



**LevelOne**

**FPS-9023/WPS-9123**

Wired/Wireless Printer Server w/Multi - Port

**User Manual**

V1.0.0-0606

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# 1. Introduction

## **1.1 Product Introduction**

Thank you for purchasing LevelOne FPS-9023/WPS-9123 printer server. This printer server allows your printer to become a shared device on the network. It offers printing flexibility and manageability on your Local Area Network at an extremely low cost and with an absolute minimum setup and maintenance required.

WPS-9123 printer server provides IEEE 802.11g/b wireless LAN (up to 54Mbps data transfer rate), an Ethernet network port (10/100Mbps Ethernet), two USB 2.0 ports and one Parallel port for printers.

This printer server supports IPX/SPX, NetBEUI, TCP/IP and AppleTalk protocols. It is the best network printing solutions for various common network operating systems such as Windows 98SE/ME/2000/XP/NetWare, Unix/Linux and MAC OS, etc.

With the help of Installation Wizard, you can easily and instantly complete the settings for the printing environment, and start enjoying the fantastic features provided by the printer server.

In the following chapters, we will introduce in detail the printing features, installation methods, and system configuration for different network environments.

If you would like to set up and install printer server quickly, please refer to the Quick Installation Guide that comes along with this printer server.

\*

## **1.2 Product Package**

This package contains the following components:

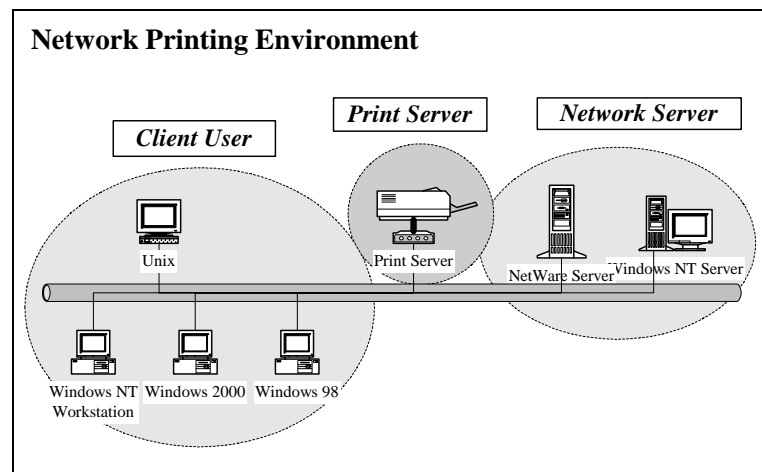
- FPS-9023 or WPS-9123
- Antenna (For WPS-9123 only)
- Power Adapter
- CD Manual/Driver/Utility
- Quick Installation Guide

## 1.3 Network Printing Architecture

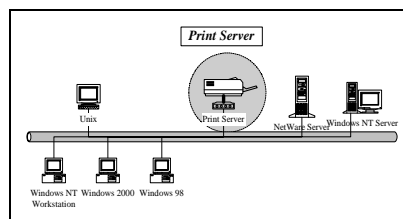
This section illustrates how printer server functions and operates on the network. Before you install and use printer server, it is strongly recommended that you read this section completely, and select only the chapters you need according to your network operating system by “Contents of the User’s Manual” in next section.

This section will first introduce the role every component plays in the network-printing environment.

- Printer server
- Client User
- Network Server (optional)

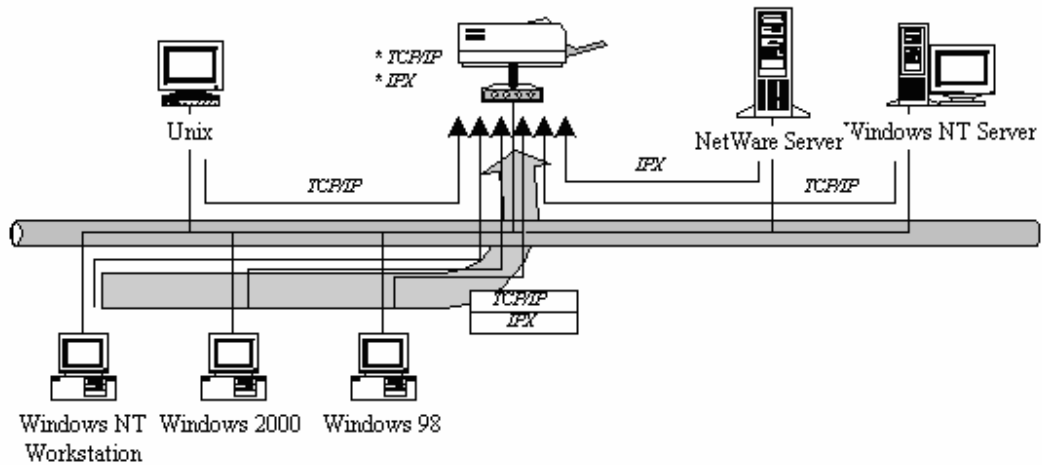


### 1.3.1 Printer server Network Functions

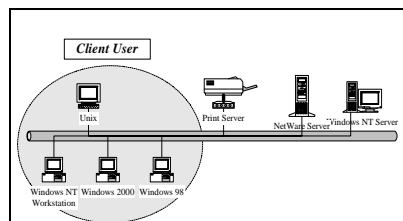




Because printer server supports IPX/SPX, NetBEUI, TCP/IP and AppleTalk network protocols, any networked computer can directly print to the printer server from any of its installed protocol.



