select the **General** tab. Click on **Print Test Page**. If the page prints, click **OK** in the **Properties** window and close all opened windows. Your PrintServer installation is now complete, and you can print as you do normally.

To change the PrintServer's internal setup or configuration, see page 37.

Note: For 3-Port PrintServers (EPSX3) and 2-Port Switched PrintServers (EFSP42), you must add a port each time you add a printer to your PrintServer and each time you add an additional PrintServer to your network.

Part II- Windows NT Port Configuration

Your PrintServer is fully compatible with Windows NT 4.0 environments. This section will show you how to set up each port you use on the PrintServer so all the computers on your networks can print from the PrintServer.

At this point, you must have:

- TCP/IP installed on each of your computers. If not, see page 58.
- IPX installed on each of your computers. If not, see page 58.
- have an IP address for the PrintServer and each computer on the network.
- Logged on as an NT Adminstrator.

If you do not complete the above first, your installation will not be complete.

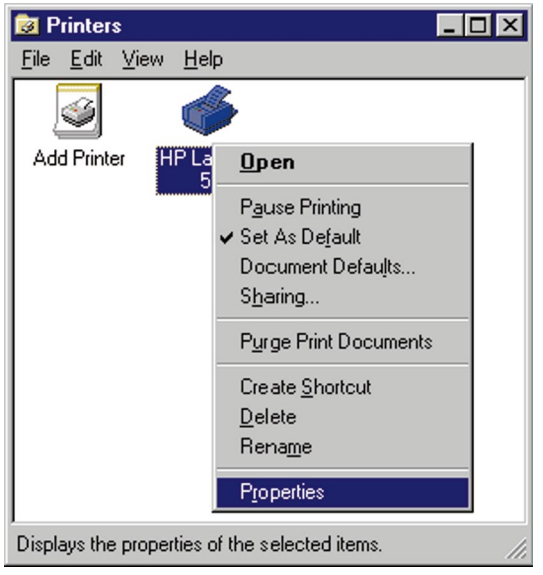
It is assumed that your CD-ROM drive's letter name is designated as D. If your CD drive is named another letter, replace all instances of D with the appropriate letter.

Installing the NT Printer Driver

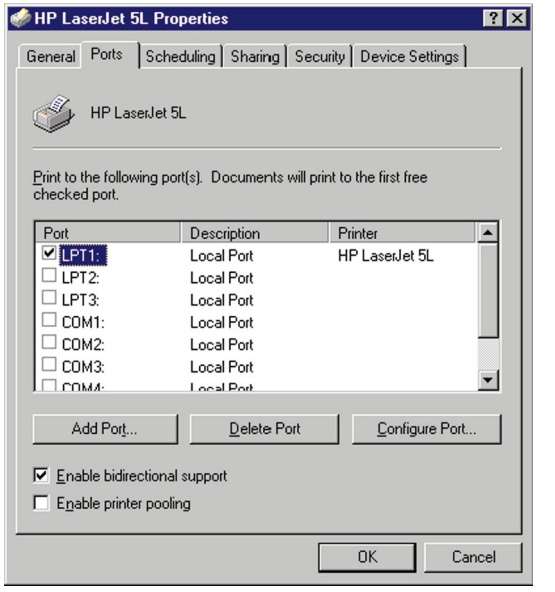
1. Click on **Start**, **Settings**, and **Printers**.

2. Install the printer driver per the directions from the printer's manufacturer, if you haven't already.

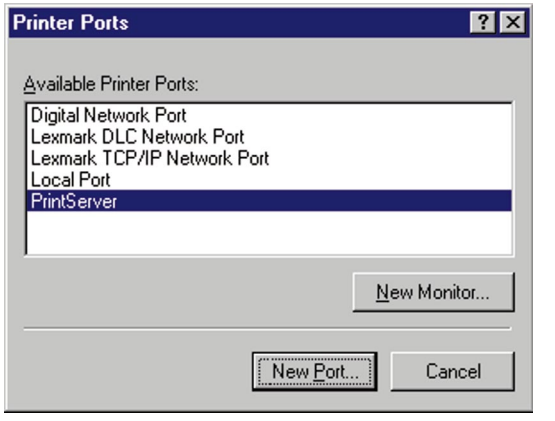
3. After the printer driver is installed, click on the printer to be configured, then right-click to select **Properties**.



4. When the **Properties** window with the name of your printer appears, click on **Ports** and then **Add Port**.

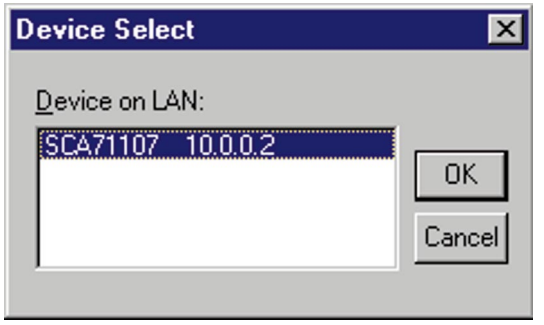


5. The **Printer Ports** window appears listing **Available Printer Ports**. Select **PrintServer** and click on **New Port**.

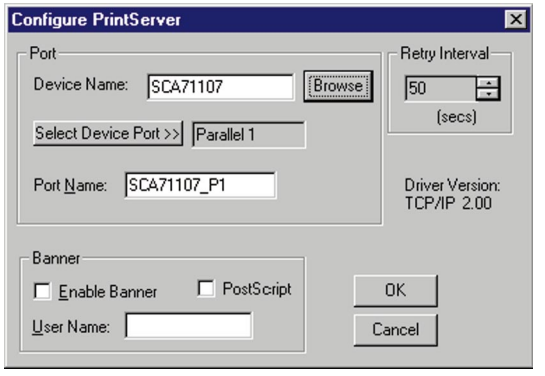


6. Click on **Browse** to search for your PrintServer.

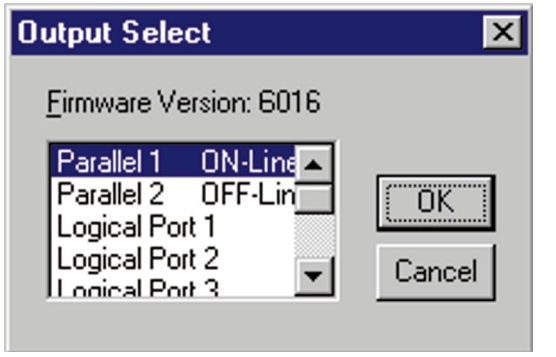
7. When your PrintServer is found, the **Device Select** window appears, as shown below. Select the PrintServer you want to configure and click **OK**.



8. Enter the Default Name on page10 for your PrintServer in the Device Name field. You may opt to rename your port, keeping all of your PrintServer port names unique. Click **Select Device Port** and select the port on the PrintServer you are setting up. Click **OK**.

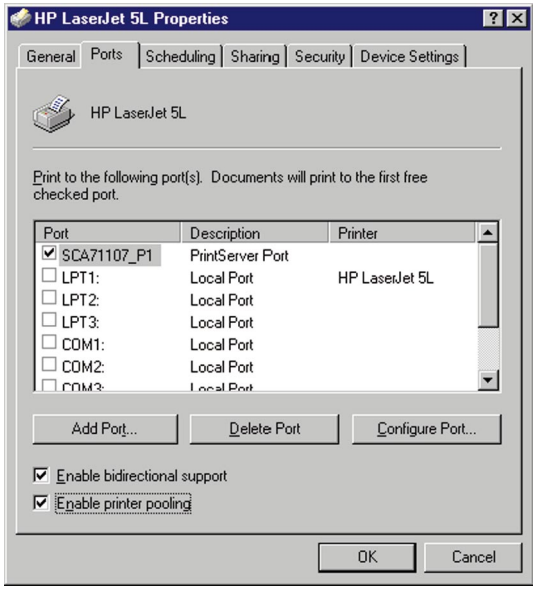


9. A **Output Select** window appears. Select the port that your printer is attached to and click **OK**. Click **OK** again when the **Configure PrintServer** window appears.



10. When the **Printer Ports** window appears again, click **Close**.

11. The **Properties** window with the name of your printer should reappear with the new port added to the list. Click **OK** to confirm your new settings.



12. Right-click on the printer and select *Properties*, as shown in step 2.

13. Select the **General** tab and click **Print Test Page**.

14. If your printer prints, click **OK** in the **Properties** window and close all opened windows. Your NT PrintServer installation is now complete.

> ***Note:*** *For 3-Port PrintServers (EPSX3) and 2-Port Switched PrintServers (EFSP42), you must add a port each time you add a printer to your PrintServer and each time you add an additional PrintServer to your network.*

NetWare Driver Setup

Overview

The EtherFast 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 on page 37. To manually set up the PrintServer using Bi-Admin, see page 40.

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 your EtherFast PrintServer and its 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 license.

