NetComm®

NP5000

Wireless Print Server

11 Mbps WIRELESS MULTI-PORT PRINT SERVER

wireless

Ethernet, Parallel & USB ports

The easiest, most convenient way to share printers

User Guide

Contents

Section 1 - Introduction

The NetComm Mini Print Server has been designed to provide a simple and efficient network printing solution and allowing one printer to be shared between multiple computers. It is packed with features, including:

- **Versatility**. The Wireless Print Server supports up to four protocols: TCP/IP, SMB (Service Message Block), AppleTalk (EtherTalk), and NetBEUI. It features an Ethernet interface ports and operating system support includes Unix, NetWare (NDPS LPR printing), and Microsoft Windows.
- **Easy Installation**. The Wireless Print Server makes adding printers or plotters to your network simple. The auto-sensing feature on the LAN interface means that there is no need to set jumpers or perform software configuration to select the network interface used.
- **Easy Setup**. A number of utility programs are supplied to simplify setup. For Windows 95/98/Me/NT/2000/XP users, the BiAdmin program makes it easy to configure the Wireless Print Server for a variety of network and server configurations.
- **Web-based Interface**. The Web-based interface provides an easy method of configuration in TCP/IP networks to every model.
- **Compact Size**. This allows the Wireless Print Server to be used even where space is limited.
- **Remote Management Tools**. A variety of software tools are provided. In most environments, both the Wireless Print Server and attached bi-directional printers can be configured remotely.
- **SNMP Support**. The Wireless Print Server can act as a SNMP agent, with it own MIB. This allows TCP/IP users to monitor, configure and troubleshoot the Wireless Print Server using their existing SNMP management tools.
- **Internet Printing Protocol (IPP) Support**. Some Print Server models can act as an IPP (Internet Printing Protocol) Server, allowing clients, suppliers, colleagues and others to print to your printer from anywhere on the Internet. Windows IPP Client software is also supplied.
- **Wireless LAN Support.** Wireless stations supporting the IEEE 802.11b standard can interoperate with the Wireless Print Server. Both LAN and WLAN users can print to the attached printer.

Section 2 - Connecting your Wireless Print Server

This section describes how to install the Wireless Print Server in your Local Area Network.

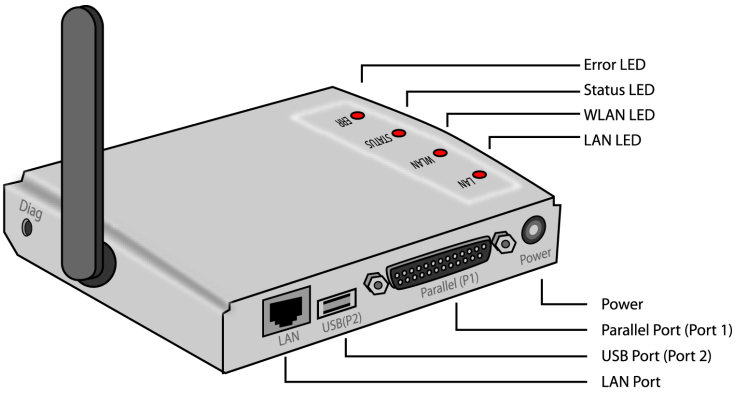
1. **Preparation**
   - Ensure the power is OFF. Do not connect the Wireless Print Server while power is On.
   - Find the Default Server Name for your Print Server. The Default Server Name is shown on a sticker on the base of the device. It consists of 8 letters and/or digits. Record this name; it may be needed during configuration.
2. **Connect the Printer**

   Connect the parallel printer and USB printer cables to the appropriate ports on the Wireless Print Server unit. Parallel port cables should be less than 3 meters long.
3. **Connect the Network Cable**
   - Connect the network cable to the proper connector on the Wireless Print Server. The Wireless Print Server will automatically recognize whichever connector is used.

Note: This will disable the Wireless interface, because the default "Infrastructure mode" wireless setting can NOT be used with the LAN interface. To use both the LAN and Wireless interfaces, the Wireless mode must be set to "Ad-hoc".After configuration, the LAN interface can be disconnected if not required.For LAN application, the LAN cable need to be inserted before power ON.

4. **Power Up**

   Plug in the power adapter cable and power up. Start-up will take only a few seconds.
5. **Check the LEDs**
   - The Red Error LED should flash, then turn Off. When the Red LED goes off and the Green LED remains lit or flashes, the Wireless Print Server is ready. The Red Error LED will remain flashing if the Wireless Print Server can't connect to the printer.



Diagnostic Push Button

The Wireless Print Server is fitted with a Diagnostic Push Button. The button is recessed; a pin or paper clip can be used to press it. This button has 2 functions:

- Restore the factory default settings
- Print a test page containing all current settings.

To restore the factory default settings:

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

To generate a Diagnostic print out

1. Ensure that both the Wireless Print Server and the printer attached to port 1 are ON.
2. Press the diagnostic button, and hold it in for 2 seconds.
3. The test page, containing the current settings, will be printed.

Note: PostScript printers are unable to print this page. If you have a PostScript printer on Port 1, the test page will not be printed.

LED Indicators

The Mini Print Server has four LED indicators; LAN, WLAN, Status, and Error. The LED indicator modes are described in the following table:

LED	Status	Description
All LEDs	Off	No power.
Status	Green	Power on.
Error	Red	Hardware error
WLAN	IdleFlashing	Transmitting or receiving data through the Wireless LAN.
LAN	IdleFlashing	Transmitting or receiving data through the LAN.

Signal Range

WLAN devices are designed to operate over a radius of 100 meters indoors and 300 metres outdoors. Obstructions such as walls, ceilings, floors, office equipment, and furniture can reduce this range. The following example or just some factors that affect the signal range of your Wireless network.

- **Obstructions.** The Wireless LAN radio signal can penetrate through ceilings and walls. However, each wall or ceiling the signal must pass through to reach other WLAN devices will reduce the effective range your Wireless LAN.

  You should also keep the depth of the obstructions to a minimum. Take an example of a wall that is half a metre thick. For a radio signal going through the wall, at a forty degree angle, it must pass through almost one metre of material. At a two degree angle, this increases to over 14 metres! Position adaptors and access points so that the signal will travel straight through a wall or ceiling for better reception.

  Position your adaptors and access points above desk height so as to minimise the number and depth of obstructions and always position your adaptors and access points so that the signal passes through drywalls or open doorways and not through metallic materials.

- **Antenna Position:** Where possible, keep your adaptors and access points at least 1 or 2 metres away from devices that generate strong radio-frequency or electromagnetic signals, such as microwaves, computer monitors, cellular telephones and electric motors. Use the utilities included with your product to measure the best reception (signal quality/strength) achieved when repositioning the antenna.

  Should the signal be inadequate in an area where you wish to use your wireless network, consider adding Access Points to increase the signal strength in that area.

How to Make Your Wireless Network More Secure

Wireless networks can be vulnerable to an outsider gaining access if the encryption settings are not set adequately. Some of the default security settings on some wireless hardware, and in Microsoft Windows, may allow access to your wireless network from other wireless devices.

The concepts that are presented here are offered only as a guide, and may help make your wireless network more difficult for an outsider to gain access. For more specific information about the implementation of these suggestions, you should consult a trusted security source.

- Enable Wired Equivalent Privacy (WEP) encryption

  The 802.11b standard, which your NetComm WLAN device is based on, permits Wired Equivalent Privacy (WEP) encryption. Depending on what other hardware you use your Wireless Print Server with, there are two levels of WEP typically available: 64-bit encryption (based on a 40-bit encryption key), and 128-bit encryption (based on a 104-bit key). We strongly recommend that you enable WEP.

- Change the default Service Set Identifier (SSID) and passwords for your network devices.

  Do not change the SSID or password to reflect your name, address, or anything that would be easy to guess as this could make it easy for an outsider to gain access to your wireless network.

- Install Access Points away from windows

  If you are installing access points, think about locating them towards the centre of your home instead of near the windows. Plan your coverage to radiate out to the windows, but not beyond. If the access points are located near the windows, a stronger signal will be radiated outside your home making it easier for those outside the building to locate your network.

- Check the range of your network

  Take a notebook, or a PDA computer, that is equipped with a wireless network PC Card and go outside your home to survey what range you get when moving around your property or neighbourhood. You may be surprised how far the signal radiates. If you can connect from three or four houses away, so can someone else.

- Use a combination of the previous suggestions.

Section 3 - Configuring your Wireless Print Server

This section provides an overview of the configuration process for Windows operating systems.

Overview

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

- The Wireless Print Server usually requires configuration, but if there is a DHCP server on your network, then the device is just plug-and-play. A Windows-based setup Wizard is provided on the CD-ROM to simplify this task. This configuration is not required if you are using a Macintosh computer.
- Computers wishing to use one of the printers attached to the Wireless Print Server will always require configuration. See Section 4- Configuring your Computer for details.
- If you wish to use a queue-based printing system using Windows NT Server/Windows 2000/ Windows XP, the Network Server must be configured as detailed in Appendix B - Network Server Configuration. However, it is not necessary to use a Network Server-based queue; client computers can print directly to the Wireless Print Server using the Peer-to-peer Printing when installed with the User setup option on the CD-ROM.

Configuration Methods

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

- Windows-based Wizard.
- BiAdmin management utility program.
- Web-based setup.

Advanced Configuration and Management

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

Web Based Configuration and Management

The Wireless Print Server can be accessed directly through a web browser for advanced configuration and management. See Section 6 for details on using Web Based Configuration.

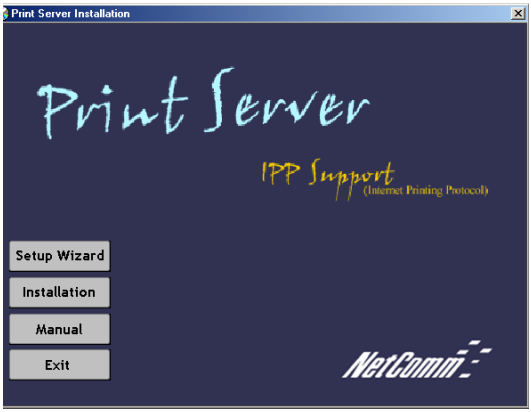
Using the Windows Wizard

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

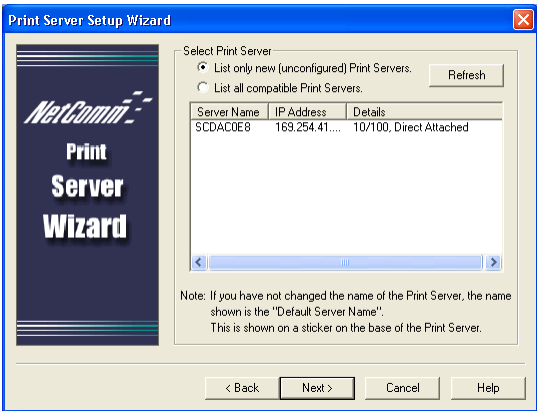
Using this Wizard is the recommended method to configure the Wireless Print Server. It can be used configure the Wireless Print Server for your Network environment, even if the Wireless Print Server does not have a valid IP address.