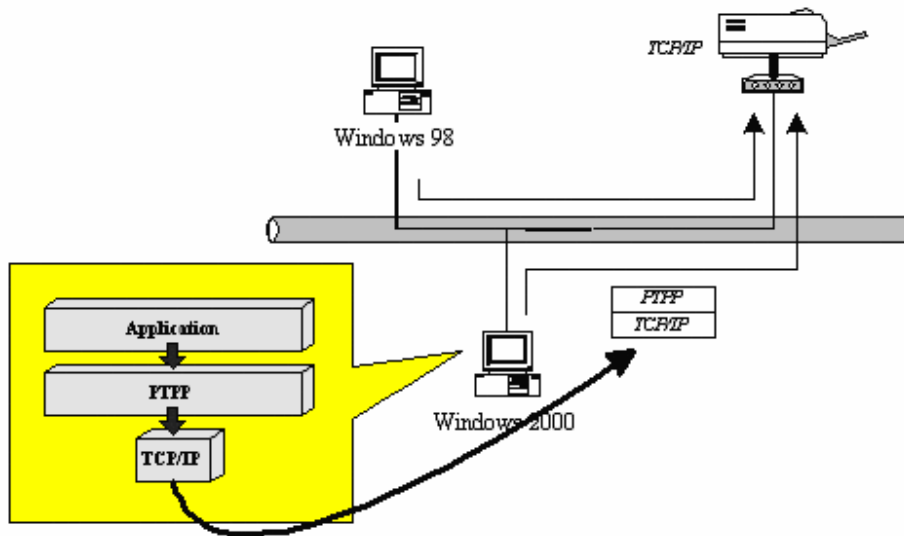
### 1.3.2 Network Printing Functions for Clients



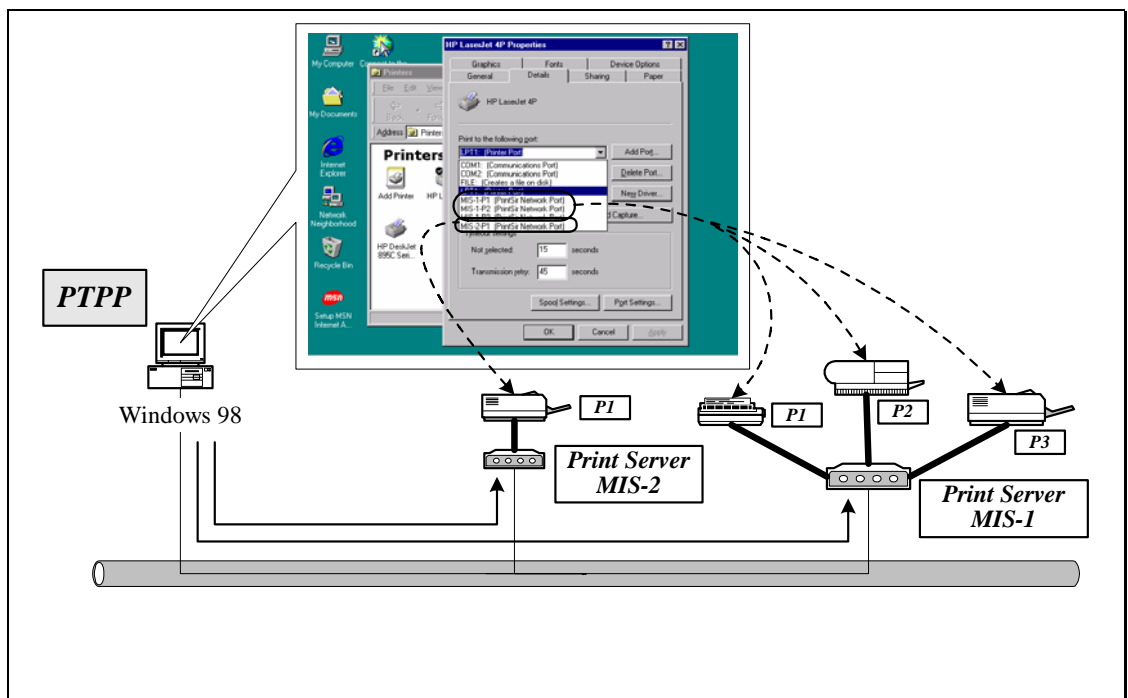
Common operating systems for clients are classified as following:

Windows 98SE/ME/2000/XP/

Our printer server system provides PTPP (Peer-to-Peer Printing) driver and utilities for Windows 98SE/ME//2000/XP/ users. PTPP (Peer-to-Peer Printing) supports TCP/IP protocol.