In contrast, a “remote printer” is a file server resource that distributes print jobs to physical devices like the EtherFast 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 Linksys 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 page 31

> ***Note**: To set up DHCP on the PrintServer, install **Bi-Admin** first (see page 37), then install **DHCP** (see page 57), and install the printer driver last. This applies to pure IP NetWare under the 5.x version only.*

• for NetWare 5.x, 4.x, 3.x
IPX Printing Mode:
- Print Server Mode, see page 35
- Remote Printer Mode, see page 36

Pure IP NetWare 5.x Setup

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

Throughout the directions, replace these settings with your own, since these parameters are given as an example only. To set up IP addresses, see page 58.

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

- First, **create a 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 a NDPS Manager

1. Log on to a NetWare 5.x file server as an Administrator.

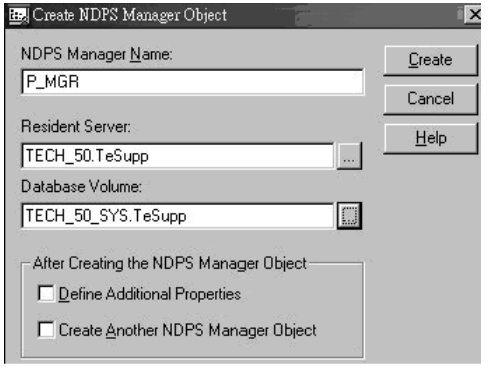
2. Run the NetWare Administrator application **Nwadmn32.exe**, which should be located in F:\public\win32 on your network. Otherwise, see your NetWare user guide or your network administrator to find the file location.

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. Click on **Create** 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.



7. In the **Resident Server** window, click on **Browse** and select the name of the server to which you want to assign this NDPS Manager.

8. In the **Database Volume** window, click on **Browse** and assign a location to the NDPS Manager database, e.g., TECH_50_SYS.TeSupp.

9. Click on **Create**. 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 NetWare Administrator.

2. Right-click on the container where you would like to create the printer, then select **Create**.

3. Select **NDPS Printer**.

4. Give the printer a name and click on **Create**.

5. The **Create Printer Agent** will appear. Click on **Browse** for the NDPS Manager name. Select the Manager, then click **OK**.

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 **Next**. Type the IP address assigned to the PrintServer. In the **Printer Name** field, give your printer a name, e.g., L1.

> ***Note:*** *The logical ports on the 1-Port PrintServer (with only one parallel port) range from L1 to L3 The logical ports on the 3-Port PrintServer (with three parallel ports) range from L1 to L8. More than likely you will only need to use one logical port per parallel port on your PrintServer, but you can use the higher numbered logical ports if necessary.*

9. Click **Finish**. A window will appear, asking you to select drivers.

10. When you are asked to select drivers for Windows 3.1, Windows 95/98 and Windows NT 4.0, select *None*. The new Printer Agent "S_Printer" now appears in the **Printer Agent List** window.

Configuring Public Access Printers (For your reference only)

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.

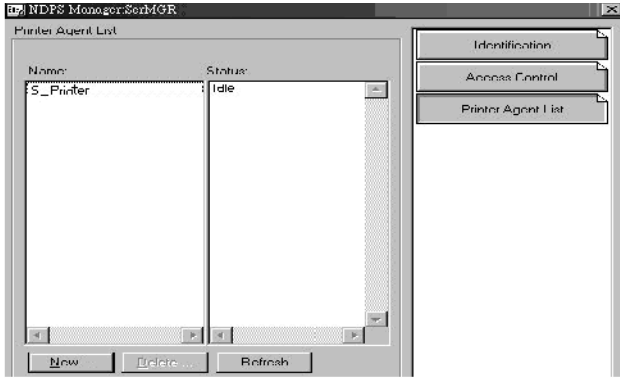
To install an NDPS printer on your computer, use the NetWare Printer Manager utility. If you are using Windows 95 or 98, run the **Nwpmw32.exe** program, which should be located at F:\public\win32 on your network. See your NetWare documentation or your network administrator to confirm the file location.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

1. Run the NetWare Printer Manager utility on your computer. On the **Printer Manager Menu** bar, click on **Printer** and then select *New*.

2. Click **Add**.

3. Select the available printer and click **Install**, e.g.: S_Printer. Click **Close**.

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



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 onto page 10 from the white bar code sticker on your PrintServer, in the form of "SC" plus 6 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 queues names for parallel ports 1, 2, and 3, respectively. Queues 2 and 3 apply only to the 2 and 3-Port model. If you do not use these options, 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:

```
C:\Printserver>quickset sc0c8a02 /un=PS /q1=epson
Please wait
Location of PS is found!
Enter the RELATIVE name of the volume where the print queues reside:
lab_server_sys
Creating Print Queue Object: epson...
Creating Print Queue Object: NDS_Q2...
Creating Printer Object: PS_P1...
Creating Printer Object: PS_P2...
Creating Print Server Object: PS...

          *****   QUICKSET Success  *****
PS is configured as a print server in the file server LINKSYS
with the following parameters:
  Operators:                    ADMIN
  Users:                        LINKSYS
Printer: PS_P1 is created. The service queue assigned is epson.
Printer: PS_P2 is created. The service queue assigned is NDS_Q2.

C:\Printserver>_
```

quickset SC0C8A02 /un=PS /q1= epson

The above example installs the PrintServer SC0C8A02 as a NetWare PrintServer in the current location. Its 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. See page 29 for more information about print server resources.

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. To set up the PrintServer manually, see page 40.

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 onto page 10 from the PrintServer’s white bar code sticker.

P is a user-friendly name you can give the PrintServer.
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 queues names for parallel ports 1, 2, and 3, respectively. Queues 2 and 3 apply only to the 2 and 3-Port model. If you do not use these options, 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.

Bi-Admin: PrintServer Management

Overview

The PrintServer is managed by a utility program called Bi-Admin on the PrintServer CD. Fully compatible with Windows 98, 95, NT, and Novell NetWare, 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. See page 40 for the PrintServer setup and maintenance under your NetWare version.

Installing the Bi-Admin Management Utility

1. Insert the PrintServer CD into your CD-ROM drive.

2. Click on **Start**, then **Run**. Type D:\utility\biadmin\disk1\setup in the provided window and hit **Enter**.

3. When the title screen of the setup program appears, click **Next**.

4. Enter the directory name where you want the Bi-Admin program to be installed. The default directory of C:\ProgramFiles\linksys\printserver is recommended. Click **Next**.

5. Continue with the setup program’s instructions. Setup will copy the necessary files to your system. Click **Finish** to complete the setup.

Starting the Bi-Admin Management Utility

1. To start the Bi-Admin program, click on **Start**, **Programs**, **Linksys PrintServer Admin**, and then **PrintServer 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 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, Printer Port chart. Default Name is the SC number located on the back or bottom of the PrintServer unit, and cannot be changed.

3. When the program is executed, it will ask for a password. Otherwise, enter the password if you have assigned one and click **OK**. You will be asked for the password every time you change the settings or protocols.

"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 on **Configuration**, then **System**.

"Printer Port" displays the number of printer ports on the PrintServer.

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

Go to page 39 for instructions on using the Bi-Admin utility.

Bi-Admin Help Files

The Help files for the Bi-Admin program can be accessed by clicking on **Help** 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 

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 above. 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 a read-only window, and gives you the following information:

```
Hardware ID: 0620103428
Firmware Version: 6010
Protocol ID: 003F
Default Name: SCE02282
Server Name: RHINO
NetWare Info:
  Master File Server:
  NDS Tree Name:
  NDS Tree Context:
  Print Server Mode Status:
  Remote Printer Mode Status: N/A
AppleTalk Info:
  Printer Type:
  SCE02282:LaserWriter
TCP/IP Info:
  IP Address: 192.168.1.38
  Gateway Address: 192.168.2.254
  Subnet Mask: 255.255.255.1
  Email Server IP Address: 0.0.0.0
  Printing Account Name:  N/A
  Redirect Account Name:  N/A
```

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

Refreshing the Device List:

The Refresh Icon 

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

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.

Your PrintServer only shows as many parallel port icons as it has ports. For example, if you have the 2-Port 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 once on the **Device Name** of the PrintServer whose address you want to change, then click on **Init Device** and **Set IP Address**, which will bring up the **Set IP Address** window.

If the **Default Name** field is empty, enter the PrintServer's SC number, which you copied onto page 10 from the PrintServer's bar code sticker. Enter the new IP Address, Gateway Address (optional), and Subnet Mask for the PrintServer, then click **Set**. The new settings will be written to the PrintServer unit. For a few quick TCP/IP setup tips, see page 58.

Also, if you have a DHCP server, you can enable DHCP and leave all the IP, Gateway, and subnet values on zero. See page 57 for more on DHCP.