Procedure

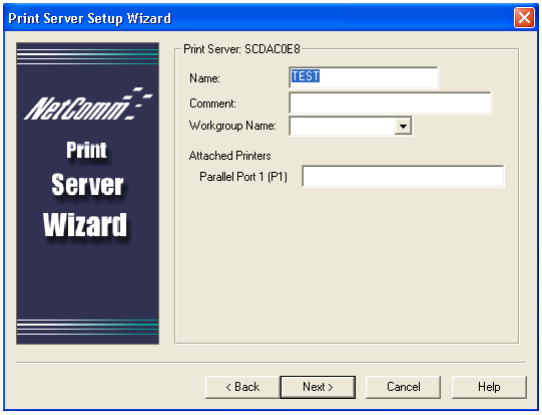
1. Insert the supplied CD-ROM into your drive. If the setup program does not start automatically, run **SETUP.exe** in the root folder.
2. On the first screen, shown below, click **Setup Wizard**.



3. Click **Next** on the first screen of the Wizard, to view a list of Print Servers on your LAN.
4. Select your new Wireless Print Server , then click **Next** to continue.

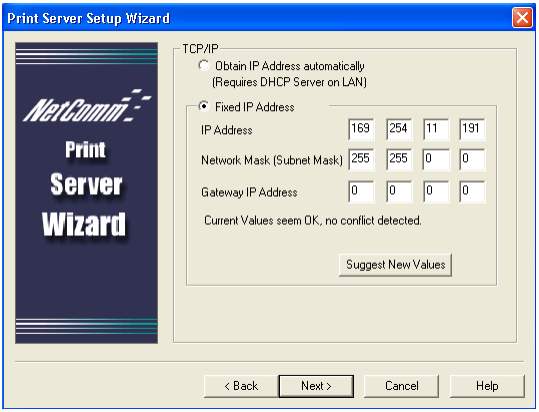


5. Enter the required data on the following screen.



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

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



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

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

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

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

If the desired Print Server is not listed:

- Check all cables to the Wireless Print Server .
- Check the Wireless Print Server's LEDs:
- The Red Error LED should be OFF and the Green Status LED should be ON.
- Check that your computer and the Wireless Print Server are on the same LAN segment. (If you don't have a Router or Gateway on your LAN, you only have 1 segment.)
- Check that your computer has either the TCP/IP or NetBEUI network protocols installed. See Checking your Network Protocols on page 11 for details.
- If all else fails, connect your Wireless Print Server by LAN or directly to a computer using a cross-over cable and change the settings to allow the Wireless Print Server to be accessed on your Network.

Wireless Configuration

The Wireless Print Server is a Wireless station, NOT an access point. Like all other Wireless stations, they have 3 modes:

- **802.11 Ad Hoc mode** - no Access Point is used, Wireless stations communicate directly with each other. This is the current standard.
- **Ad Hoc mode** - no Access Point is used, Wireless stations communicate directly with each other. This is the older standard, and requires that each Wireless station is set to use the same Channel. (In 802.11 Ad-hoc mode, a Wireless station will scan all channels to find compatible ad-hoc groups it can join.)

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

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

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

Required configuration

	Ad-hoc Mode & 802.11 Ad-hoc Mode	**Infrastructure Mode**
SSID	If 802.11 Ad Hoc mode is configured, the Wireless Print Server will join any group with the same SSID. If there's no Ad Hoc group available on the environment, the Wireless Print Server will create the group by the SSID number value it configured.	Must match the Access Point.
Channel	In Ad Hoc mode, the Wireless Print Server will join any group with the same Channel number.In 802.11 Ad Hoc mode, the Wireless Print Server will scan all Channels to look for compatible groups it can join. If there is no existing Hoc group available, the Wireless Print Server will create the group using its own Channel number.	Access Point sets the Channel used. Wireless stations automatically locate the correct channel.
WEP Settings	Must match the other Wireless stations.	Must match the Access Point.

Section 4 - Configuring your Computers

This Section details the client configuration required on LAN computers to use the printers attached to the Wireless Print Server.

Overview

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

Printing Methods

The Wireless Print Server supports a number of printing methods:

- **Peer-to-peer Printing** means that the print jobs are stored (queued) on your computer, and sent directly to the Wireless Print Server when it is available.
- **Windows SMB printing** is a Microsoft standard for using a "Network Printer". No additional software needs to be installed on your Windows computer, and printing from MS-DOS programs is supported. However, because the Wireless Print Server can not store files, large print jobs may cause problems.
- **Server-based Print Queue** means that all print jobs are stored (queued) on the Network Server (e.g. Windows NT/2000) and then sent to the Wireless Print Server . This allows the Network Administrator to modify the Print Queue. For example, an important job can be moved to the head of the queue.
- **AppleTalk** is also supported, and normally no configuration of the Wireless Print Server is required. See the Macintosh section of this section for details of client configuration.

Which printing method should I use?

- If using Windows 95, 98, NT, Me, 2000, or XP, the easiest method to use is Peer-to-peer Printing.
- If using Windows, and you need to print from MS-DOS programs, or you don't wish to install additional software, use SMB.

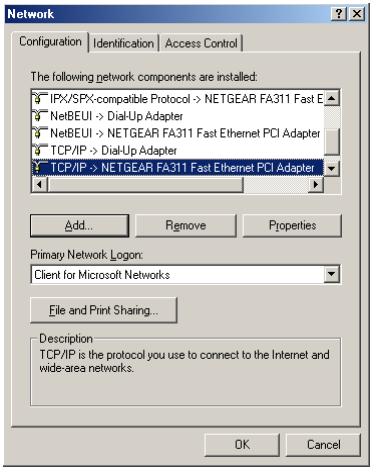
  SMB is not suitable for large, complex documents. If you need to print large documents, as well as MS-DOS printing, you should install BOTH Peer-to-peer Printing and SMB printing. MS-DOS programs can use the SMB printer, Windows programs should use Peer-to-peer Printing.
- If your LAN has Network Servers (e.g. Windows NT, Windows 2000 Server) use the method advised by your Network Administrator. The Wireless Print Server can print via a queue located on a Network server, if desired.
- Unix users - refer to the Unix Manual on the CD-ROM, in the Manual/Unix directory.
- Macintosh users - refer to the Macintosh section of the User Guide.

Checking your Network Protocols (Windows 9x)

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

- If using the Peer-to-peer Printing, the installation program will check this for you.
- If using other methods, you must check manually, as follows:

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



   - The highlighted line (TCP/IP -> PCI Fast Ethernet Adapter) indicates that TCP/IP is installed. Your computer will show the name of the your Network card rather than "PCI Fast Ethernet Adapter".
   - The line in the list (NetBEUI -> PCI Fast Ethernet Adapter) indicates that the NetBEUI protocol is also installed on this computer. Your computer will show the name of the your Network card rather than "PCI Fast Ethernet Adapter".
2. If neither line is present:
   - Install the NetBEUI protocol by selecting **Add -> Protocol -> Microsoft -> NetBEUI -> OK**. You may be prompted for your Windows CD-ROM.
   - If required, you can also install TCP/IP. However, depending on your LAN environment, TCP/IP may require further configuration.
3. If either protocol is already installed, proceed with installation.

Windows Peer-to-peer Printing

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

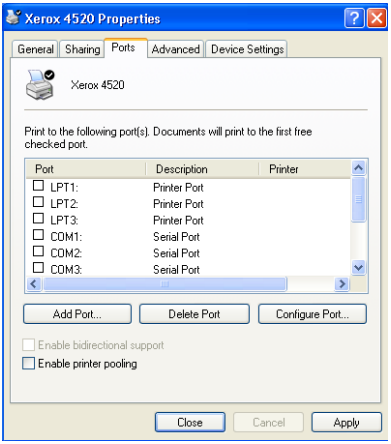
Note: Windows 2000 & XP require no additional software.

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

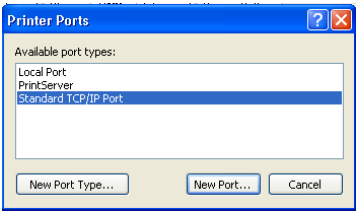
Windows 2000/XP Setup

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

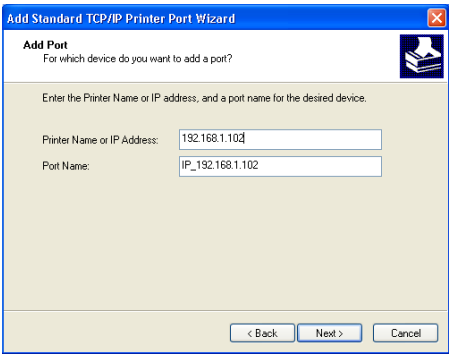
1. Open your Printers folder, right-click the desired printer and select Properties.
2. Select the Ports tab and click the Add Port button.



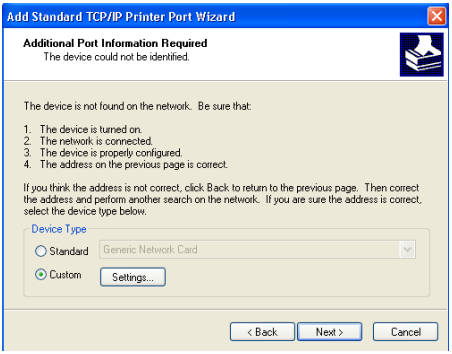
3. Choose Standard TCP/IP Port, then click New Port.



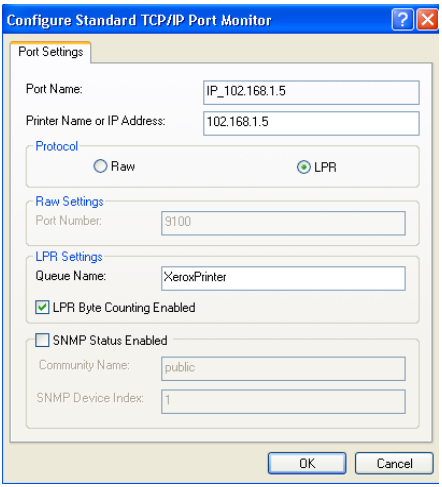
4. The Add Standard TCP/IP Printer Port Wizard will appear. Click next to continue and when prompted, enter the IP Address of the Wireless Print Server in the Printer Name or IP Address field, then click Next.



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



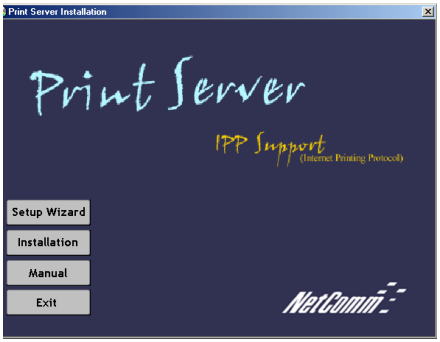
6. On the Port Settings screen:
   - Choose LPR in the Protocol section
   - Enter a Queue name
   - Ensure the LPR Byte Counting Enabled setting is Enabled.
   - Click OK to confirm your changes, then click Next to continue.
7. Follow the prompts to complete the Wizard.