In the client installation procedure, after PTPP (Peer-to-Peer Printing Driver) is installed into Windows, the system will automatically (manual configuration is also allowed) search all the printer servers on the network, and then add their printing ports into Windows' printing port (see below).



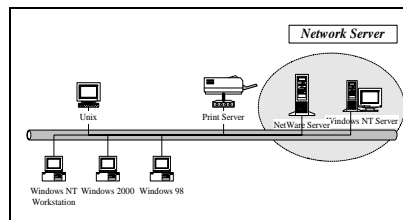
UNIX / Linux

UNIX (include HP/UX, SCO Unix, SunOS, Solaris, Unixware DECUnix, IBM AIX and others) and Linux use the system-standard LPR to print through printer server.

## MAC OS

MAC OS can use the system-standard AppleTalk network to print through printer server.

### 1.3.3 Network Printing Functions for Network Server



Common network servers are classified as following:

#### Windows 2000

Our printer server system provides PTPP (Peer-to-Peer Printing) driver and utilities for Windows 2000. After PTPP is installed, the server can directly print through printer server. Adding this printing function into Windows 2000 allows print queue, user authority management, and many other advanced features to be used.

#### NetWare 3.x/4.x/5.x

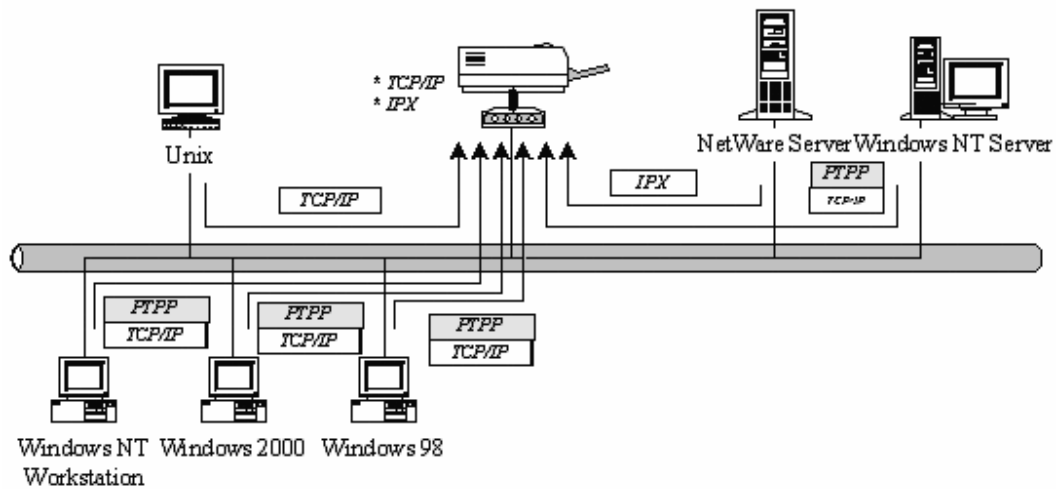
In NetWare environment, printer server offers various printing modes like print queue, remote printer, etc.

## 1.4 Network Printing Environment

Common network environment are classified as following:

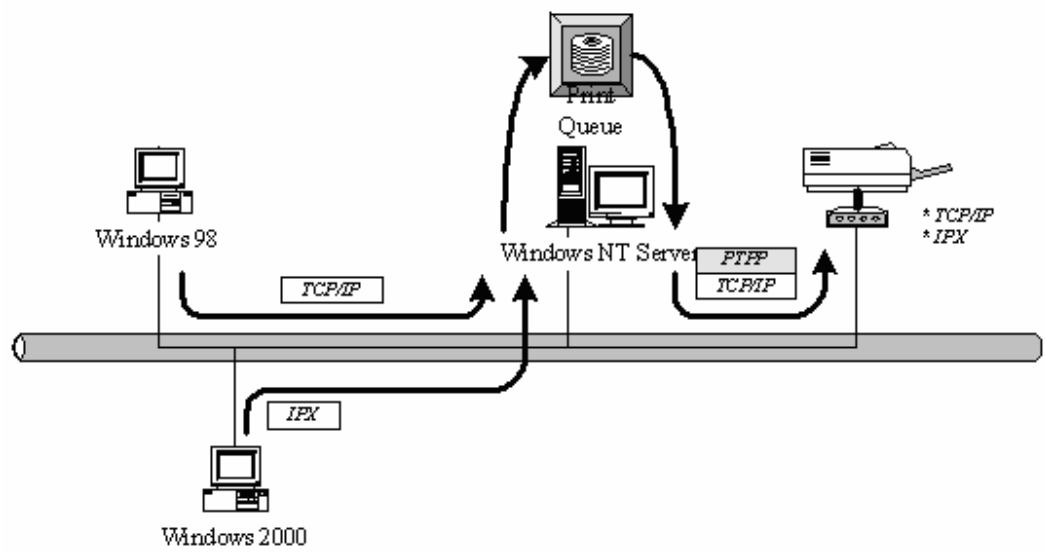
Windows Peer-to-Peer Network

The client's PTPP driver will use TCP/IP protocol to print through printer server.