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). The SC 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 device name of the PrintServer, click once on the **Device Name** of the PrintServer you want to affect, then click on **Configuration**, and then **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 on **Save**. The new setting will be stored in the PrintServer unit. To verify the change, click on 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.

Caution! *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 once on the **Device Name** of the PrintServer you want to change, then click **Configuration**, followed by **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 on **Save** 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**, then **Attach**. The **Add Cross Segment PrintServe**r window will appear. Enter the IP address of the remote unit, then click **Set**. 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 once on the **Device Name** of the PrintServer you want to reset, followed by **Init Device**, then **Reset Device**.You can also reset it by pressing the **Reset** button on the left edge of the unit, (3-Port model only), 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 on **Init Device**, then **Restore Factory Default**.

Caution! *Restoring Factory Default will* ***erase ALL*** *of the work that you have done on this unit since purchasing it.*

Logical Port Configuration:

Logical Port Configuration Icon 

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

Upgrading the Firmware:

The Firmware Upgrade Icon 

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 on the **Upgrade Firmware** icon and follow the instructions on the screen.

Exiting Bi-Admin:

The Application Exit Icon 

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

Troubleshooting

If your PrintServer is not working correctly, follow the advice in this chapter. If you have trouble printing, see the Hardware section first, and then go to the Printing section. If this Troubleshooting section does not resolve your problem, please see page 91 to contact Linksys Technical Support for help.

Hardware Issues

Problem 1: **All the PrintServer's LEDs are off.**
Solution 1: Check the power supply and the power connection.

Problem 2: **PrintServer's Status LED stays lit continuously.**
Solution 2: Reset PrintServer by unplugging the power supply and plugging it back in.

Problem 3: **PrintServer Status LED and Power LED stays on continuously and do not turn off.**
Solution 3: Reset the PrintServer by unplugging the power supply or by turning off you printer(s) and pushing the **Reset** button.

Problem 4: **I am using DHCP, and the PrintServer gets an IP Address conflict involving the PrintServer.**
Solution 4: 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.

Problem 5: **I am having problems using WPCONFIG to configure the PrintServer in Windows 95.**
Solution 5: WPCONFIG is designed for Windows 3.1 only. For Windows 95, 98, or NT, you should use Bi-Admin.

Problem 6: **The LED on the side of the 3-Port PrintServer is not lighting up.**
Solution 6: Check your cabling and make sure that the **Link** LED on your hub or switch is lit up. Change the dip switch settings on the PrintServer.

General Printing Issues

Problem 1: **When using 10BaseT cabling, the PrintServer unit does not work.**
Solution 1: Check that the **Link** LED on your switch or hub for the PrintServer port is lit up. If it is off, there is a problem in the network cable. If using 10BaseT or 100BaseTX, check the LED next to the connector. It should be on if the network connection is OK. Also, check and modify the dip switch settings on the PrintServer. Reset the PrintServer each time you change any of the dip switches.

Problem 2: **A printer connected to the PrintServer cannot print or prints garbage.**
Solution 2: Check the following:
- Cable connection between the PrintServer and printer.
- The printer driver in the application program or Windows matches the printer.
- Cabling distance is too long if it exceeds 15 feet.

Problem 3: **The Configuration button on the Printer Status screen in Bi-Admin is grayed out, even though my printer is bi-directional.**
Solution 3: The button is unavailable until the printer has finished its print jobs and sits idle.

NetWare Printing Issues

Problem 1: **My PrintServer prints garbage.**
Solution 1: Follow the following steps to identify the problem:

1. 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 Step 2. If the diagnostic report printout is not okay, check your printer. If you do not find faults while

inspecting your printer, contact Linksys Tech Support.

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

2. 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 step 3.

3. 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, 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 **Esc** and select **Information**, and record the queue ID.
(d) Send your test files to the print queue using normal print commands.

4. Reroute network printing to local printing.
(a) Disconnect the printer attached to your 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).

5. The test files you printed in step 3 should be in the queue directory. Print these files to the local printer using the COPY command with the /b option.
Example: copy /b test.txt LPT1

6. 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. Contact Linksys technical support (see page 91).

7. Enable queue service.
(a) Disconnect the printer attached to LPT1 of your PC and connect it to your 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**.

Problem 2: **My PrintServer does not appear in the Active Device List of the PSCONFIG program.**

Solution 2:
- Make sure that the PrintServer is on the same network segment as your PC.
- Load the NetBEUI protocol on your PC, so that Bi-Admin can try connecting using NetBEUI. Once connected, check the following:
- The NetWare protocol is enabled.
- The Ethernet frame type of your PC may be different than the one with your PrintServer. Enable all Ethernet frame types.

Problem 3: **My PrintServer is configured as a NetWare PrintServer, and cannot log in to a file server.**

Solution 3: Try the following:

1. 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

2. Make sure the master file server name is assigned correctly.

3. 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

4. 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.

5. Check the NetWare file server's name for character length. If it is over 20 characters long, rename it with less than 20 characters.

6. 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.

Problem 4: **My PrintServer is configured as a NetWare Remote Printer and can't log in to the NetWare PrintServer.**

Solution 4: Try the following steps:

1. Get the PrintServer information as described in Problem 3.
2. 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.

3. Check NetWare to see if the PrintServer is ready. If it is not, check the error message and perform the required corrective action.

4. 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.

Problem 5: **My PrintServer cannot print the jobs sent to the print queue.**

Solution 5: Try the following:

1. Check if the printer attached to the PrintServer is on-line.

2. Check if your PrintServer is logged into the file server (See Problem 3).

3. Check the current status of the queue. Run PCONSOLE and select Print Queue Information. Then select the queue and select **Current Queue Status**. See if there are three YESes. If not, set them to **YES**.

4. 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

5. 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**. Then select your desired printer and check if the queue is on the list. If its not, insert the queue into the list by pressing **Insert** key and select the queue. Then reset the PrintServer to service the new queue.

6. The total number of queues to be serviced may be over the limit of **56**. If so, reduce the number of queues.

Problem 6: **I used the Capture command to print a job, but the job was separated into two parts.**

Solution 6: 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.

Problem 7: **PSCONFIG or Bi-Admin shows "No Response."**

Solution 7: This may be due to the following:

- The network traffic is busy now. Wait for a minute and then try it again.
- The PrintServer is not powered on. Power it on.
- The network cable is disconnected. Check the cable.
- The node address of the PrintServer may be the same as the node address of another device on the network.

Problem 8: **QUICKSET timed out when checking if the device had logged in to the file servers.**

Solution 8: This means that the PrintServer did not log in the master file server. It might be that the Ethernet frame types do not match.

1. Try to find a computer the frame type of the PrintServer using PSCONFIG or Bi-Admin.
2. Enable the PrintServer's frame type to the frame type that the master file server uses and disable all other frame types.

Problem 9: **I cannot receive Notify message in NetWare 4.x environment.**

Solution 9:

1. Make sure you are a **Notify** member of the PrintServer.
2. Run NetAdmin and set the name of the Default Server to receive notification.

Problem 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.**

Solution 10: 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:

1. Ensure the PrintServer is ON.
2. Delete the print server object of the PrintServer.
3. Install the PrintServer again in NetWare 4.x NDS environment.

Problem 11: **The "String Before Job" and/or "String After Job" set tings in the Logical Printers don't work properly.**

Solution 11:
- Check the length of the control strings. No string can exceed **15** characters.
- Check that the control strings are in **HEX**.

Problem 12: **How do I service additional NetWare bindery file servers?**

Solution 12: 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.

1. Log in, with supervisory rights, to the other file servers you want your PrintServer to service.
2. Create queues and a print server name for your PrintServer on each file server you want to service.
3. Log in, with supervisory rights, to the master file server of your PrintServer.
4. Run PCONSOLE.
5. Select **Print Server Information**, then select your PrintServer in the print server list.
6. Select **Printer Server Configuration**, then select **File Server To Be Serviced**.
7. Insert the file server names of the other file servers to be serviced by your PrintServer.
8. Reset the PrintServer.

Problem 13: **How do I attach to more than one NetWare Print Server?**

Solution 13: 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.

1. Use PCONSOLE to create and assign the required printers and queues as detailed in the Remote Printer Mode section.
2. Run PSCONFIG and select **Set to NetWare Remote Printer Mode**. Enter the correct NetWare print server names in the print server name fields, then select **Execute Setup**.

Windows Printing Issues

Problem 1: **When printing from some software applications such as Power Point, it takes a long time and the print-out is incorrect.**

Solution 1: The problem is due to the printer being configured to *Start printing after the first page is spooled*. To change this setting:

1. Go to **Control Panel**, **Printers** and click on your printer.
2. Select **File**, **Properties**, **Details**.
3. When the **Details** screen appears, click the **Spool Settings** button.
4. When the **Spool Settings Dialogue** field appears, choose *Start printing after last page is spooled* and click **OK**.