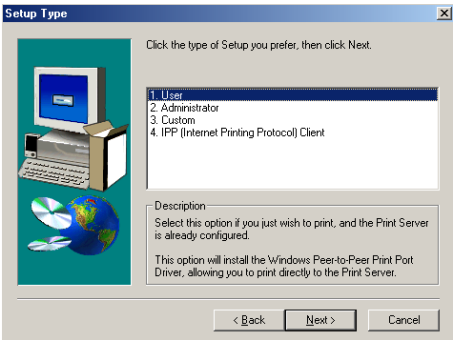
Windows 9x/ME Setup

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

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



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

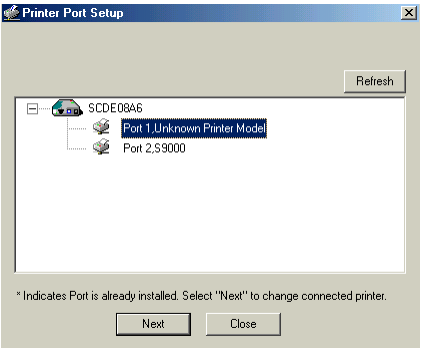


3. Follow the prompts to complete the installation of the Peer-to-peer Printer Port Driver. (Refer to the Windows section of Section 8 - Troubleshooting if there is a problem with the installation.)

4. The Print Driver Setup will then run.

   In future, you can use **Start -> Programs -> 802.11 Wireless LAN -> PrintServer Driver -> Printer Port Setup** to run the program again.

5. After prompting you to check that both the printer and print server are on and the cables connected correctly, the program will search for Printer Servers on the network, and a screen like the following will be displayed.

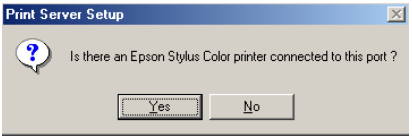


- If desired, click **Refresh**.
- The name of the attached printer will be displayed if possible. If "No printer" is displayed, check that the printer is properly connected and powered on.

If your Print Server is still not listed:

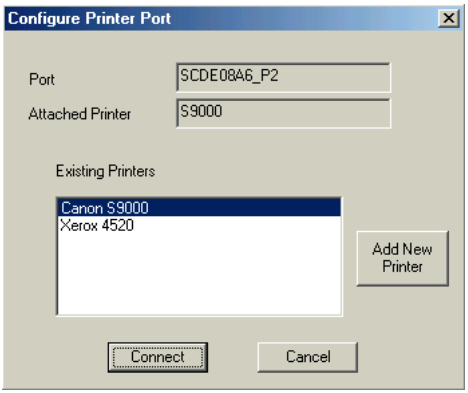
- Click the "Refresh" button.
- Check that both the Wireless Print Server and the printer are properly connected, and powered on.
- Check that the Wireless Print Server has been configured. (Use the Setup Wizard on the CD-ROM.)
- If using TCP/IP, try installing the NetBEUI protocol. (See the earlier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

6. Select the desired port on the Wireless Print Server , then click **Next**.



7. If using the Epson Spooler Manager, this program must be disabled, as follows:
   a. Run the Epson Spooler Manager.
   b. Select "Queue Setup" from the menu.
   c. Click "Use Print Manager for this port".
   d. Click "OK" to exit.

8. The printer port will be created, then a screen like the following will be displayed.



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

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

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

10. Installation is now complete. You can now print using this printer. To install additional printers, please repeat setps 5 to 9.

    - Use the Start menu to run this program in future. The default installation is **Start -> Programs -> 802.11 Wireless LAN -> PrintServer Driver -> Print Driver Setup**.

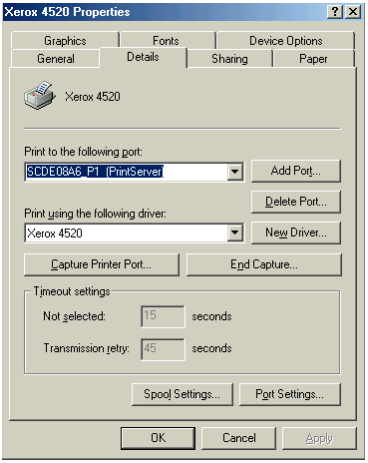
Management

- Print jobs can be managed like any Windows printer. Open the Printers folder (**Start -> Settings -> Printers**) and double-click any printer to see the current print jobs.
- If the printer attached to the Wireless Print Server is changed, just run this program again, and select the correct printer.
- To delete a port created by this setup program, use the Windows Delete Port facility:
  - Right-click any printer in the Printers folder, and select Properties.
  - Locate the Delete Port button. This button is on the Details or Ports tab, depending on your version or Windows.
  - If the Wireless Print Server's IP Address is changed, and you can no longer print, delete the port (see procedure above) and re-install it.

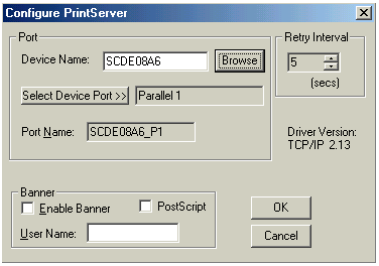
Advanced Port Options

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

1. Select **Start -> Settings -> Printers** to open the Printers folder, then right-click on one of the connected Printers, and select Properties. The Port Settings button is on the Details or Ports tab, depending on your version of Windows.
2. Click on the Port Settings button to display the following screen:



Items shown on this screen are as follows:

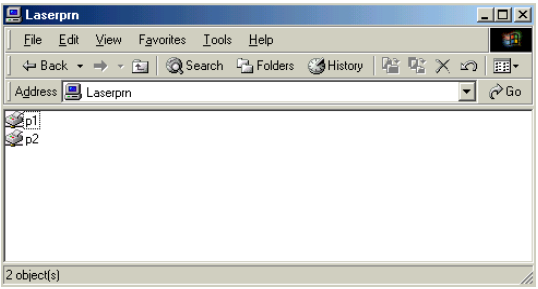


Port	If desired, click Browse to select a different Print Server. If the selected device has multiple ports, the Select Device Port button can be used to select the port.The Port Name can not be changed after installation. This name is shown in the Printer's Properties.
Banner	Check this option to print a banner page before each print job. ■ If using a PostScript Printer, check the PostScript box. ■ The User Name will be printed on the banner page.
Retry Interval	Sets how often Windows will poll the Wireless Print Server to establish a connection when the printer is busy. Increase this value if you get too many warning messages.

Windows SMB Printing

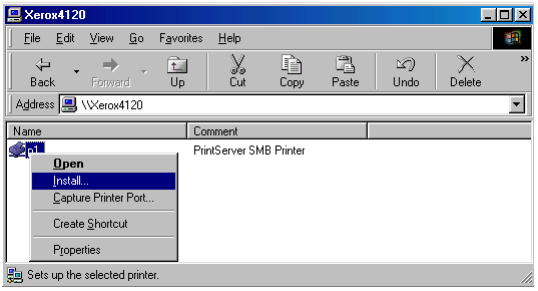
This method requires no additional software to be installed, but the NetBEUI or TCP/IP protocol must be installed on your computer. Use the following procedure to install the Wireless Print Server's printer as a Windows SMB network printer:

1. Double-click the Network Neighborhood icon on the desktop.
2. On the View menu, select Details.
3. Locate the desired Print Server , as shown below:



- If it is the same Workgroup as your computer, it will be listed on screen.
- If it is in a different workgroup, double-click Entire Network, then double-click the appropriate Workgroup to open it.

4. Double-click the Wireless Print Server icon to view a Printer icon for each printer port. The "Comment" field may indicate what type of printer is connected to the port.
5. To install a printer, right-click the desired printer icon, and choose "Install", as shown below. This will start the Add Printer wizard.



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

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

Printing from MS-DOS Programs

Windows can redirect print data from a parallel port on your computer (e.g. LPT1) to a network printer. This redirection is called "Capture Printer Port", and is useful for MS-DOS programs.

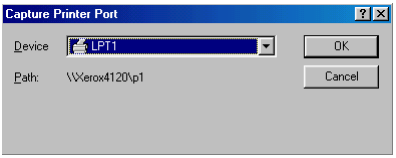
The MS-DOS program is configured to use LPT1 (parallel port 1 on the computer), but Windows "captures" the print data and sends it to the network printer.

Capture Settings

Capture settings can be set by:

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

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



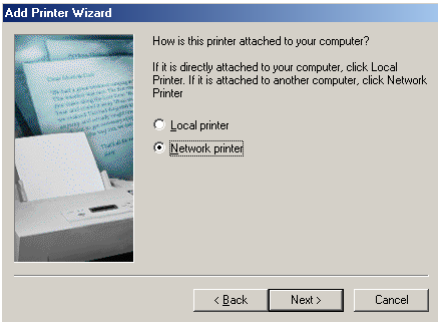
The File menu in the Printers folder also has options for Capture Printer Port and End Capture.

Windows with Server-based Print Queues

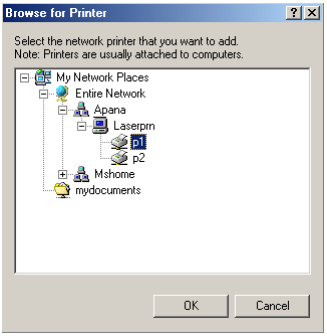
With a Server-based Print Queue, the Wireless Print Server is installed on an existing Network Server (Windows, Unix, or NetWare), and is invisible to your computer.

If your Network Administrator chooses to use this system, the required setup procedure on each Windows client is as follows:

1. Open your Printers folder, and start the Add Printer Wizard and click **Next** to continue.
2. When prompted, select Network Printer.



3. When prompted for Network Path or Queue Name, click the **Browse** button, and locate the Server and Printer (or Print Queue) which your Network Administrator advised you to use.



4. Click **OK**, then **Next**.
5. Select the correct printer Manufacturer and Model, as advised by your Network Administrator, and click **Next**.
6. Follow the prompts to complete the Wizard.

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

Windows LPR Printing

1. Open your Printers folder, right-click the desired printer and select **Properties**.
2. When prompted, choose the **Ports** tab and click the **Add Port** button.
3. Choose **Standard TCP/IP Port**, then click **New Port**.
4. Enter the Printer Name or IP Address, click **Next**.
5. Enable Custom, and click the **Setting** button.
6. Choose LPR in the Protocol section, then enter Queue name and enable the LPR Byte Counting.
7. Follow the prompts to complete the Wizard.

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

Macintosh (AppleTalk)

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

Normally, no configuration is required.

Software Requirement: System 9.x OS or newer.

AppleTalk Setup

1. Click the apple icon and choose Control Panel - AppleTalk.
2. Ensure that Ethernet is selected under AppleTalk Connection.
3. Click Chooser. The Chooser panel will open.
4. Click on either the LaserWriter 8 icon (recommended) or the LaserWriter 7 icon. LaserWriter 8 makes use of the fonts installed in the printer itself, so the printing response time is quicker. LaserWriter 7 uses the fonts installed in the computer, which increases network traffic and takes more printing time.
5. Choose a PostScript printer from the list.
6. Click Create and it will search PPD automatically.
7. Select a printer description from the list.
8. Click Select.

Configuration is now complete.

Printing

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

Advanced Setup and Management

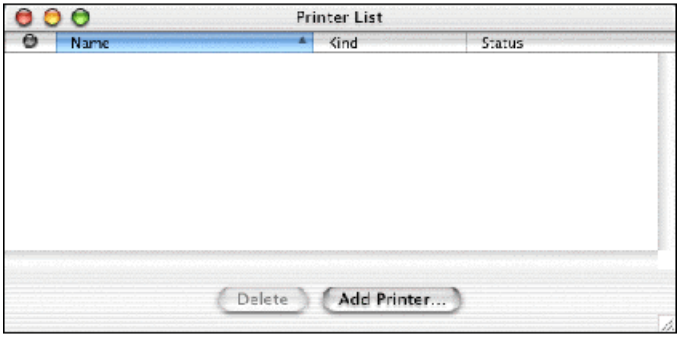
In a mixed Windows computer/Macintosh environment, you can use BiAdmin to configure the Wireless Print Server. See Section 5 for details on installing and using BiAdmin. Alternatively use the Web Based Management detailed in Section 6.