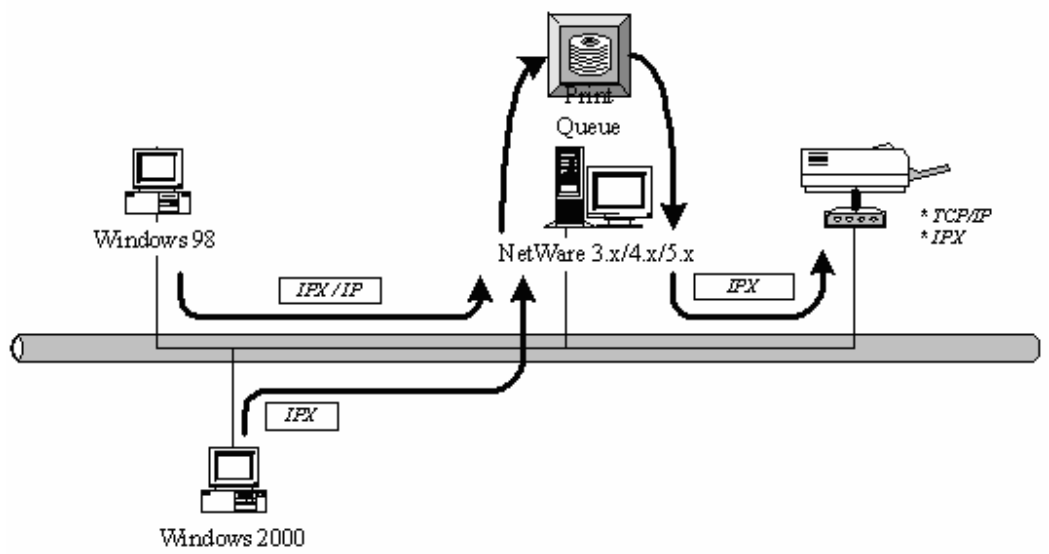


Windows 2000 Network

Network printing function will become available after PTPP driver is installed into Windows 2000. Adding this printing function into Windows 2000 allows print queue, user authority management, and many other advanced features to be used.



NetWare Network (see below)



## **1.5 Contents of the User Manual**

Chapter 2 explains printer server's hardware installation and configuration. It is strongly recommended for you to read.

The following chapters introduce:

Chapter 3. Windows Peer-to-Peer Network

Chapter 4. Windows 2000 Server-Based Networks

Chapter 5. NetWare Network

Chapter 6. UNIX System Network

You may select the appropriate chapters and sections to read depending on your network printing's requirement.

Chapter 7 and chapter 8 introduce printer server's management and configuration utilities on Windows and Web Browser's environment respectively. You may select the appropriate management utility according to the administrator's computer platform.

Chapter 9 introduces the commands that can be used in printer server management through Telnet.

Chapter 10 introduces Printer server's IPP Printing function and setup procedure. The IPP Printing provides a convenient way to print documents across the Internet by the IPP protocol.

Chapter 11 introduces how to setup LPR printing in MAC OS.

Chapter 12 introduces the UPnP function of the printer server. UPnP function will help to find the IP address of the printer server and enables user directly link to the web page of the printer server without entering the IP Address of the printer server in web browser.

Chapter 13 In Windows XP SP2, you may not find any printer server listed on the "Available Ports" in "Network Ports Quick Setup". Please follow the instruction in this chapter and resolve the problem.

## **1.6 *Firmware & Printing Function***

The printer server provides a complete network printing solution. The feature set is listed below:

- PTPP (Peer-to-Peer-Printing)
- TCP/IP (LPR)
- IPP Printing
- NetWare Bindery Printing
- AppleTalk
- SMB Printing

## 2. Hardware Installation

1. Unpack the printer server package and verify that all the items listed in the section 1.2 are provided.
2. Connect the printer server to the printer you want to share on the network.
3. Connect the printer server to your network by attached the network cable to the UTP port of the printer server.
4. Connect the power adapter to the printer server. The printer server will perform the Power-On-Self-Test (POST) after it is powered on. During the POST, the three Printer Port LEDs will be on. When the LEDs are unlighted, the printer server is ready.