Problem 2: **While adding my printer as instructed in Windows 95 or 98, I received a message stating that Printer could not be found.**

Solution 2: 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:

1. Select **Network Printer** when asked How is the printer attached to your computer?
2. Then when prompted for Network Path or Queue name enter a dummy value such as \\SCnum\P1 or P2 or P3 for LPT2 or LPT3 respectively, and select **Next**
3. The printer wizard will display a message stating the Network Printer is off-line. Continue to install the printer as normal.
4. When finished, go to **Control Panel**, **Printers** and select your printer. The printer icon will be grayed out indicating the printer is not ready.
5. Select **Properties**, **Details**. In the Print to the following port box, select **PrintServer**.
6. Click **Apply**, then **OK**, then close the properties window.
7. Select the printer and go to the **File** menu. Check the

Work off-line option is **OFF**.

8. If the printer is connected and powered **On**, the printer icon should no longer be grayed out, and you should be able to print.

Problem 3: **I connected and configured a WPS (Windows Printing System) printer as described, but I can't get the print job to print.**

Solution 3: 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 Solution 2 above. The following is a list of a few common WPS printers:

Canon LBP-430W
Epson ActionLaser 1300/W, Epson EPL-5500/W
HP LaserJet 5L, Lexmark WinWriter Series
NEC SuperScript series, Olivetti PG304
Samsung MyLaser Series
HP DeskJet CX and CS Series

Problem 4: **My text prints just fine, but my graphics come out looking like garbage.**

Solution 4: Get the latest driver for your printer from the manufac turer. Then, click on **Start**, **Settings**, **Printers**. Right-click on the printer driver and choose **Properties**.

For Windows 95/98 users, click on **Details**, then click on **Spool Setting** and change the setting to *Spool Data Format (RAW)*. Click **OK**, then click **OK** again.

NT Users: After you get into the **Properties** windows for the printers, click on **General**. Click on **Print Processor** and choose *RAW* or *EMF*. Click on **Always Spool RAW Data Type**. Click **OK**, then **OK** again.

Problem 5: **When trying to configure or change the TCP/IP settings on the PrintServer, I get an "SPX Connect" Error.**

Solution 5: The utilities the PrintServer uses require the IPS/SPX protocol to be installed. Also, 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.

Problem 6: **Some DOS-based programs do not work on a Windows 95/98 peer-to-peer network.**

Solution 6: Some DOS application require an **LPT port** to print. You can enable the NetBEUI protocol and capture a port. You must have NetBEUI installed for you network. Follow the instructions below:

1. Run Bi-admin and select the *Configuration Menu* option, then NetBEUI.
2. At the Domain prompt, enter your network workgroup name.
3. Click on **Save to Device**.
4. Open Network Neighborhood. You should see the PrintServer on your network. If not, press **F5** a few times to refresh the window.
5. Double-click on the **PrintServer**, e.g. "sce15223" or "scc15232."
6. You should see the port in the form of "Pn", e.g. P1, where n is the port number on the PrintServer.
7. Right-click on the port you want to capture, e.g. P1, and select *Capture Printer Port*.
8. A window will appear asking for a Device. Select the port you want, e.g., LPT1, LPT2.
9. Put a check on the *Reconnect at logon* option so you can connect to the PrintServer when you reboot your computer.
10. Now, to set up the printer, click on **Start**, **Settings**, then **Printer**.
11. Right-click on the printer you want to set up,e.g HP Laserjet 5L, and select *Properties*.

12. Click on the **Details** tab.

13. Change the Print to the LPT port number you selected in step 8 of these instructions.

14. Click **Apply**, then **OK** to finish. Finally, 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

DHCP Support for the PrintServer

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

To enable DHCP, you must run the Bi-Admin program (see page 40 for the Bi-Admin installation). 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 **OK**.

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, then click **Save to Device**. You can exit the Bi-Admin program. To install the PrintServer driver, see page 13 for Windows 95, 98, and NT installation.

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

Setting Up 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

where X is a unique, arbitrarily assigned number from 1 to 255. Each computer must have its own unique X number. Note: Never use 127 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 255.

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

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.

TCP/IP Setup for Windows 98 and 95

1. Click on Start, **Settings**, then **Control Panel**. Double-click on the **Network** icon.

2. If the *TCP/IP Protocol* is listed for your network adapter, go to step 4. Otherwise, click on the **Add** button.

3. When the **Component Type** window appears, click on **Protocol**, then **Add**.

4. Select *Microsoft* in the Manufacturers list, then choose *TCP/IP* in the **Network Protocols** list. Click **OK**.

5. When the **Network** window reappears, click once on TCP/IP, followed by the **Properties** button.

6. Click on **Specify an IP Address**.

7. Enter an IP Address for the computer, along with a Subnet Mask. Click **OK**. If you do not have these values, consult your network administrator.

8. When the **Network** window reappears, click **OK**. Choose to restart your machine. TCP/IP has now been successfully installed.

IPX Setup for Windows 98 and 95

1. Click on Start, **Settings**, then **Control Panel**. Double-click on the **Network** icon.

2. If the *TCP/IP Protocol* is listed for your network adapter, go to step 4. Otherwise, click on the **Add** button.

3. When the **Component Type** window appears, click on **Protocol**, then **Add**.

4. Select *Microsoft* in the Manufacturers list, then choose *IPX/SPX protocol* in the **Network Protocols** list. Click **OK**.

TCP/IP Setup for Windows NT 4.0

1. Click on **Start**, **Settings**, and **Control Panel**. Double-click on the **Network** icon.

2. When the **Network** window appears, click on the **Protocols** tab. Click on the **Add** button.

3. Find the *TCP/IP protocol* in the **Select Network Protocol** field. Click on it once, then click **OK**.

4. When asked if you want to use DHCP, click on **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 on the **Bindings** tab. Windows will store your new bindings.

7. Click on the **Protocols** tab. Click once on **TCP/IP**.

8. Click on the **Properties** button. Select the type of network adapter you have from the Adapters box. Click on **Specify an IP Address**.

9. Enter the IP Address for the computer, along with the Subnet Mask. Check with your network administrator for your settings.

10. Enter your Default Gateway if you have one; otherwise, leave the entry blank.

> ***Note:*** *a Default Gateway is not required. Check with your network administrator.*

11. When you finish, click **OK**. If NT asks about WINS, ignore it.

12. When the **Network** window reappears, click **Close**. Restart your computer when prompted. TCP/IP has now been successfully installed.

IPX Setup for Windows NT 4.0

1. Click on **Start**, **Settings**, and **Control Panel**. Double-click on the **Network** icon.

2. When the **Network** window appears, click on the **Protocols** tab. Click on the **Add** button.

3. Find the *IPX/SPX protocol* in the **Select Network Protocol** field. Click on it once, then click **OK**.

Types of Cabling

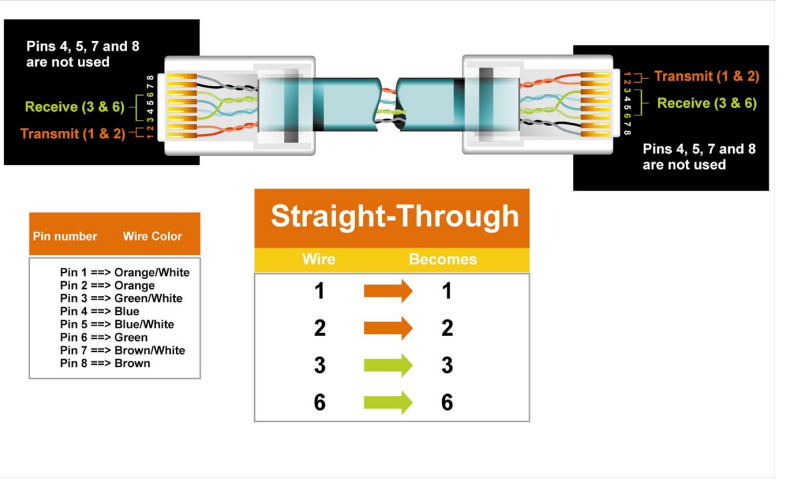
There are different grades, or categories, of twisted-pair cabling. Category 5 is the most reliable and widely compatible, and is required for Fast Ethernet.

You can buy Category 5 cabling that is pre-made, or you can cut and crimp your own. Category 5 cables can be purchased or crimped as either straight-through or crossed. A Category 5 cable has 8 thin, color-coded wires inside that run from one end of the cable to the other. Only wires 1, 2, 3, and 6 are used by Ethernet networks. In a straight-through cable, wires 1, 2, 3, and 6 at one end of the cable are also wires 1, 2, 3, and 6 at the other end. In a crossed cable, the order of the wires change from one end to the other: wire 1 becomes 3, and 2 becomes 6.