Macintosh OS X

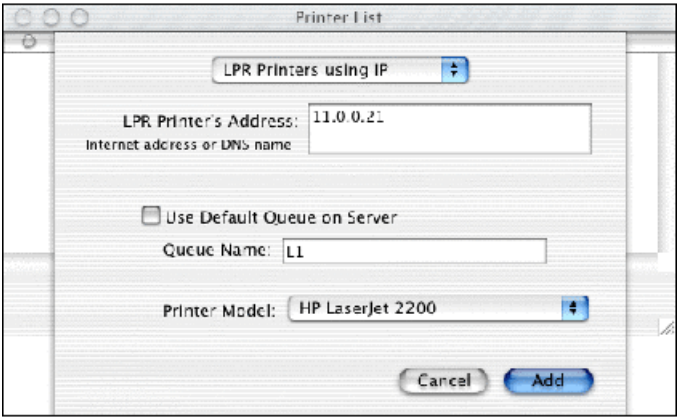
If using LPR printing, you need to ensure the Wireless Print Server has a valid IP address before configuring your Mac as follows.

LPR printing Setup

1. Select the Printer List icon.



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



4. Enter the IP address of the Wireless Print Server in the LPR Printer's Address field, and enter the Queue Name (e.g. L1, L2, L3).
5. Select the Printer Model from the drop-down list.
6. Click Add.

Configuration is now complete.

Section 5 - BiAdmin Management Utility

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

Requirements

This program requires:

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

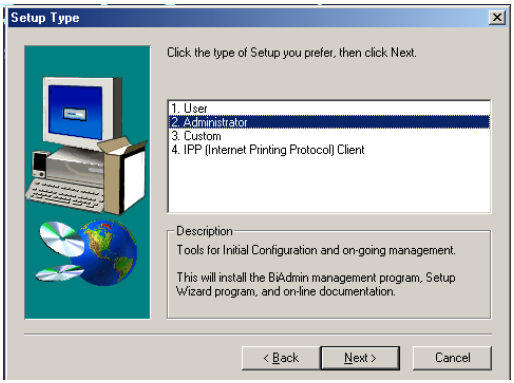
Additional Recommendations:

- Screen resolution of 800x600 or greater.

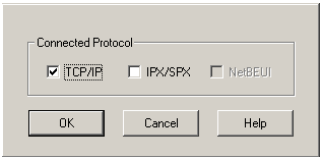
Installation

Use the supplied CD-ROM. This CD-ROM will usually auto-run. If auto-run is disabled on your computer, run the SETUP.exe program in the root folder.

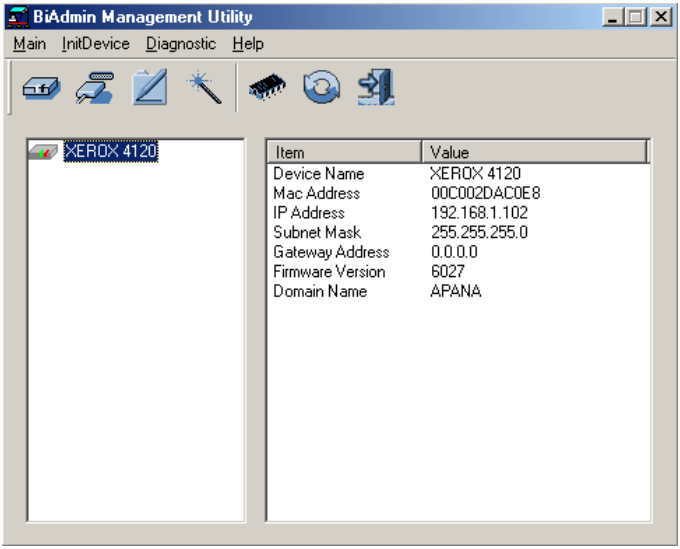
1 Click on the Installation button and select 2. Administration. BiAdmin is always installed if the Administrator option is chosen.



2 Start the program by using the icon created by the setup program. Select the connected protocol and click OK.



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



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

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

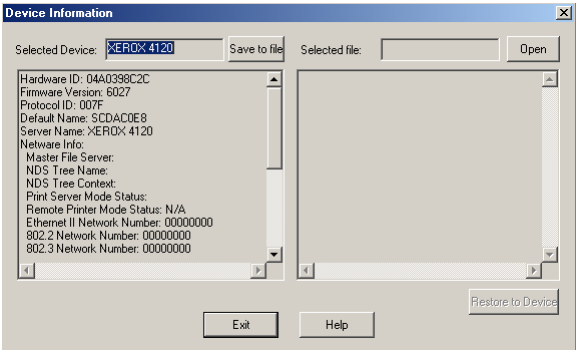
If the desired Print Server is not listed, try the following:

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

Icons

Device Status

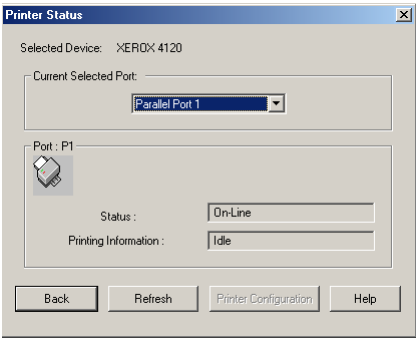
Menu equivalent: Main - Device Status



All of the settings for the current device are displayed in a read-only scrollable list in the left panel.You can use the "Save to File" and "Restore to Device" buttons on this screen to save a copy of the selected device's CONFIG file to your computer, or restore a previously saved file to the selected Print Server .

Printer Status

Menu equivalent: Main - Printer Status

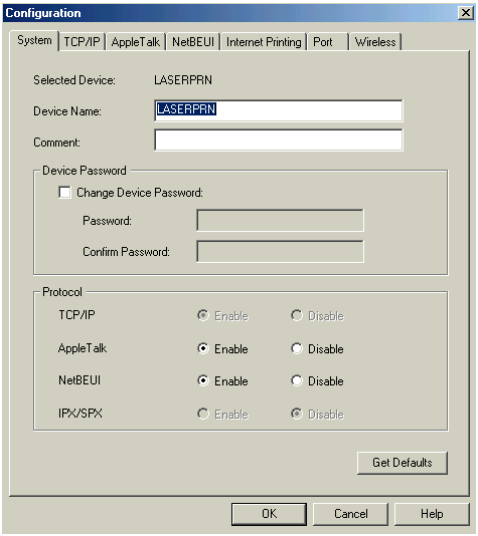


After selecting this icon, a Detail button will be available to show more information about the printer. Select the desired port from the drop-down list to display the current status of the printer attached to the port. Possible states are:

- Status - On-line, Off-line, or Out of Paper
- Printing Information - Idle, PrintingIf the printer is Bi-directional, and is not busy, the Configuration button will be available, allowing you to change the configuration of the attached printer. This button will be grayed out if the printer does not support this option, or if the printer is busy printing.

Configuration

Menu Equivalent: Main - Configure



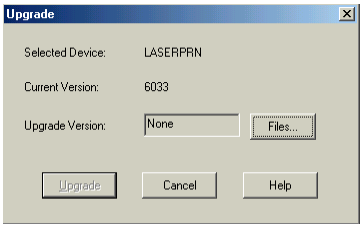
This option allows you to configure the selected Print Server. See the following section for details.

Wizard

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

Upgrade

Menu Equivalent: Main - Upgrade



This option allows you to upgrade the firmware for the selected Print Server . Before using this option, you need to obtain the .BIN file for the firmware upgrade, and copy it to the same directory as BiAdmin.

Refresh 

Menu Equivalent: Main - Refresh

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

Exit 

Menu Equivalent: Main - Exit

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

Menus

Main Menu

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

InitDevice Menu

Reset Device	This will cause the device to reboot. This should be done after making any configuration changes, or if the device stops responding after some problems.
Restore to Factory Default	This will restore ALL device values to their factory defaults. To restore only the current screen, use the Set to Default button on the screen.
Attached Remote	This is used to connect to a Print Server device on another LAN segment. You need to know the IP address of the remote Print Server .If your LAN does not have a Router, you can ignore this option.
Connected Protocol	This option allows you to designate which LAN protocol will be used for communication between the selected device and this application. You should select ONE protocol only.

Diagnostics menu

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

Configuration

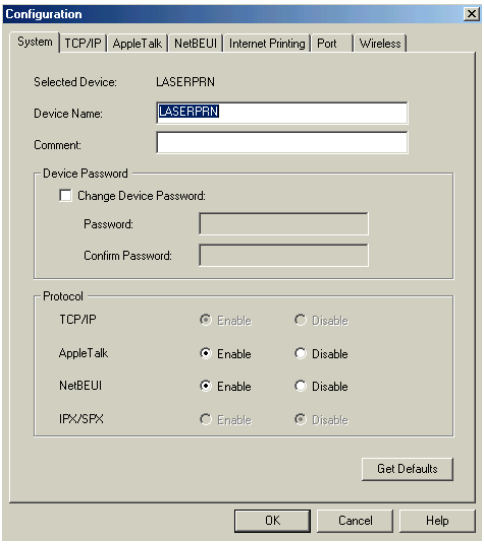
When the Configuration icon is clicked, or the Configure option on the Main menu is selected, a tabbed window will open. The tabs available will vary depending on the Wireless Print Server model selected. The possible tabs are:

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

System Tab

This screen allows you to:

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

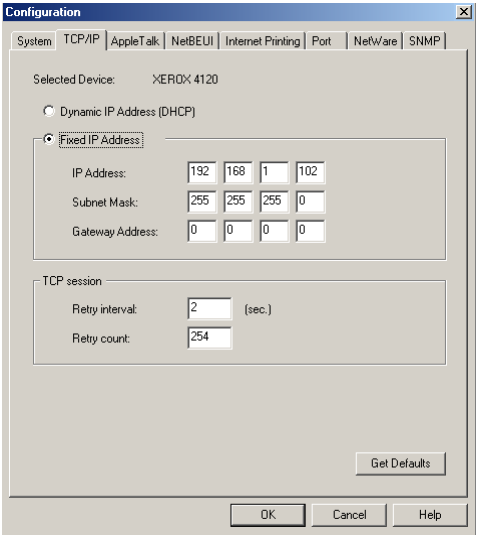


TCP/IP Tab

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

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

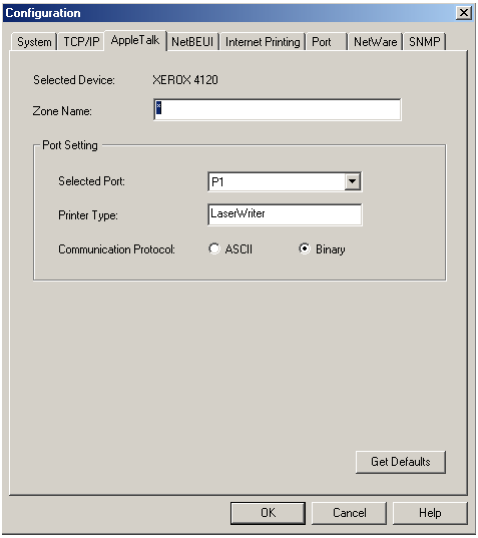
  Some Print Server models also support the Auto-IP function. If the Wireless Print Server is set to Dynamic IP Address, but there's no DHCP server found on the network, the Wireless Print Server will get an IP from the range of 169.254.1.1 ~ 169.254.254.254 automatically. In this case, even though the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