***NOTE1: MUST use the power adapter shipped with the printer server; do NOT use any other power adapter from any sources.***

***NOTE2: To prevent the compatibility problem between printer server and a few printer, it is recommended that you power on the printer server before the printer.***



## 2.1 LED Status Instruction

### Wired Printer Server: FPS-9023

| LED         | Color | Status   | Description                                                                                                 |
|-------------|-------|----------|-------------------------------------------------------------------------------------------------------------|
| LAN         | Green | On       | The LAN cable is connected to the Printer Server.                                                           |
|             |       | Off      | No network connection.                                                                                      |
|             |       | Blinking | Network traffic transferring or receiving through the LAN port.                                             |
| Print 1 ~ 3 | Green | On       | If the Printer Server is upgraded failed, the LED will be lighted steadily.                                 |
|             |       | Off      | No printing jobs.                                                                                           |
|             |       | Blinking | The Printer Server is sending printing jobs to printer.                                                     |
| Power       | Green | On       | The Printer Server is ready.<br>If the Printer Server is upgraded failed, the LED will be lighted steadily. |
|             |       | Off      | The Printer Server is failed to reboot.                                                                     |

- Reboot (Press the reset button with a pencil tip for more than 3 seconds)  
When press the reset button for more 3 seconds the Power Led will be blinking slowly. While Printer Server is rebooting, the Power/Print LEDs are all ON. When only the Power LED is ON, the rebooting is completed.
- Reset to Factory Default (Press the reset button with a pencil tip for longer than 5 seconds)  
When press the reset button for longer than 5 seconds the Power Led will be blinking. Then the Power/Print LEDs are all ON. When only the Power LED is ON, the Printer Server is reset to factory default settings.

### Wireless Printer Server: WPS-9123

| LED         | Color | Status   | Description                                                                                                 |
|-------------|-------|----------|-------------------------------------------------------------------------------------------------------------|
| LAN         | Green | On       | The LAN cable is connected to the Print Server.                                                             |
|             |       | Off      | No network connection.                                                                                      |
|             |       | Blinking | Network traffic transferring or receiving through the LAN port.                                             |
| Print 1 ~ 3 | Green | On       | If the Printer Server is upgraded failed, the LED will be lighted steadily.                                 |
|             |       | Off      | No printing jobs.                                                                                           |
|             |       | Blinking | The Printer Server is sending printing jobs to printer.                                                     |
| WLAN        | Green | On       | If the Printer Server is upgraded failed, the LED will be lighted steadily.                                 |
|             |       | Off      | The wireless mode of the Printer Server is disabled or auto but wire cable is connected.                    |
|             |       | Blinking | Network traffic transferring or receiving through the Wireless.                                             |
| Power       | Green | On       | The Printer Server is ready.<br>If the Printer Server is upgraded failed, the LED will be lighted steadily. |
|             |       | Off      | The Printer Server is failed to reboot.                                                                     |

- Reboot (Press the reset button with a pencil tip for more than 3 seconds)  
When press the reset button for more 3 seconds the Power LED will be blinking slowly. While Printer Server is rebooting, the Power/Print/WLAN LEDs are all ON. When only the Power LED is ON, the rebooting is completed.
- Reset to Factory Default (Press the reset button with a pencil tip for longer than 5 seconds)  
When press the reset button for longer than 5 seconds the Power LED will be blinking. Then the Power/Print/WLAN LEDs are all ON. When only the Power LED is ON, the Printer Server is reset to factory default settings.