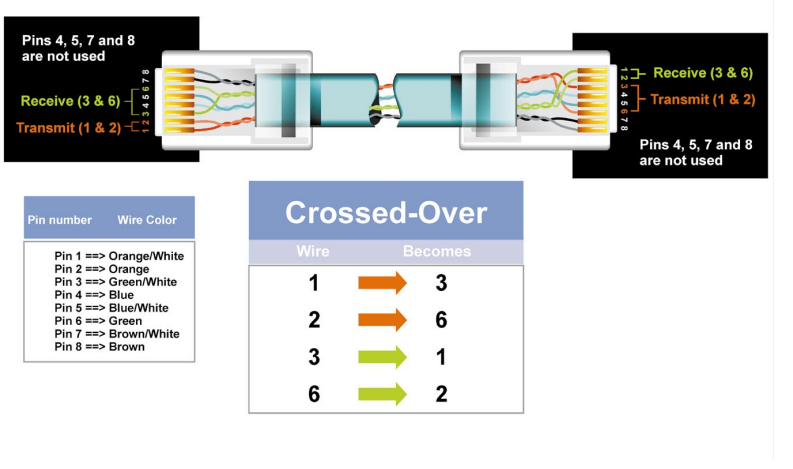
The color code for the 4 wires should be as follows: **Wire 1**, white with an orange stripe; **Wire 2**, orange; **Wire 3**, white with a green stripe; **Wire 6**, green. The other four wires have to be connected as follows: **Wire 4**, blue; **Wire 5**, white with a blue stripe; **Wire7**, white with a brown stripe, **Wire 8**, brown.

To figure out which wire is wire number 1, hold the cable so the end of the plastic RJ-45 tip (the part that goes into a wall jack first) faces away from you. Flip the clip with the copper side facing up. The spring clip will now be parallel to the floor. When looking down on the coppers, wire 1 will be on the far left.

Straight Through Cabling



Crossed Over Cabling



Parallel Port Pin Assignments

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

Manual NetWare 5.x and 4.x in Windows With IPX

Print Server Mode

The instructions below explain how to establish communication between the PrintServer unit and the rest of your NetWare 4.x network in a mostly Windows environment.

1. First, install and run the Bi-Admin program on the PrintServer's CD. The use of the Bi-Admin program is covered on page 37. Follow those steps now to install and run Bi-Admin if you haven't already.

2. 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, Printer Port chart. Bi-Admin will ask for the password given to the device. Enter the password and click **OK**. If no password is assigned, just click **OK**.

3. Highlight the Device Name of the PrintServer to be configured by clicking once on it. You may be asked to enter the password again.

4. Click on **Configuration**, then **NetWare**. The **NetWare Configuration** window will appear.

5. Click on the round *Print Server* option button to select it, then click on **PrintServer Configuration**. The **PrintServer Configuration** window will appear. Give the Linksys PrintServer a unique name in the **Print Server Name** field. Remember the name you use; you'll need it later on. (Example: MARKETING, etc.)

6. Next to the **NDS Tree Name** field, click on the drop-down arrow and pick the tree that will handle the PrintServer. If the list is blank, enter the name manually.

7. In the **NDS Context** field, choose the context where the PrintServer will be installed. If you don't see a context, consult your NetWare user guide to establish one. Click on **Browse** and navigate to the content you want the PrintServer configured to.

Note: *Contrary to NetWare Setup, the NDS context does not start with a period. The context must begin with the name of the organization where the PrintServer is being installed. If the organization where the PrintServer is being installed is a organizational unit, then the organization must be listed, (separated by a '.' period).*

8. Leave the **Master File Server** field empty.

9. Enter a number from 1 to 255 in the Polling Queue. This is how long in seconds the PrintServer will wait before polling the queue for print jobs that might be waiting.

10. If turned on, **Job Notification by Connection ID** will automatically notify the file server after a job is complete, allowing the administrator to use PCONSOLE or other programs to monitor users' printing.

11. Pick the frame types you want the PrintServer to support.

If you want to change the PrintServer's configuration password (required for changing the PrintServer's internal settings), click on **Change Password**.

When you finish, choose to execute and click **Save To Device** for the new settings, then close down the Bi-Admin program. Start up NetWare's NWAdmin program. See your NetWare documentation for help.

Creating a Print Server Resource

1. Navigate through the tree on the far left until you locate the Context where the PrintServer will be installed - this must be the same context or container you set up in step 7 above. Right-click on the desired **Context**. When the pop-up menu appears, click on **Create**.

2. Scroll down to **PrintServer** and double-click on it. The **Create Print Server** window will appear.

3. In the **Print Server Name** field, enter the name you gave the PrintServer in step 5 on page 65.

4. Click on the **Create** button. The newly created PrintServer should appear in the current context on the left.

Creating a Printer Resource

1. Right-click on **Context**. Click **Create**.

2. When the popup menu appears, scroll down to **Printer** and double-click on it.

3. Enter a name for the printer that will be attached to the PrintServer. (Example: HP5). Click on **Create**.

Creating a Print Queue Resource

1. Right-click on the **Context** again. Scroll down to **Print Queue** and double-click on it. When the Create Print Queue field appears, click **Create**. Select the *Directory Service Queue Menu* option.

2. Enter a name in the **Print Queue Name** field. (Example: SALESQUEUE)

3. Next to the Print Queue Volume field, click on the dotted button. The **Select Object** window appears.

4. Browse through the objects and context windows until you come to an available volume where the new print queue will be installed. The volumes will appear in the **Available Objects** window.

5. When the desired volume appears, double-click on it. The volume will appear in the **Print Queue Volume** field in the **Create Print Queue** window. Click on **Create**.

Double-click on the organization or the organizational unit where the PrintServer was set up. When opened, the current Context should now contain a print server, a printer, and a queue.

Assigning a Queue to the Printer

1. Double-click on the **Printer** object in the context. The **Printer** window will appear. In the window, click on the **Assignments** tab, then **Add**.

2. The queue you just created will appear in the **Available Objects** window. Click on it, then click **OK**. The queue you created will appear in the list of print queues. Click **OK**.

Configuring the Printer Resource

1. In the selected Context, double-click on the printer object, then click on the **Configuration** tab.

2. Set the Printer type to *Parallel*. Click on **Communication**.

3. Set the LPT value to the appropriate port on the PrintServer where the printer will be connected. Select parallel (LPT) port 1, 2, or 3.

4. Click on the **Assignments** tab. Click on **Add**. The queue you created above will appear in the list of available queues. Double-click on it to show it in the **Print Queues** field. Click **OK**.

Directing the Printer to the Printer Resource

1. Double-click on the Print Server object in the context. The **Print Server** window will appear. Click on **Assignments**, followed by **Add**.

2. The printer you just created will appear in **Available Objects**. Double-click on it. The printer will appear in the list of printers on-line.

3. Look at the bottom of the **Print Server** window. The Status item should say “Running”- this may take a moment depending on network traffic. If it doesn’t, repeat all of the steps from “Creating a Printer Resource.”

4. When you finish, click **OK**. The setup is now complete. You may need to reboot the computer and restart the PrintServer. Follow your NetWare instructions for setting up a printer on your computer(s). The new printers and their queues will show up in Windows.

Adding More than One Printer (EPSX3 and EFSP42)

If you decide to add a second or third printer, repeat all of the steps from “Creating a Printer Resource” on the previous page.

If you need to change the PrintServer’s internal setup or configuration at any time, see page 37. If any changes are made to the PrintServer’s settings, you may have to reset the PrintServer and printer objects and redo the assignments.

You will need to recreate printer resources for each printer you plan to add to the network.

NetWare 5.x and 4.x with Windows

Remote Printer Mode

The instructions below explain how to manually configure the PrintServer for Remote Printer Mode, and establish communication between it and the rest of your NetWare 4.x network in a mostly Windows environment. PSERVER must be loaded and configured properly on your file server before continuing. Consult your NetWare documentation for information on how to do this.

Before you begin, make sure you have already set up a NetWare print server resource on a file server or elsewhere. See page 29 for details on print server resources.

1. Install and run the Bi-Admin program found on the PrintServer Setup CD. (The use of the Bi-Admin program is covered in the Managing the PrintServer section. Follow the steps on page 37 now to install and run Bi-Admin if you haven't already).

2. When the Bi-Admin program runs, it automatically scans the network for available Linksys PrintServer hardware. Any hardware found on the network will appear in the Default Name, Device Name, Printer Port chart. Bi-Admin will ask for the password given to the device. Enter the password, or leave it blank if no password is assigned. Click **OK**.

3. Click once on the Device Name of the PrintServer you want to configure to highlight it.

4. Click on **Configuration**, then **NetWare**. The **NetWare Configuration** window will appear.

5. Click on the round **Remote Printer** option button to select it, then click on **Remote Printer Configuration**. The **Remote Printer Configuration** window will appear.

6. Give the PrintServer its own unique name. Enter a name into the **Device Name** field, which will refer to the PrintServer hardware itself. (Example: MARKETING, PRINTSERVER1, etc.)