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

AppleTalk Tab

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



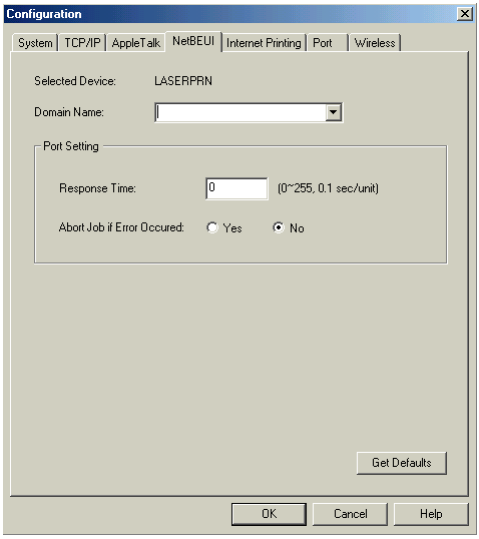
This screen allows you to:

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

NetBEUI Tab

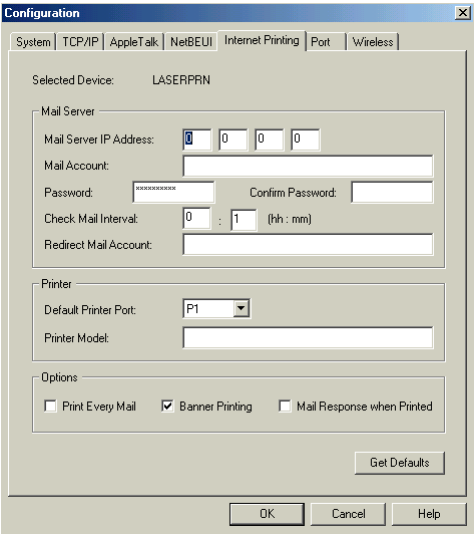
This screen allows you to:

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



Internet Printing Tab

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



Please refer to Section 7 - Special Features for Internet Mail Printing Configuration details.

Port Tab

This screen has two panels - Physical Port and Logical Port.

Physical Port

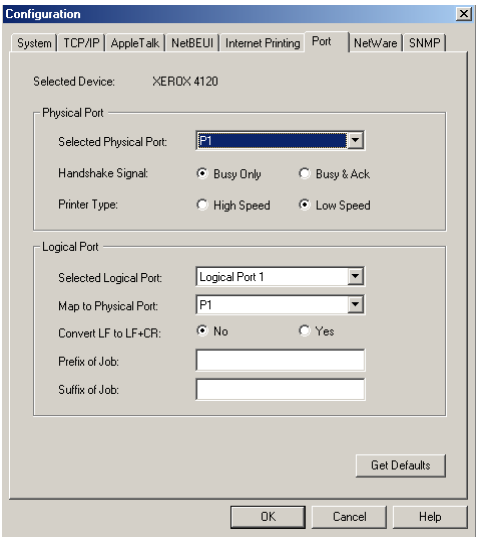
The following settings are available:

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

Logical Port

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

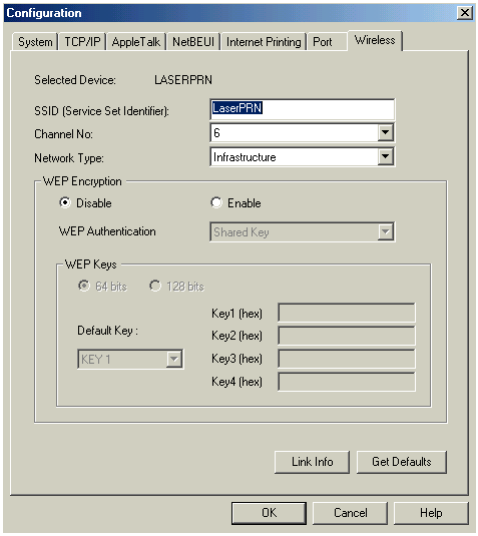
- Selected Logical Port - Select the Logical Printer Port you wish to configure. (The number of Logical Port depends on the number of physical port the device has. The Maximum available number is 8)
- Map to Physical Port - Select the physical Printer Port which the Logical printer will use.
- Convert LF to LF+CR - If checked, LF (line feed) characters are changed to CR+LF (carriage return + line feed).
- Prefix of Job - The printer control string (in hex) to be sent to the printer before each print job. This string cannot exceed 15 characters.
- Suffix of Job - The printer control string (in hex) to be sent to the printer after each print job. This string cannot exceed 15 characters.



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

Wireless

This tab allows you to configure the Wireless Settings for your Wireless Print Server. Change the settings to suit your environment. Generally, you must match the settings of other Wireless stations. The available settings are described below.



Selected Device — This shows the name of the Print Server.

SSID

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

Channel No

The effect of this setting depends on the Network Type setting:

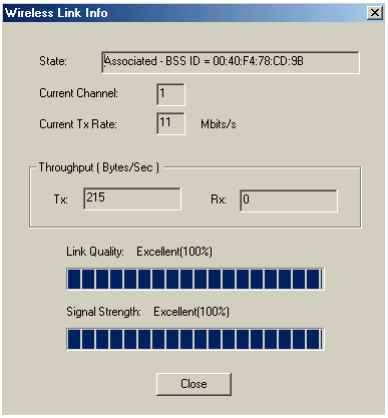
- In Infrastructure mode, this setting has no effect. The Channel is selected automatically, to match the Channel used by the Access Point
- In Ad hoc mode, all Wireless stations MUST use the same Channel number.
- In 802.11 Ad-hoc mode, Wireless stations will scan all Channels looking for compatible groups to join. The

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

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

Wireless Link Info Screen

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



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

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

Section 6 - Web-Based Management

This section explains how to use your Web Browser to configure the Wireless Print Server models

Overview

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

Preparation

Because it supports dynamic IP Address allocation using DHCP, BOOTP, or RARP, the Wireless Print Server ships with an IP Address of 0.0.0.0. This is NOT a valid IP Address.

Therefore, you must do ONE of the following:

- Check your DHCP server (if you have one), and determine the IP Address allocated to the Wireless Print Server .
- Use the Diagnostic Button (if fitted) to print a report which includes the current IP address. (Press the Diagnostic Button, and hold it for 2 seconds.)
- Use the Setup Wizard, BiAdmin or another Print Server utility to allocate a valid IP Address to the Wireless Print Server .
- Add an entry to the arp table to associate the hardware address of the Wireless Print Server with the desired IP address, as follows:

```
arp -s IP_Address 00:c0:02:xx:xx:xx   (Unix)

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

Where:
IP_Address is the IP Address you wish to assign to the Wireless Print Server .
00:c0:02:xx:xx:xx is the hardware address of the Wireless Print Server .
Example (Unix):

```
arp -s  192.168.1.5  00:c0:02:12:34:56
```

Example (Windows):