## 2.2 Hardware Description

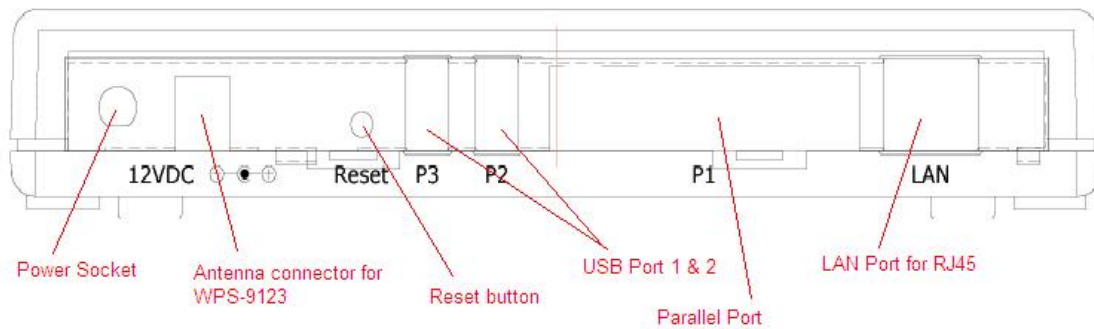
Front Panel for WPS-9123



Front Panel for FPS-9023



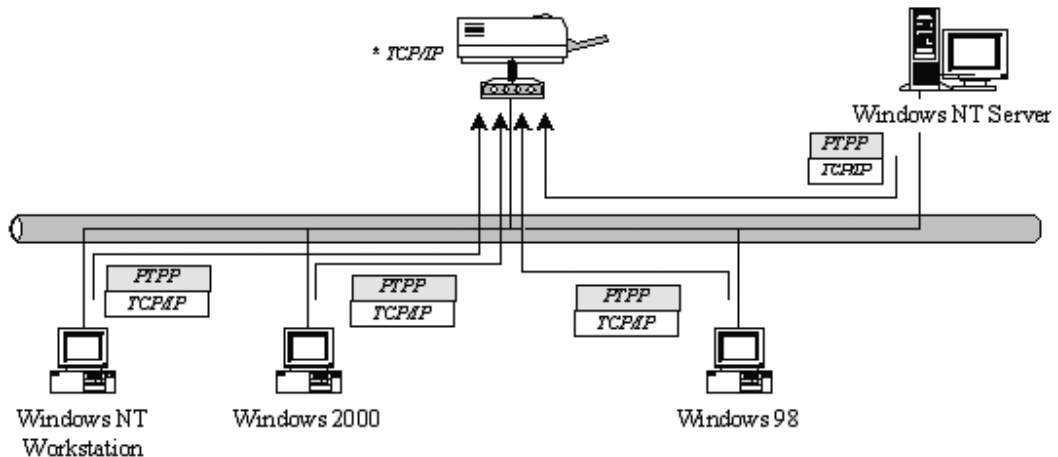
Rear Side



### **3. Windows Peer-to-Peer Network**

### 3.1 System Architecture

Printer server supports Windows Peer-to-Peer network printing mode, which is suitable for most medium and small network environments. Through quick and simple installation procedure, users can immediately enjoy the convenience of network printing.



Installation procedure is separated into following two parts:

1. Administrator Installation and Setup (refer to section 2 for more detailed information).

System administrators must:

- Install administrator's utilities into his/her computer.
- Configure printer server from administrator's configuration utility.

2. Client Installation and Configuration (refer to section 3 for more detailed information).

Client users must install Windows PTPP driver (Peer-to-Peer Printing) for network printing.

In addition, after PTPP is installed, the system will automatically search for all printer servers on the network, and add the printing port of the printer servers into Windows' printing port (refer to Network Printing Architecture in section 1.4 for more detailed information).

### 3.2 Administrator Installation and Setup

The Administrator Installation can be performed on Windows 98SE/ME/2000/XP/ with the same user interface. Before the installation, please verify that your network protocol is installed on your PC (TCP/IP, IPX and/or NetBEUI). It will be helpful in your installation process.

1. Insert the CD shipped along with the printer server into your CD-ROM drive. The Autorun.exe program should be executed automatically. If not, run Autorun.exe manually from CD-ROM drive's root directory.
2. The "Installation Manager" will be displayed on the screen as following. Select the model then click "Administrator Installation".





# WPS-9123

11G WIRELESS PRINTER SERVER

ADMINISTRATOR UTILITY

PREVIOUS PAGE

CLIENT UTILITY

EXIT

USER MANUAL



[HTTP://WWW.LEVEL1.COM](http://www.level1.com)

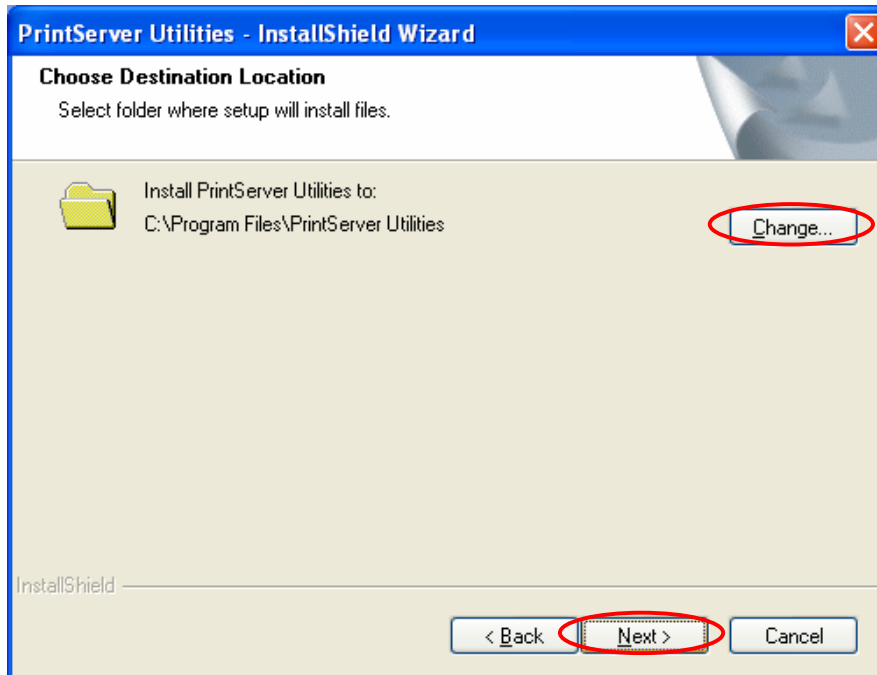
COPYRIGHT ©2005, DIGITAL DATA COMMUNICATIONS, INC. ALL RIGHTS RESERVED.