7. In the **NetWare PrintServer for P1** field , enter the name of the NetWare print server resource that the Linksys PrintServer hardware will log into. The print server should already be set up on a file server or elsewhere. When you finish, click on **Save to Device**.

8. Run Novell's NWAdmin program. When the program comes up, find the Context tree located on the left side of the screen. Navigate through the available Contexts until you come to the Context where your NetWare print server is set up, which should have been done before the software setup.

Creating a Print Server Resource

1. Navigate through the tree on the far left until you locate the Context where the PrintServer will be installed, which must match the context or container you set up in step 7 above. Right-click on the desired **Context**. When the popup menu appears, click on **Creat**e.

2. Scroll down to PrintServer and double-click on it. The **Create Print Server** window will appear.

3. In the **Print Server Name** field, enter the name you gave the PrintServer in step 5 on the previous page.

4. Click on the **Create** button. The newly created PrintServer should appear in the current context on the left.

Creating a Print Queue Resource

1. When you find the proper Context, right-click on it. Click on **Create**. Scroll down to the *Print Queue* option and double-click on it. The **Create Print Queu**e window will appear.

2. Select the **Directory Service Queue** menu option.

3. Enter a name in the **Print Queue name** field . Example: SALESQUEUE

4. Next to the Print Queue Volume field, click on the dotted button. The **Select Object** window will appear. Browse through the objects and context windows until you come to an available volume where the new print queue will be installed (the volumes will appear in the **Available Objects** window). When the desired volume appears, double-click on it. The volume will appear in the Print **Queue Volume** field in the **Create Print Queue** window. Click on **Create**.

Creating a Printer Resource

1. Right-click on the **Context** again. When the popup menu appears, scroll down to **Printer** and double-click on it.

2. Enter a name for the printer to be attached to the PrintServer. The name you enter must be the same as the one you gave your NetWare print server when you created it on the file server or elsewhere. When you're finished, click on the **Create** button.

The Context now shows a print server resource, a print queue, and a printer.

Configuring the Printer Resource

1. In the selected Context, double-click on the printer object, then click on the **Configuration** tab.

2. Set the Printer type to *Parallel*. Click on **Communication**.

3. Set the LPT value to the appropriate port on the PrintServer where the printer will be connected. Choose parallel (LPT) port 1, 2, or 3 if you have a 3-Port model.

4. Set the Interrupts value to *Polled*. Set the Connection type to *Manual Load*. Click **OK**.

5. Click on the **Assignments** tab. Click on **Add**. The queue you created above will appear in the list of available queues. Double-click on it so that it appears in the print queues field . Click **OK**.

Configuring the Print Server Object

1. Double-click on the print server object in the Context.

2. Click on the **Assignments** button, followed by **Add**. The printer you created above will appear. Double-click on it. When the printer appears in the **Printer List** field , click **OK**.

3. On your file server, take the running print server resource service down, then bring it back up. The setup is complete. Refer to your NetWare documentation to see the PrintServer on the network using PSERVER or another NetWare printer utility.

Adding More Than One Printer (for EPSX3 and EFSP42)

If your PrintServer has more than one parallel port and you want to add more than one printer, repeat all of the steps from "Creating a Printer Resource" on the previous page.

When you create a new printer resource, use the same printer name you used for the first printer, with an additional _P2 or _P3 at the end to designate which additional printer you're adding. If printer number one is called **myprinter**, for example, printer two would be called **myprinter_P2**, and printer three would be **myprinter_P3**.

If you need to change the PrintServer's internal setup or configuration at any time, see page 37 on Bi-Admin.

NetWare 4.x with DOS

Print Server Mode

The instructions below explain how to establish communication between the PrintServer unit and your NetWare 4.x network in a DOS environment.

1. Log into your NetWare network as an Administrator.

2. Run NetWare's PCONSOLE program from DOS.

3. When the main menu appears, choose *Change Context*. Enter the name of the context where you want to install the PrintServer. For more information about NetWare contexts, see your NetWare user guides.

Creating Queues

1. Select *Print Queues* from the main **Available Options** menu. When the **Print Queues** field appears, press the **Insert** key on your keyboard. Type in the name of the queue you want to create (example: MARKETING) and press **Enter**.

2. When asked for the name of the volume where the queue will be installed, press **Insert**. The **Object Browser** window appears. Use the arrow keys on your keyboard to move through the list until you find and highlight the volume you want, then press **Enter**.

Repeat for each queue you want to create. The queues will show up in the **Print Queues** field. When you are finished, press **Esc**.

Creating Printers

1. Select *Printers* from the main **Available Options** menu. When the Printers list appears, click **Insert** and enter the name of the printer you want to create (example: MYPRINTER). Click **Enter**.

2. Use the arrow keys to highlight the name of the printer you just created and press **Enter**.

3. Make sure the Printer Type is set to *Parallel*.

4. Scroll down to **Configuration** and click **Enter**.

5. Make sure the Port is set to the correct PrintServer device port.

6. The Location item should be set to *Auto Load*. When you finish configuring the printer, press **Esc**.

Assigning Queues to Printers

1. When the Configuration menu re-appears, arrow down to the Print Queues Assigned option and press Enter. Press Insert. Select the queue where the printer will get its jobs from and press Enter.

2. Press Esc. When the Configuration menu reappears, press Esc to return to the Printers list field .

3. Repeat all of the steps in the **Create Printers** and **Assign Queues** sections above for each printer you want to create. When you finish, press **Esc** until the **Available Options** menu reappears.

Creating Print Servers

1. Scroll down to *Print Server* and press **Enter**. When the **Print Servers** field appears, choose **Insert**.

2. Give the print server a name and press **Enter** (example: MARKETING). The new name will appear in the Print Servers list . Highlight the name of the new print server and press **Enter**.

Assigning Printers to PrintServers

1. When the **Print Server Information** field appears, choose **Printers** and press **Enter**. Press the **Insert** key. Choose the printer you just created from the Object, Class list and press **Enter**. The printer(s) will appear in the **Serviced Printers** field.

2. Press **Esc** to return to the **Print Server Information** screen, then **Esc** again to return to the Print Servers list field. Write down the name of the print server you just created for later use. Also, write down the Context where the print server was created; you will find it listed at the top of the screen. When finished, press **Esc** twice to exit the program.

Configuring the Print Server Hardware

1. Run the PSCONFIG program located in the D:\Utility\DOS directory on the Linksys PrintServer CD.

2. The program will display an **Active Device List** table with a list of active PrintServers on the network. Each PrintServer has a name, default name, network number, and number of available ports.

3. Select the PrintServer device you just installed and press Enter. A list of available options will appear.

Choose Set to NetWare PrintServer mode from the list and press Enter.

4. For the Print Server Name, use the same name you used in the Create Print Servers section on the previous page.

5. For the **NDS Tree Name**, choose the tree where the PrintServer was installed.

6. For the **NDS Context**, type in the Context name you wrote down in the Assign Printers step on the previous page.

Leave the **Master File Server** field empty.

7. Enter a number from 1 to 255 in the Polling Queue, which means how many seconds the PrintServer waits before polling the queue for waiting print jobs.

8. If turned on, *Job Notification by Connection ID* will automatically notify the file server after a job is complete, allowing the administrator to use PCONSOLE or other programs to monitor users' printing.

9. Pick the frame types you want the PrintServer to support.

10. If you'd like to change the PrintServer's configuration password (required for changing the PrintServer's internal settings), do so by clicking on **Change Password**.

11. When you finish, click on **Execute Setup** to save the PrintServer's new changes. Close down the PSCONFIG program.

The setup is complete. The PrintServer will automatically log into your file server and make itself available for use. If you run Console Monitor or other NetWare monitoring software, you will be able to verify the PrintServer's connection.

NetWare 4.x with DOS - Remote Printer Mode

The instructions below explain how to configure the PrintServer for remote Printer Mode, and establish communication between it and the rest of your NetWare 4.x network in a DOS environment.

Before you begin, make sure you have already set up a NetWare print server resource on a file server or elsewhere. You will need the name of the print server before you begin. See page 18 for more information about print server resources.

1. From a computer, log into your NetWare network as Administrator.

2. Run NetWare's PCONSOLE program from DOS.

3. Choose Change Context from the main menu. Enter the name of the context where you want to install the PrintServer. For more information about contexts, see your NetWare documentation.

Creating Queues

1. Select Print Queues from the main menu.

2. Press Insert on your keyboard when the Print Queues field appears.

3. Type in the name of the queue you want to create (example: MARKETING) and press Enter.

4. You will be asked to supply the print queue's volume where the queued jobs will be stored. Press Insert. The Object,Class browser window will appear.

5. Use the arrow keys to move through the various objects and classes until you find the volume you want. Highlight it and press Enter.
6. The queue will show up in the Print Queues list field. Repeat these steps for each queue you want to create. When you're finished, press Esc to return to the main menu.