```
arp -s  192.168.1.5  00-c0-02-12-34-56
```

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

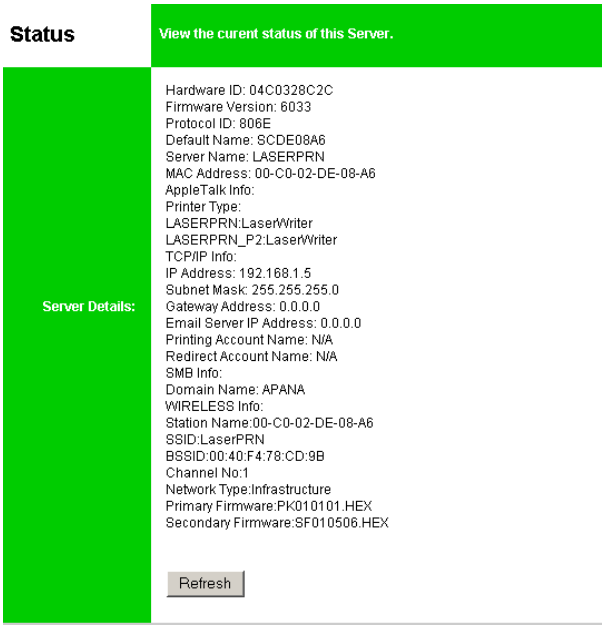
Connecting to the Wireless Print Server

1. Start your Web Browser.
2. In the Address box, enter HTTP:// followed by the IP Address of the Wireless Print Server. e.g.http://192.1681.5
3. You will then be prompted for the password. If no password has been set, the Status screen will appear.
4. Use the menu bar to navigate the different configuration screens. Remember to save each screen before changing to a different screen.

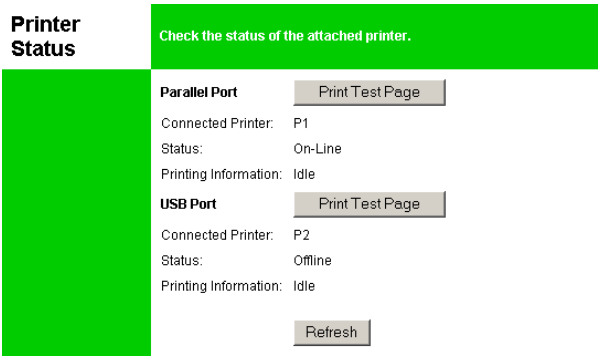
Configuration Screens

Server Status

This screen shows server system data and the current settings for all of the other screens. It is read-only; no data can be input on this screen.



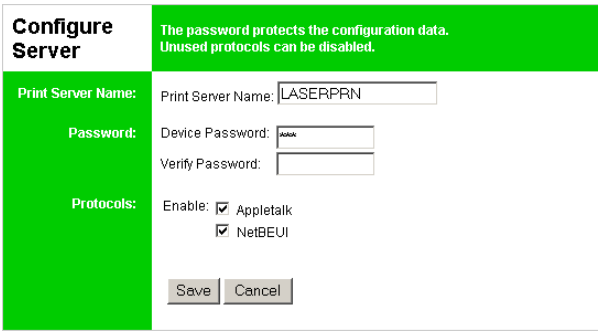
Printer Status



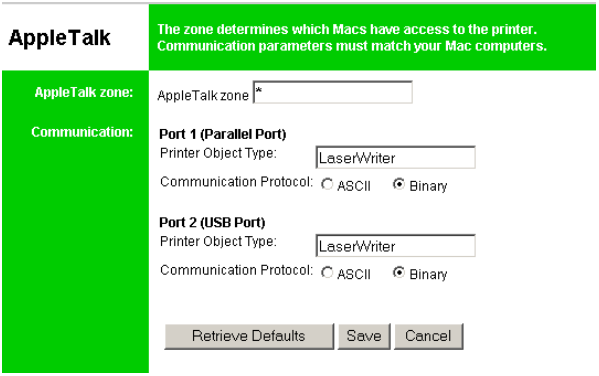
This screen displays the current status of each port. For each port, the following data is listed:

Connected Printer	The model name of the printer connected to the port, if the printer name is known. (If the printer is not bi-directional, this information is unavailable.)
Status	The current status of the printer (On-line, Off-line, Out of paper)
Printing Information	This will show either Idle or Printing.

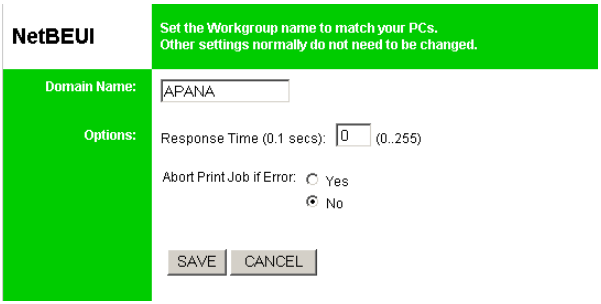
Configure Server



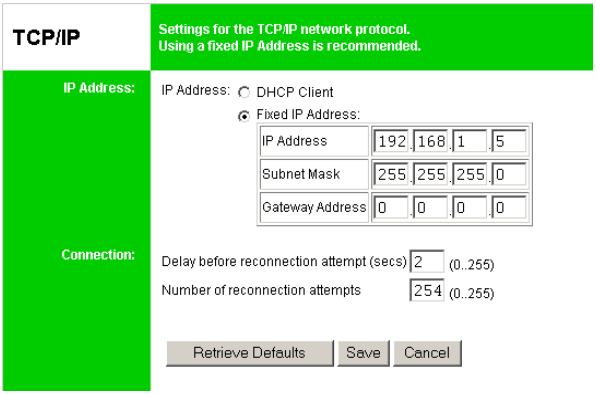
Print Server Name	Change the default name if you wish. The new name must not contain any spaces or blanks.
Password	Enter the device password, and again in the Verify field. Once a password is entered, it is required in order to gain access and change the configuration.
Enable Protocols	Non-TCP/IP may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



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



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



IP Address — IP Address assigned to this device. If using dynamic IP Addresses (DHCP, BOOTP, rarp), this should be left at 0.0.0.0.

Subnet Mask — (Network Mask) If the Router (Gateway) Address is 0.0.0.0, the Subnet Mask should also be left at 0.0.0.0. If you have a router, enter the Subnet mask for the segment to which the Wireless Print Server is attached.

Gateway Address — If your network segment has a router or gateways, enter its IP Address here. Otherwise, leave the address as 0.0.0.0.

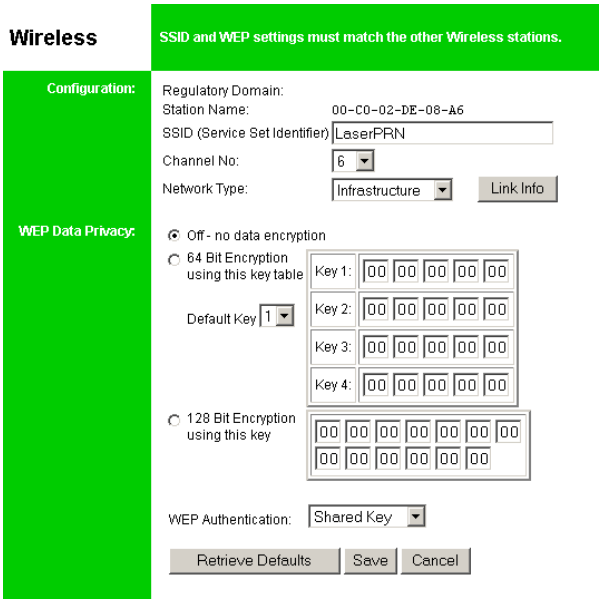
Connection

Delay before reconnection attempts

Sets how long the Wireless Print Server should wait before retrying a TCP/IP connection which is lost. Allowable values are from 0 to 255 seconds, with 2 as the default.

Number of reconnection attempts

Sets how many attempts at reconnection will be made. After that, the TCP/IP session will be terminated.Allowable values are from 0 to 255, with 254 as the default.



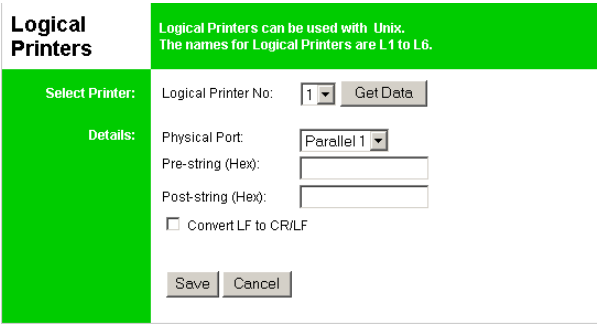
Configuration

RegulatoryDomain	It is illegal to use this device in any location outside of the regulatory domain.
Station name	This is the same as the Device (Host) Name on the WAN screen. On your PC, some Wireless status screens may display this name as the Access Point in use.
SSID(ESSID)	To communicate, all Wireless stations MUST use the same SSID/ESSID.The default value is null.Note! The SSID is case sensitive.
Channel No.	Select the value you wish to use on your Wireless LAN. If you experience lost connections and/or slow data transfers you may need to experiment with different channels to see which is the best.
Network Type	Select the correct value for your Wireless LAN. ■ 802.11 Ad-hoc mode is used when there is no Wireless Access Point, and each Wireless station communicates directly with other Wireless stations. This is the current standard. ■ Ad-hoc mode is used when there is no Wireless Access Point, and each Wireless station communicates directly with other Wireless stations. This is the older standard.

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

Logical Printers

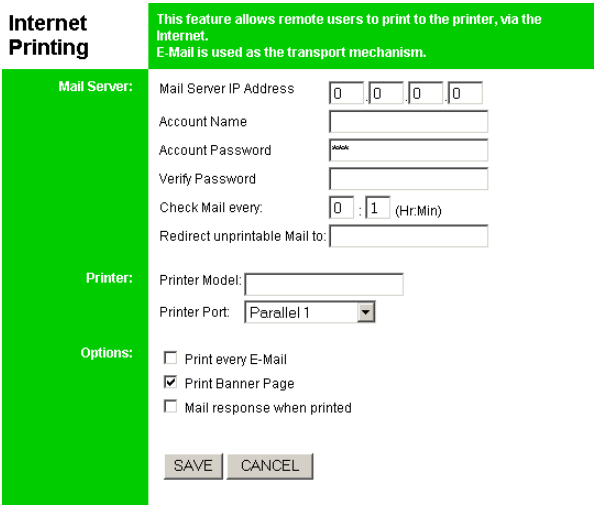
Logical Printers (ports) can be used under Unix. For each Logical Printer, the following fields are available:



Logical Printer(Port)	Select the Logical Printer Port you wish to configure. (L1 to L3 or L1 to L8, depending on your model)Click the Get Data button to update the display with the current data for the selected logical printer.
Port	Select the Printer Port which the Logical printer will use.
Pre-string	The printer control string (in hex) to be sent to the printer before each print job. This string cannot exceed 15 characters.
Post String	The printer control string (in hex) to be sent to the printer after each print job. This string cannot exceed 15 characters.
Convert LF to CR+LF	If checked, LF (line feed) characters are changed to CR+LF (carriage return + line feed).

Internet Printing

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



Section 7 - Special Features

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

Overview

The Wireless Print Server supports the following three (3) special features:

- IPP (Internet Printing Protocol).
- Proprietary Internet Mail Printing system.
- SNMP (Simple Network Management Protocol).

Internet Printing Protocol (IPP)

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

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

IPP Server Configuration

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

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

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

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

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

Installing from the CD-ROM

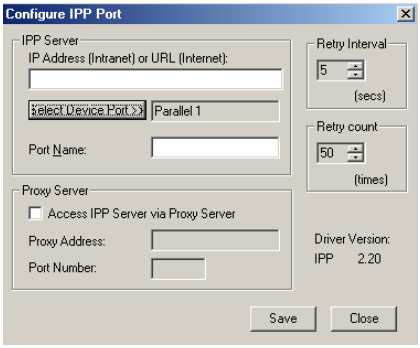
1. Insert the CD-ROM in your drive. If the program does not start automatically, run the SETUP program in the top-level folder.
2. Follow the prompts until you reach the Select Installation screen, and select **IPP Client**.
3. At the next screen, select the **Install IPP Client** option.
4. Click Next,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

Installing using IPP_CLIENT.EXE

1. Run this program to unzip the included files.
2. The IPP Setup program will then run.
3. Follow the prompts to complete the installation.

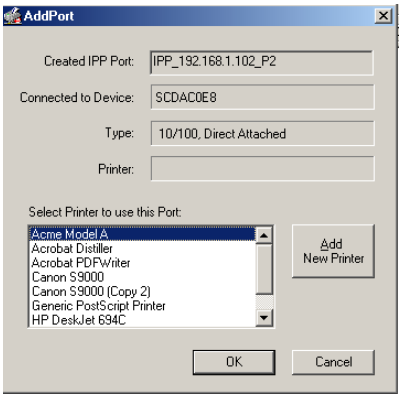
IPP Client Configuration (Windows 95/98/ME/2000/XP/NT 4.0)

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



2. If Internet access from your location is via a Proxy Server, check Access IPP Server via Proxy Server, and enter details of your Proxy Server. (This will be the same as your Browser configuration.)
3. Enter the IP Address or URL of the IPP Server.
4. Click Select Device Port to view the available ports on the IPP Server, and select the appropriate port. A connection to the IPP Server will be established at this time.

5. Click Save to create the IPP port on your system. You will see a message confirming that the port has been created, then the following dialog:



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

   OR

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

Installation is now complete.

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

Changing the IPP Port Settings

After the IPP port is created, you can reach the IPP Port screen using the Windows Port Settings button:

1. Open the Printers folder (Start - Settings - Printers)
2. Right-click the IPP Printer, and select Properties.
3. Locate and click the Port Settings button (Details or Port tab, depending on your version of Windows).

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

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

IPP Client Setup - Windows 2000/XP

Windows 2000 has its own IPP Client, and there is no need to install the supplied IPP Client Software. To use Windows 2000's IPP Client with the Wireless Print Server , follow this procedure:

1. Start the Add Printer wizard.
2. Select Network Printer, and click "Next" to see the Locate your Printer screen, as shown below.
3. Select Connect to a printer on the Internet or on your Intranet, and enter the URL of the IPP Server as follows, where ip_address represents the IP Address of the IPP Server, and 631 is the port number.

Port 1	ip_address:631/ipp/P1
Port 2 (if exists)	ip_address:631/ipp/P2
Port 3 (if exists)	ip_address:631/ipp/P3

   These entries are case sensitive. They must be entered as shown, with "ipp" in lower case, and P1, P2 and P3 in UPPER case.
4. If the connection can be established, and the printer on that port is on-line, the following dialog will be displayed.
5. Click "OK", and then select the printer manufacturer and model to match the printer connected to the port on the IPP Server.
6. Click "Next", and complete the Wizard.

The IPP printer is now ready for use.

Using IPP Printers

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

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

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

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

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

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

Internet Mail Printing

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

System Requirements

Mail Server

- Accessibility. The Mail Server must be accessible by the intended clients or users. Normally, this means a permanent connection to the Internet.
- Protocols. The Mail Server must support the POP3 and SMTP protocols. The Internet Printing System uses these protocols and the most common E-Mail formatting standards:
  - MIME (Multipurpose Internet Mail Extensions)
  - Base64 Encoding (for mail attachments)

Internet Print Server

- TCIP/IP Protocol. The LAN must use the TCP/IP protocol.
- Mail Server Access. The Wireless Print Server must be able to access the Mail Server using a single IP address.
- Mail Account. The Wireless Print Server must have a Mail Account. Users print by sending an E-Mail to this mail account.

User (Client) Requirements

- Internet Connection. Either through a LAN, or dial-up.
- E-Mail address. This is used to notify the user that their print job has been done, or if there any problems.
- Printer Driver. Users must have a printer driver which matches the printer connected to the remote Internet Print Server .
- Print Capture Software. To print more than plain text, users require InterNet Printing Port software to capture the print job and convert it into an E-Mail attachment.

The Internet Printing Port software is available for the following operating systems:

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

Internet Mail Printing Configuration

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

The supplied BiAdmin utility program, or the Web interface can be used to set the following entries on the TCP/IP screen.

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

You will need to reset your Wireless Print Server for the changes to take effect. Either power off and then power on the Wireless Print Server device or, in the BiAdmin utility program, select **InitDevice -> Reset Device** to reset your Mini Print Server.

User Software

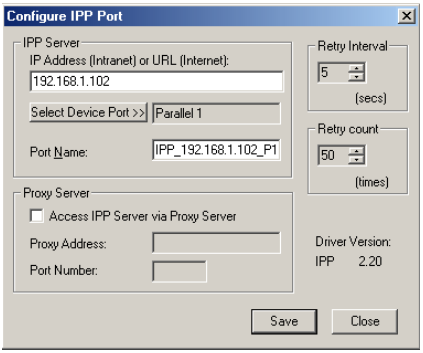
The software provided for remote users (InterNet Printing Port) should be installed by everyone intending to use Internet printing. Otherwise, remote users can print correctly only if:

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

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

Installation - User Software

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



4. The following data must be provided.

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

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

Using the new Port

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