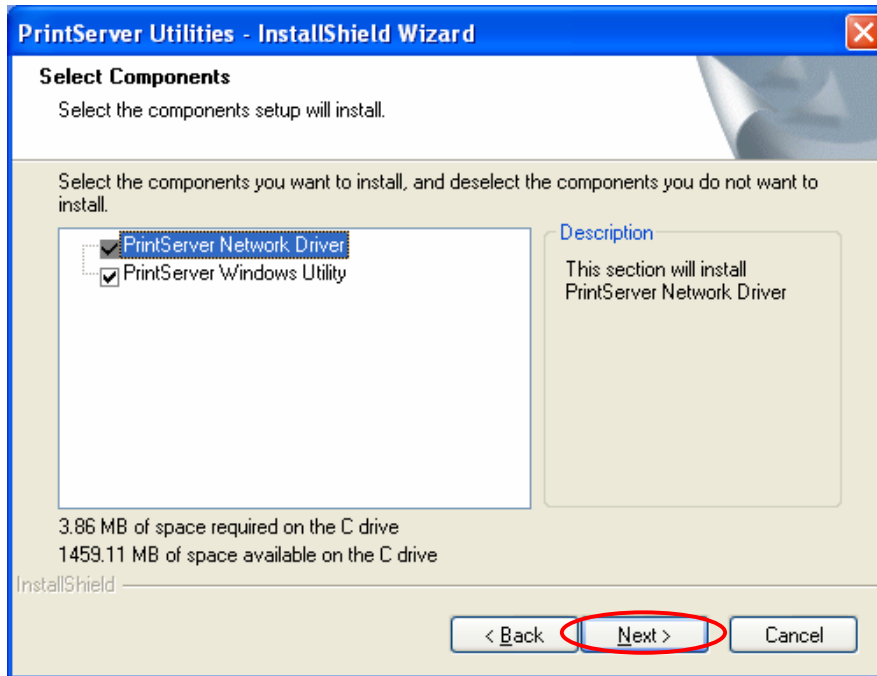
3. The "Printer server Utilities" window will be displayed. Click "Next".



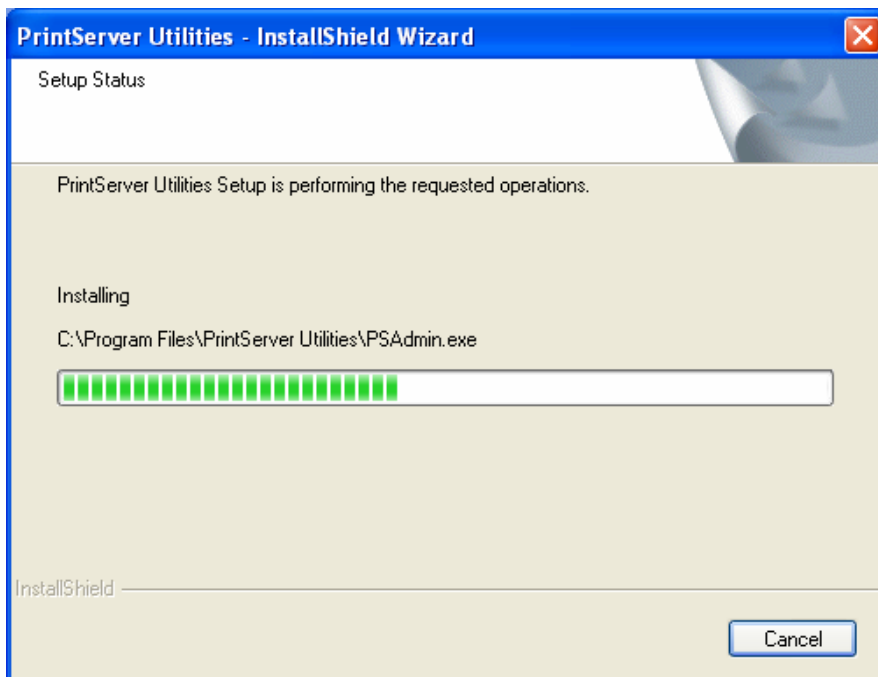
4. Click "Next" to install the utilities in the default folder or click "Change" to specify the destination folder where you would like to install the utilities.