Creating and Configuring Printers

1. Select *Printers* from the main menu. When the Printers list appears, press **Insert** and enter the name of the printer you want to add. (The "printer" in this case is actually the PrintServer device).

2. Write down the name you just entered for later use. Press **Enter**.

3. Highlight the name of the printer you just created and press **Enter** to configure it.

4. Make sure the Printer type is set to *Parallel*.

5. Scroll down to Configuration and press **Enter**.

6. Make sure the Port is set to the correct PrintServer device's parallel port (LPT1, 2, or 3, depending on the port that will be servicing the printer).

7. Make sure the location is set to *Auto Load*. When finished, press **Esc**.

8. When the **Configuration** menu reappears, arrow down to the Print queues assigned option and press **Enter**.

9. Press **Insert**. Select the print queue where the printer will get its jobs from and press **Enter**. Press **Esc** when finished.

10. When the **Configuration** menu reappears, press **Esc** to return to the Printers list field.

Adding More than One Printer (EPSX3 and EFSP42)

Repeat steps 1-10 to set the configuration for each printer you create. When adding a second or third printer, you'll need to use the same printer name you used for the same printer, with an additional _P2 or _P3 added at the end to designate which printer you're adding. If printer one is called myprinter, for example, printer two would need to be called myprinter_P2, and printer three would be myprinter_P3.

Assigning Printers to Print Servers

1. When you're finished, press **Esc** repeatedly until the available Options main menu reappears. Scroll down to Print Servers and press **Enter**.

2. When the **Print Servers** menu appears, select the NetWare print server resource that was already up and running when you began the installation.

3. When the **Print Server Information** window appears, choose the **Printers** option and press **Enter**.

4. When the **Serviced Printers** list appears, press **Insert**. Choose the printer you want to have serviced by the print server. (The "printer" is actually the PrintServer device you set up in step 1 on the previous page).

5. After selecting the desired printer, press **Enter**.

6. Press **Esc** repeatedly until you exit the program.

Configuring the Print Server Hardware

1. Run the PSCONFIG program located in the D:\UTILITY\DOS directory on the Linksys PrintServer CD.

2. The program will display an **Active Device** list table with a list of active PrintServers on the network. Each PrintServer has a name, default name, network number, and number of available ports.

3. Select the PrintServer device you just installed and press **Enter**. A list of available options will appear. Choose Set to NetWare Remote Printer Mode from the list and press **Enter**. Make up a Print Server name and enter it, (ie, MARKETING, TARDIS, etc.).

4. Enter the name of the existing print server resource name into Parallel Port 1. Do the same for Port 2 and Port 3 if you have an EPSX3 and you are adding printers to the PrintServer's second and third parallel ports.

5. Select the desired frame type for your network. Select the Execute Setup. When the program finishes, press **Esc** repeatedly till the program closes.

The setup is complete. The PrintServer will automatically log into your file server. If you run your Console Monitor or other NetWare monitoring software, you will be able to verify the PrintServer's connection. Unload and reload the print server resource on the file server. When PSERVER.NLM comes up, the newly installed printers will appear.

NetWare 3.x in DOS

The instructions below explain how to establish communication between the PrintServer unit and the rest of your NetWare 3.x network in a DOS environment. PSERVER must be loaded and configured properly on your file server before continuing. Consult your NetWare documentation for information on how to do this.

Manual Setup of the Print Server Mode

1. Run the **PSCONFIG** program, which can be found under the D:\UTILITY\DOS directory on the PrintServer CD.

2. When the table of active devices appears, highlight the PrintServer device you want to configure and press **Enter**.

3. Choose *Set to NetWare Print Server Mode* from the **Available Options** menu and press Enter.

4. Make up a Print Server name and enter it. Write it down; you will need it in a moment.

5. Skip the NDS Tree Name and NDS Context entries.

6. When you reach **Master File Server**, press **Enter** to choose from a list of available file servers.

7. Enter a number from 1 to 255 in the Polling Queue, which is how many seconds the PrintServer waits before polling the queue for print jobs that might be waiting.

8. If turned on, *Job Notification by Connection ID* will automatically notify the file server after a job is complete, allowing the administrator to use PCONSOLE or other programs to monitor users' printing.

9. Pick the frame types you want the PrintServer to support.

10. If you want to change the PrintServer's configuration password (required for changing the PrintServer's internal settings), do so by clicking on **Change Password**.

11. When you finish, click on *Execute Setup* to save the PrintServer's new changes. Close down the PSCONFIG program.

12. Run Novell's PCONSOLE program.

13. Choose **Print Queue Information** and press **Enter**.

14. A list of available print queues will appear. Press **Insert**.

15. Enter the name of the new queue you'd like to create and press **Enter**. Repeat for each new queue you'd like to make.

16. When finished, press **Esc** to return to the **Available Options** menu.

17. Choose **Print Server Information**.

18. When the **Print Servers** window appears, type in the name of the PrintServer you wrote down in step 4 and press **Enter**.

19. The PrintServer's name will show up in the list of available print servers. Highlight it and press **Enter**.

20. Select *Printer Configuration* and press **Enter**.

21. A table of configured printers will appear. The first column shows the names of the configured printers; the second column shows the LPT ports on the PrintServer device. Zero refers to LPT1, 1 refers to LPT2, and 2 refers to LPT3. Press **Enter** and fill out the information.

22. Enter a name for the printer you're attaching to the PrintServer. (Example: ACE)

23. Choose the Parallel or LPT port that the PrintServer should use.

24. Set Interrupts to **No** and leave the IRQ and Buffer entries blank.

25. Press **Esc** to exit. Your new printer will appear in the configured printers list.

26. Press **Esc** repeatedly until the program ends.

27. The setup is complete. The PrintServer will automatically log into your file server and make itself available for use. If you run your Console Monitor or other NetWare monitoring software, you will be able to verify the PrintServer's connection.

Remote Printer Mode

The instructions below explain how to configure the PrintServer for Remote Printer Mode, and establish communication between it and your NetWare 3.x network.

Manual Setup

1. Run the **PSCONFIG** program under the D:\UTILITY\DOS directory of the Linksys PrintServer CD.

2. When the table of active devices appears, highlight the PrintServer device you want to configure and press **Enter**.

3. Choose *Set to NetWare Remote Printer Mode* from the **Available Options** menu and press **Enter**.

4. Make up a Print Server name and enter it. Write it down also - you will need it in a moment.

5. Enter the name of the existing print server resource name into Parallel Port 1. Do the same for Port 2 and Port 3 if you are adding printers to the PrintServer's second and third parallel ports.

6. Select the desired frame type for your network.

7. Select the *Execute Setup*. After the program is finished, press **Esc** repeatedly until the program closes.

8. Run NetWare's PCONSOLE program.

9. From the main menu, choose **Print Queue Information**. A list of available queues will appear. Press **Insert**.

10. Type in the name of the queue you want to create and press **Enter**. Repeat for each queue you want to create. When you're finished, press **Esc** to

return to the main menu. Select *Print Server Information* from the main menu.

11. Select the print server resource that was already up and running when you began the PrintServer's software installation.

12. The **Print Server Information** screen will appear. Choose *the Print Server Configuration menu* item, followed by *Printer Configuration.*

13. A table of configured printers will appear. The first column shows the names of the configured printers; the second column shows the LPT ports on the PrintServer device. Zero refers to LPT1, 1 refers to LPT2, and 2 refers to LPT3. Press **Enter** and fill out the information.

14. Enter a name for the printer you're attaching to the PrintServer (Example: TARDIS).

15. Choose the Parallel or LPT port that the PrintServer should use.

16. Set Interrupts to **No** and leave the IRQ and Buffer entries blank.

17. Press **Esc** to exit. Your new printer will appear in the configured printers list.

18. Press **Esc** to return to the Print Server Configuration menu.

19. Choose *Queues Serviced by Printer*. A list of Defined Printers will appear. Select the printer you want to configure.

20. Press **Insert**. Choose the queue you created above. When asked for a Priority, press **Enter**.

21. Press **Esc**. Repeat steps 11 through 17 for each printer. When finished, press **Esc** repeatedly until the program closes.

Unload and reload the print server resource on the file server. When PSERVER.NLM comes up, the newly installed printers will appear.

Using Windows NT 4.0 LPR Port

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 on **Start**, **Settings**, **Control Panel**, and then double-click on the **Network** icon. Click once on the **Services** tab.

2. Choose to add a service. Click on **Add** and select the *Microsoft TCP/IP Printing* option. Restart your computer.

3. Once the 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 on **Start, Settings**, then **Printers**. Right-click on the printer that you want to set up.

5. Click once on the **Ports** tab. Click on **Add Port** 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. (For all PrintServers models)
   - **L2** - represents LPT2. (For 2 and 3-Port models only)
   - **L3** - represents LPT3. (For 2 and 3-Port models only)

7. Click **OK**.

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.