1. Select the Printer which matches the remote printer, then choose Properties.
2. Select the new port as the port for this printer.
   - If you do not have the correct printer driver, or you wish to create another printer using an existing driver, use the Windows Add Printer facility.
   - Using the Windows Port Settings or Configure Port facility will reveal the same Configure Port screen shown on the previous page.
   - If you wish to print to multiple Internet Printers, use the Windows Add Port facility to add a new InterNet Printer port. Ensure that the correct data is entered in each port, and that each port has a unique name.

Checking the Printer Driver

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

1. Connect your default printer to the InterNet Printing Port.
2. Check that "Reply Notification Mail" in the InterNet Printing Port is ON.
3. From Notepad or another text editor, print a short message (e.g. "This is a test print") to the Internet Printer.

You will receive a reply E-Mail containing the "Printer ID" which will identify the printer attached to the Wireless Print Server . If this does not match the printer driver you are using, install the correct printer driver.

Printing through the Internet

1. Create or open the document you wish to print.
2. Select the Printer connected to the InterNet Printing Port.
3. If you do not have a permanent Internet connection, establish a connection now. (Note: The InterNet Printing Port will NOT establish a dial-up connection, but it will send the E-Mail the next time you are connected.)
4. Print the document.
5. The InterNet Printing Port will generate an E-Mail and send it to the remote printer. The document will be encoded and sent as an attachment to the E-Mail. You will see a progress screen to advise its progress.
6. Close the Internet connection if you opened it in Step 3.
7. If the "Notify after print job" option is set, you will receive an E-Mail when your job is printed.

SNMP

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

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

Mib1p.mib	Single port models.
Mib2p.mib	Models with 2 ports

Configuring the Wireless Print Server for SNMP

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

SNMP Settings

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

Management Station Settings

For each Management Station, the following fields are available:

Access Permission	Options are:Read OnlyRead/WriteNot Accessible
Community String	Leaving this blank will disable management by this station.

Trap Receiving Station Settings

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

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

Section 8 - Troubleshooting

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

Overview

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

If, after following the advice in these documents, the Wireless Print Server still does not function properly, please do not hesitate to contact NetComm's Customer Support Department.

Email: support@netcomm.com.au

Fax: (02) 9424-2010

Web: www.netcomm.com.au

Hardware & LAN Problems

Problem No. 1	All the Wireless Print Server's LEDs are off.
Solution No. 1	Check the power supply or power connection.
Problem No. 2	The Wireless Print Server unit can not be found on the LAN, so configuration is not possible.
Solution No. 2	If using 10/100BaseT: ■ Check the Hub. The link LED for the port to which the Wireless Print Server is connected should be ON. If it is Off, there is a problem in the network cable. ■ On the Wireless Print Server , check the LED(s) next to the connector. If the LED is not ON (or neither LED is On, if there are 2), the network connection is not working.Check the Ethernet cable and connectors. If they seem OK, set the DIP Switches of the Wireless Print Server to match your LAN environment. If using TCP/IP: ■ Ensure that there are no routers between the Wireless Print Server and the computer used for configuration. ■ Ensure that the computer used for configuration has the TCP/IP network protocol installed. Test its network connection by seeing if you can locate other LAN devices from the computer. (e.g. Use Network Neighborhood and try to browser the network.)
Problem No. 3	I am using DHCP, and getting an IP Address conflict involving the Wireless Print Server .
Solution No. 3	If the Wireless Print Server is left on, but the DHCP server is turned off, then the Wireless Print Server will retain its IP Address without the DHCP Server being aware of it. Simply reset the Wireless Print Server so it will obtain a new IP Address.This problem would also arise if you assigned static IP Address, which is within the range used by the DHCP server. If so, use another address which is NOT within the range used by the DHCP server.

AppleTalk (Macintosh)

Problem No. 1	Why do I get an incorrect printout?
Solution No. 1	Some possible reasons are: ■ You may have chosen Binary encoding to print the file. Try to use ASCII encoding. ■ Some of the fonts, which are in your print file may not be supported by the printer. Try selecting LaserWriter 7 instead of LaserWriter 8.
Problem No. 2	Can't find the Wireless Print Server's name in the Chooser.
Solution No. 2	Try the following: 1. Make sure that AppleTalk is on (the button next to Active is highlighted in the Chooser). 2. Make sure the printer has been on and in the READY state for a few minutes. 3. Make sure the printer has not been renamed since its last appearance in the Chooser. 4. If the printer resides on a network with multiple zones, make sure the correct zone is selected from the AppleTalk Zones box in the Chooser.
Problem No. 3	My document didn't print to the right printer.
Solution No. 3	Check the following: ■ Another Print Server with the same name may have received your print job. Use the PSTOOL to reconfigure your Print Server name and ensure all Print Server s have unique names. ■ Make sure your application output encode is set to ASCII. If not, change it to ASCII.
Problem No. 4	My file doesn't print with the correct fonts.
Solution No. 4	Try changing your printer driver to LaserWriter 7.
Problem No. 5	My EPS file doesn't print with the correct fonts.
Solution No. 5	This is a problem that occurs in some application programs. Try downloading the fonts contained in the EPS file before printing the saved EPS file.
Problem No. 6	I can't select the "Remaining from:" item in the print dialog box.
Solution No. 6	If you have selected the Layout value, "2 Up", or "4 Up", you cannot access the Remaining from item. Choose other selections.

Problem No. 7	A cover page prints either on the first or the last page of the document.
Solution No. 7	Select one of these solutions: ■ Turn the cover page feature off. ■ Insert extra page breaks in your document to avoid the cover page printing on the first or last page of your document. ■ Install the Apple LaserWriter 7 driver. You are having trouble printing with the Apple LaserWriter 8 driver.
Problem No. 8	Why do I have trouble printing with the LaserWriter 8?
Solution No. 8	Your application software may not be compatible with the LaserWriter 8 driver or your system may not meet the requirements of the LaserWriter 8 driver. Use the Apple LaserWriter 7 driver instead.
Problem No. 9	The colors on my printed output do not match the colors on my computer screen.
Solution No. 9	When the printer receives a color file, it tries to match the printed output color to the screen color. Sometimes the printer cannot match up the colors as closely as wanted. To alleviate this problem, perform the following steps: ■ Choose "Calibrated Color/Grayscale" in the Print pop-up menu in the Print Options dialog box. The printer will make adjustments to match the colors. ■ Check your monitor to make sure all settings (for example, brightness) are adjusted correctly.
Problem No. 10	When I send a print job, I get a PostScript Command error or no print out.
Solution No. 10	Check the communication protocols. The computer, Print Server and printer must all be configured to the same communication protocol.(either Binary or ASCII).To configure your system: 1. Choose which protocol you are going to use. You should check your printer; it may not give you a choice. 2. Set your printer to the correct protocol. 3. Use the computer's Print submenu to configure your computer to use the protocol you have chosen. 4. Configure the Wireless Print Server to use the same protocol as the printer and computer.

Windows Printing Problems

Problem No. 1

When I tried to install the Printing software for Peer-to-Peer printing, I received an error message and the installation was aborted.

Solution No. 1

This may be caused by an existing installation of the printer port software. Before attempting another installation:

- Remove the existing installation
- Restart your computerTo remove an existing printer port installation:

1. Open Start - Settings - Control Panel - Add/Remove Programs
2. Look for an entry with a name like "Shared Port", "Shared Printer Port", " Print Server Driver" or " Print Server Port".
3. Select this item, click "Add/Remove", and confirm the deletion.

Problem No. 2

On Windows 95, I installed the Print Port Driver for Peer-to-Peer Printing, but when I selected a port on a Print Server and clicked "Add", the printer was not installed.

Solution No. 2

Try installing the Printer using the standard Windows tools, as follows:

1. Start the Add Printer Wizard.
2. Select Network Printer when prompted "How is the printer attached to your Computer?", and click Next.
3. When prompted for the Network Path or Queue, enter a dummy value such as shown below. (Do NOT select Yes for "Do you print for MS-DOS programs?")
4. The printer wizard will display a message stating that "The Network Printer is off-line". This is OK. Continue the Add Printer Wizard until finished.
5. Go to the Printers folder (Control Panel-Printers). The printer icon will be grayed out indicating the printer is not ready.
6. Right-click the Printer, and select Properties. Then select the Details tab, as shown below.
7. Click the Add Port button. On the resulting screen, select Other, then Printer Server, as the port to add, as shown below.

8. Click OK to see the Print Port Configuration screen, as shown below.
9. Click the Browse Device button, select the desired Print Server , and click OK.
10. Click OK to return to the Printers folders, and right-click on the Printer. Ensure that the Work off-line option is NOT checked. The Printer should no longer be grayed out, and is ready for use.

Problem No. 3	I connected and configured a WPS (Windows Printing System) printer as described, but I can't get the print job to print.
Solution No. 3	Printer drivers for WPS printers poll the printer before sending print data. Since the printer is networked, the printer is not found and no data is sent. The solution is to add your printer as a network printer as described in Solution 2 above.Note: The screens shown in Solution 2 are from Windows 95. Other versions of Windows may look slightly different, but the process is identical. If using Window NT or 2000, do NOT enable Sharing for the printer.
Problem No. 4	When printing from some software applications such as Power Point, it takes a long time and the print out is incorrect.
Solution No. 4	The problem is due to the printer, which is being configured to Start printing after the first page is spooled. To change this setting:· Go to Control Panel - Printers and click on your printer.· Then select File - Properties - Details. ■ When the Details screen appears, click the Spool Settings button. ■ When the Spool Settings dialogue box appears, choose Start printing after last page is spooled and click OK.
Problem No. 5	A printing device connected to the Wireless Print Server port cannot print or prints garbage.