Tips on Using the 2-Port Switched PrintServer (EFSP42)

Switching Advantages

Your EtherFast 10/100 Switch boosts your network performance several times over, conserving your time, money and resources. The scalability of your Switch, its full duplex data transfer and dedicated bandwidth all contribute to maximizing efficiency in your Fast Ethernet network.

Your EtherFast 10/100 Switch's **autosensing** feature gives you a key advantage over other forms of networking by upgrading speed-critical network segments to 100mbps while allowing existing 10BaseT networks to operate with the Switch. Allowing 10BaseT and 100BaseTX hardware speeds to run alongside each other eliminates the need to purchase new hardware, rewire and reconfigure an entire site all at once. This **scalability** factor ensures that Fast Ethernet will not fall obsolete to upgrades in speed standards and maintains use of all your old equipment until you decide to buy speedier replacements. Otherwise, throwing away all your older, slower equipment in an old-fashioned "forklift upgrade" is the only other alternative.

Scalability allows you to budget for your networking needs over time. Now networks can custom-run fast and slow segments at the same time for different users and departments. Publishing, R&D, and accounting departments can enjoy 100Mbps transfer, while other corporate segments conserve bandwidth by operating at slower, more economical 10Mbps speeds.

Switches also feature **full duplex data transfer**, meaning that all computers on the switch can "talk" to the switch at the same time. Plus, switches can send and receive data simultaneously to all connections, whereas a hub cannot. A hub simply works with one computer at a time and only sends or receives data, since it cannot handle two way communication.

In addition to full duplex transfer, your 10/100 Switch surges your network with **dedicated bandwidth** to each node, devoting 100Mbps to every device and multiplying your bandwidth for each added node. For instance, if you connect five computers to your EtherFast 10/100 Switch, then each computer will get a dedicated bandwidth of 100Mbps at full duplex transfer. If you run 5 computers from a 100Mbps hub, then each computer would only share a part of the 100Mbps bandwidth.

Here are some of the ways your EtherFast 10/100 Switched PrintServer can help you optimize your network speed: (EFSP42 only)

• Speed up Nodes From Your 10BaseT Network

In a 10BaseT network, connect your hubs, file servers and key users such as managers and network administrators directly to your Switch to channel dedicated bandwidth in full duplex mode to each station. The Switch can communicate with all its connections simultaneously, whereas a hub can only communicate with one workstation at a time, in half duplex transfer mode.

• Conserving Bandwidth with 10Mbps & 100Mbps Segments

10BaseT and 100BaseTX hardware are not readily compatible, but your 10/100 Switch can designate network segments of different speeds. This allows you to run one 10mbps segment to serve users without a need for considerable speed, and a faster 100mbps segment devoted to users who depend heavily on graphics, multimedia, database, or other speed-intensive applications. With switched segmentation, your 100mbps users will not be slowed down by the users on the 10mbps segment.

• Run 10Mbps Peripherals in Your Fast Ethernet Network

Most of the network peripherals in place today run at 10mbps, since 10BaseT has been the standard network speed to date. These peripherals, designed to operate at 10mbps, cannot readily communicate with 100BaseTX equipment. A 10mbps interface is also required for cable and DSL connections, which are quickly becoming very popular ways to access the Internet. Your 10/100 Switch provides your 10BaseT equipment and cable and DSL lines with a 10Mbps interface while still running your Fast Ethernet devices at 100mbps.

• Strengthen Data Transfers Through Signal Regeneration

Your Switch functions as a repeater, which regenerates data signals as they pass through it. This feature acts as a safeguard to deter data loss and ensure that transmissions arrive at their destination intact. Switches positioned between hubs can preserve your data's integrity and eliminate your need to buy and use repeaters in your Fast Ethernet network.

Connecting Nodes to the Switched PrintServer

The back of the Switch has two regular RJ-45 ports and one uplink port. Each port automatically detects the speed, type, and duplex of the cabling attached to it, and can operate in either half or full duplex, giving possible speeds of 200Mbps, 100Mbps, 20Mbps, or 10Mbps.

Your switched ports can be connected to computers, PCs, file servers, hubs, repeaters, bridges, or other switches. Each cable connected to the switch must be a Category 5 UTP network cable with RJ-45 tips, and should not exceed **100 meters** (328 feet) in length. Ready-to use network cables of various lengths can be purchased at most computer stores.

Connecting Computers

PCs should be connected to the switch with straight-through Category 5 network cabling. If connecting a computer directly to one of the switch's ports, connect one end of the cable into the switch, then plug the other end of the cable into the computer's 10Mbps or 100Mbps network adapter.

Connecting to Other Switches and Hubs

Switches, hubs, and similar devices are connected to the switched ports with regular Category 5 cabling via the special uplink port. This port automatically flips the Transmit (TX) and Receive (RX) signals on the wires inside of the cable. Connect one end of the cable to the switched port, then connect the other end to an uplink port on your hub or other device.

The uplink port is "**shared**," meaning that it shares its architecture with port number 4 on the switch. If you are using the uplink port, you will lose any connection on port 4. Be sure to disconnect any cabling in port 4 before using the uplink function. When connecting to other hubs and switches, you must use the uplink port. Linksys does not provide any technical support for connections made with crossover cables.

About Bidirectional 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.

Bidirectional communication, communication from a printer to a PC, is normally handled by a combination of the printer hardware and special software on your computer. Bidirectional 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 bidirectional printer on a network poses unique challenges. Unlike a direct PC-to-printer connection in which a bidirectional 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 EtherFast 10/100 PrintServers to function with both regular as well as bidirectional printers. Standard print servers cannot work with bidirectional printers, but the EtherFast PrintServer features a custom design to support both parallel as well as bidirectional parallel interfaces. However, the EtherFast PrintServer cannot pass messages from the printer back to the printing PC – this limitation is simply an industry standard, and not one of the PrintServer itself.

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 bidirectional printer to function. If your printer came with special bidirectional 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 bidirectional function either by (**1**)

removing any bidirectional printing software from your network computers, and/or (**2**) turning off the printer's bidirectional 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 Software

The PrintServer is fully compatible with Windows 98, Windows 95, Windows NT 4.0, and NetWare.

When used with Windows 98, 95 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 or NT CD-ROM. For tips on installing TCP/IP, see page 56.

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 on page 42 in the NetWare 5.x section of this user guide. TCP/IP instructions are provided on page 56.

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 user guide.

Note: *Throughout the user guide, it is assumed that the CD-ROM drive on your computer is designated as letter D. If your CD-ROM drive is designated as a different letter, use that letter instead.*

Specifications

Model Numbers	**EFSP42:** EtherFast 2-Port Switched PrintServer
	EPSX3: EtherFast 3-Port 10/100 PrintServer
	PPSX1: EtherFast 10/100 PrintServer
Standard	IEEE 802.3, IEEE 802.3u
Topology	Star
Protocol	CSMA/CD
Ports	One Power Port
	EFSP42: One 10/100 RJ-45 Uplink Port;
	Four Autosensing 10/100 Ports;
	Two bidirectional parallel ports
	EPSX3: Three bidirectional parallel ports
	PPSX1: 1 bidirectional parallel port
Buttons and Switches	Reset button (**EPSX3 & EFSP42**)
	Three dip switches (**EPSX3 & PPSX1**)
Max Speed (Mbps)	200 or 20 (Full Duplex)
	100 or 10 (Half Duplex)
Cabling Type	10BaseT Category 3 (10BaseT)
	100BaseTX Category 5 (100BaseTX)
LED Indicators (**EPSX3 & PPSX1**)	Status, Link,Error, Power
	EFSP42: Link/Activity per port, 100Mbps per port,
	Full/Coll per port, Power

Environmental Specifications

Dimensions	**EFSP42:** 7.5” x 5.4” x 2.0”
	EPSX3: 9” x 5.5” x 1”
	PPSX1: 7.5” x 5.4” x 1.4”
Unit Weight	**EFSP42:** 1 lb. 3 oz.
	EPSX3: 14 oz.
	PPSX1: 1 lb.
Certifications	FCC Class A, CE Mark Commercial,
Power	12VDC, 1Amp Maximum

Customer Support

For help with the installation or operation of your EtherFast 10/100 PrintServer, contact Linksys Customer Support at one of the phone numbers or Internet addresses below. For the latest version of this User Guide, visit the Linksys website to download an Adobe Acrobat PDF version.

Customer Support	800-326-7114
	949-261-1288
Fax	949-261-8868
Email	support@linksys.com
Website	http://www.linksys.com
FTP Site	ftp.linksys.com

Extended Technical Support

The 2-Port Switched PrintServer (EFSP42) supports the NetBEUI and Appletalk protocols, SNMP management, Internet Mail Printing, Unix support, HP JetDirect emulation, 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