Solution No. 5	Check the following: ■ Cable connection between Print Server and printer. ■ Printer driver in the application program or Windows matches the printer.
Problem No. 6	The Configuration button on the Printer Status screen in BiAdmin is grayed out, even though my printer is bi-directional.
Solution No. 6	The button is unavailable if the printer is busy. You must wait until the printer is idle.

Problem No. 7	When I send a print job, cannot print or prints garbage.
Solution No. 7	The problem may be due to the printer, if the printer you used is an old model with low speed, the following steps may solve this problem:Try the following: ■ Open the BiAdmin Utility. ■ Click the Printer Status icon. ■ Change the Printer Type setting to Low Speed or set the Handshake Signal setting to Ack & Busy.

Section 9 - Network Server Configuration

Windows NT Server

Preparing for TCP/IP Printing

If using Windows NT 3.51 or Windows NT 4.0, Microsoft TCP/IP Printing Support must be installed.

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

Windows NT 3.51

1. Start the Network option in Control Panel. When the Network Settings dialog box appears, click the Add Software button to display the Add Network Software dialog box.
2. Select TCP/IP Protocol And Related Components in the Network Software list box, and then click the Continue button.
3. In the Windows NT TCP/IP Installation Options dialog box, check the TCP/IP Network Printing Support option.
4. Click the OK button. Windows NT Setup will display a message asking for the full path to the Windows NT distribution files. Provide the appropriate location and click the Continue button. All necessary files will be copied to your hard disk.
5. If you did not check the Enable Automatic DHCP Configuration option in the Windows NT TCP/IP Installation Options dialog box, you must complete all the required TCP/IP configuration procedures manually.
6. After you finish configuring TCP/IP, the Network Settings dialog box will reappear, click the Close button and then restart your computer for the changes to take effect.

Windows NT 4.0

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

Adding a TCP/IP Remote Printer

Windows 3.51

1. From the Printer menu in Print Manager, select Create Printer.
2. In the resulting dialog box, enter data as follows:

Printer Name	Enter a name (up to 32 characters). This name appears in the title bar of the printer window.
Driver	Select the appropriate driver for the attached printer.
Description	Enter a printer description for other network users to reference.
Print To	Select Other.

3. A Print Destinations dialog box will appear after selecting Other. In the Available Print Monitor list, select LPR Port, then OK.
4. An Add LPR compatible printer window will appear. Enter data in the fields as follows:

Name Or Address Of Host Providing LPD	Enter the IP address of the Wireless Print Server .
Name Of Printer On That Machine	Enter the appropriate logical printer number. (e.g. L1)

5. When the Create Printer dialog box reappears, check the Share This Printer On The Network option.
6. The resource name shown in the Share Name box can be changed if you wish. In the Location box, you can enter information concerning the printer location. Network users will see this information when browsing to find this printer.
7. Complete any other configuration information in the Create Printer dialog box, save and exit.

Client computers can now be configured as described in Section 4 - Client Configuration.

Windows NT 4.0

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

Client computers can now be configured as described in Section 4 - Configuring your Computer.

Windows 2000 Server

1. Start the Add Printer Wizard, select Network Printer, then click Next to browse for the Wireless Print Server .
2. Locate and double-click the Wireless Print Server , select the desired port, and click Next.
3. Click "OK", and select the correct Manufacturer and Model for this printer.
4. Follow the prompts to complete the installation.
5. In the Printers folder, right-click the new printer, and select Sharing.

· Select "Shared As:" and enter an appropriate name for this printer. Users will see this name when browsing for the printer during installation.

· If desired, click "Additional Drivers" and install printer drivers for other versions of Windows, such as Windows 98. This will assist users during the installation process.

6. Click OK to close this Window. Configuration is now complete.

Client computers can now be configured as described in Section 4 - Configuring your Computers.

Unix Systems

Your Print Server can be configured using FTP, and it supports the following Unix printing methods:

- LPD
- FTP
- Direct Socket Interface

For full details on using Unix systems with your Print Server , refer to the Unix manual in the / Manual/Unix directory on the CD-ROM.

Registering your NetComm Product

To ensure that the conditions of your warranty are complied with, please go to the NetComm web site for quick and easy registration of your product at

www.netcomm.com.au

Alternatively, you can complete the Warranty Registration Form on the following page and mail it to NetComm Limited, PO Box 1200, Lane Cove NSW 2066.

Trademarks and Notices

Please note that the images used in this document may vary slightly from those of the actual product. Specifications are accurate at the time of the preparation of this document but are subject to change without notice.

Cut along the line

Warranty Registration Form

Date of Purchase .....

Name .....

Company .....

Address .....

..... Post Code .....

Tel No ( ) ..... Fax No ( ) .....

E-mail .....

The following information is vital for your warranty

Please make sure it's correct and complete.

Serial No .....

Model .....

Product Type:

- ☐ PC Card
- ☐ External
- ☐ Internal
- ☐ Other

! Make sure you fill this section in!

I intend to use this product at:

- ☐ Home
- ☐ School/College/University
- ☐ Business
- ☐ Government Office

Dealer's Name .....

Dealer's Address .....

..... Post Code .....

Tel No ( ) ..... Fax No ( ) .....

How did you find out about our products?

.....

.....

Product Warranty

The warranty is granted on the following conditions:

1. This warranty extends to the original purchaser (you) and is not transferable;
2. This warranty shall not apply to software programs, batteries, power supplies, cables or other accessories supplied in or with the product;
3. The customer complies with all of the terms of any relevant agreement with NetComm and any other reasonable requirements of NetComm including producing such evidence of purchase as NetComm may require;
4. The cost of transporting product to and from NetComm's nominated premises is your responsibility; and,
5. NetComm does not have any liability or responsibility under this warranty where any cost, loss, injury or damage of any kind, whether direct, indirect, consequential, incidental or otherwise arises out of events beyond NetComm's reasonable control. This includes but is not limited to: acts of God, war, riot, embargoes, acts of civil or military authorities, fire, floods, electricity outages, lightning, power surges, or shortages of materials or labour.
6. The customer is responsible for the security of their computer and network at all times. Security features may be disabled within the factory default settings. NetComm recommends that you enable these features to enhance your security.

The warranty is automatically voided if:

1. You, or someone else, use the product, or attempts to use it, other than as specified by NetComm;
2. The fault or defect in your product is the result of a voltage surge subjected to the product either by the way of power supply or communication line, whether caused by thunderstorm activity or any other cause(s);
3. The fault is the result of accidental damage or damage in transit, including but not limited to liquid spillage;
4. Your product has been used for any purposes other than that for which it is sold, or in any way other than in strict accordance with the user manual supplied;
5. Your product has been repaired or modified or attempted to be repaired or modified, other than by a qualified person at a service centre authorised by NetComm; and,
6. The serial number has been defaced or altered in any way or if the serial number plate has been removed.

Limitations of Warranty

The Trade Practices Act 1974 and corresponding State and Territory Fair Trading Acts or legalisation of another Government ("the relevant acts") in certain circumstances imply mandatory conditions and warranties which cannot be excluded. This warranty is in addition to and not in replacement for such conditions and warranties.

To the extent permitted by the Relevant Acts, in relation to your product and any other materials provided with the product ("the Goods") the liability of NetComm under the Relevant Acts is limited to, at the option of NetComm to:

- Replacement of the Goods; or
- Repair of the Goods; or
- Payment of the cost of replacing the Goods; or
- Payment of the cost of having the Goods repaired.

All NetComm ACN 002 490 486 products have a standard 12 months warranty from date of purchase. However some products have an extended warranty option (refer to packaging). To be eligible for the extended warranty you must supply the requested warranty information to NetComm within 30 days of the original purchase by registering on-line via the NetComm web site at www.netcomm.com.au.

NetComm reserves the right to request proof of purchase upon any warranty claim.

The easiest, most convenient way to share printers

This is real freedom! Now you can share your printer with anyone on your network – wired or wireless. You can place your printer pretty much wherever you like. And you can rest assured it's compatible with all the drivers and Operating Systems on your LAN.

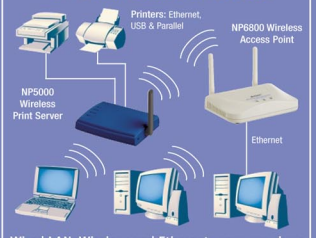
The NetComm Wireless Multi-Port Print Server saves space, time and increases your network performance as well. And its easy installation gets you up and running in minutes.

Compatible with virtually all printers and major Operating Systems – including Windows® 98, Me, NT, 2000, XP or Macintosh OS9.x and higher – your data-intensive print jobs will glide through at high speed and with maximum reliability.

The NetComm Wireless Multi-Port Print Server supports Infrastructure Mode (using a Wireless Access Point) and Ad-Hoc Mode (point-to-point wireless networks) – see diagrams below.

NetComm's Wireless Multi-Port Print Server will ensure that everyone on your network enjoys fast, effortless printing, time and again.

Infrastructure Mode



Wired LAN, Wireless and Ethernet users can share a printer connected to the NetComm NP5000 .

Ad Hoc Mode

Ad Hoc Mode offers convenient wireless printing for the home and small office.

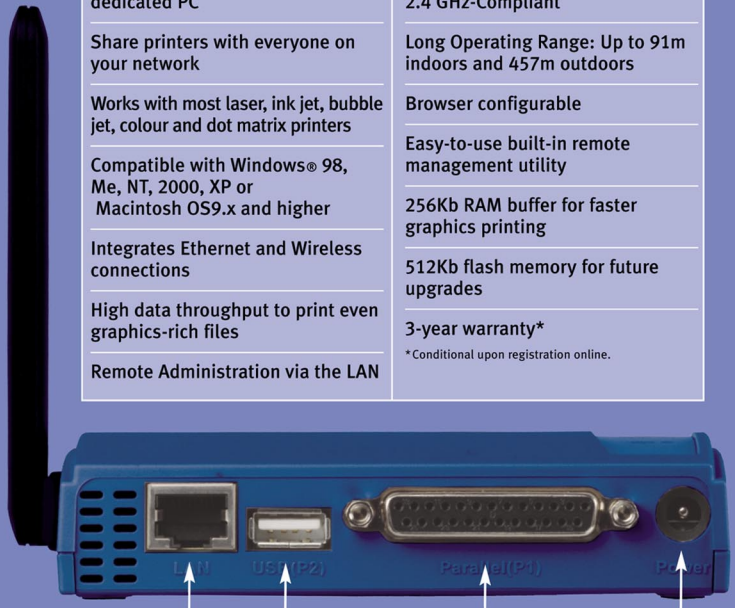
Benefits

- Stand-alone – doesn't need a dedicated PC
- Share printers with everyone on your network
- Works with most laser, ink jet, bubble jet, colour and dot matrix printers
- Compatible with Windows® 98, Me, NT, 2000, XP or Macintosh OS9.x and higher
- Integrates Ethernet and Wireless connections
- High data throughput to print even graphics-rich files
- Remote Administration via the LAN

Key Features

- IEEE 802.11b (DSSS) 2.4 GHz-Compliant
- Long Operating Range: Up to 91m indoors and 457m outdoors
- Browser configurable
- Easy-to-use built-in remote management utility
- 256Kb RAM buffer for faster graphics printing
- 512Kb flash memory for future upgrades
- 3-year warranty*

*Conditional upon registration online.



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Product Code: NBNP5000