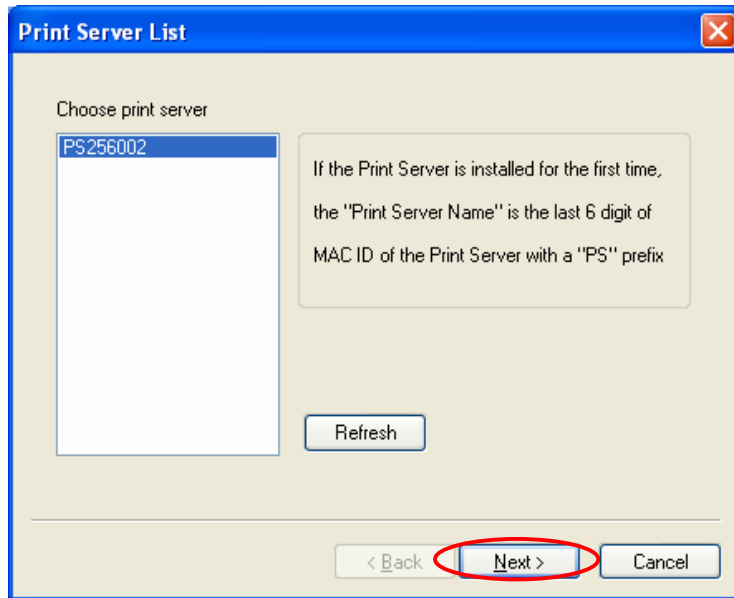
5. Select the components you want to install. It is highly recommended to install all provided components. Click "Next" to continue.



6. The system will start to install the utilities automatically.



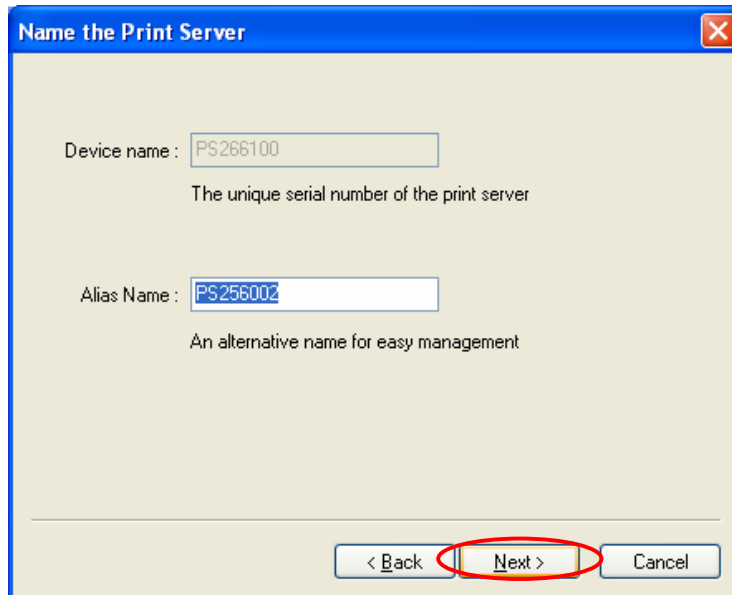
7. You have completed the installation phase and prepare to configure the Printer server. The “Choose Printer server” will list all Printer servers within the network. Select the Printer server you would like to configure and click “Next”.



**NOTE 1: If this is the first time you configure the Printer server, the “Printer server Name” is the last 6-digit of MAC ID with prefix “PS”. Please check the MAC ID on the printer server.**

**NOTE 2: The list can only display the devices from the same manufacturer.**

8. Specify a recognizable name for the Printer server and click “Next”.



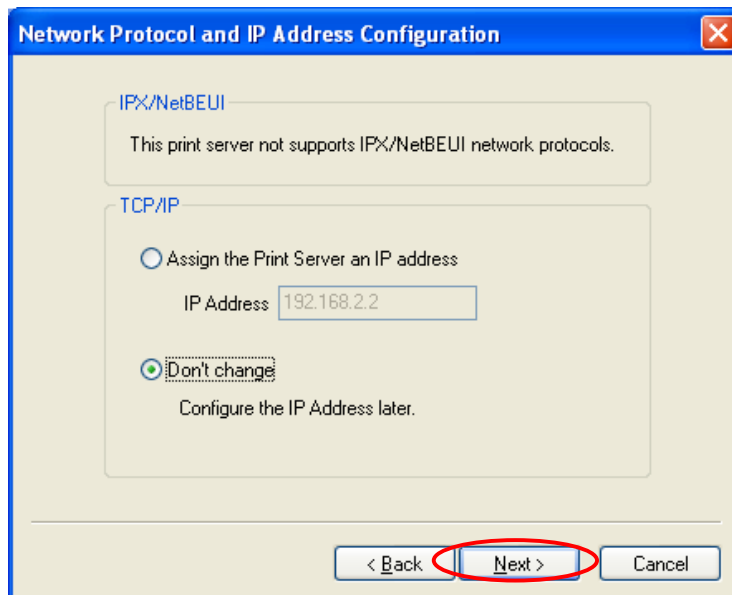
**Name the Print Server**

Device name : PS266100  
The unique serial number of the print server

Alias Name : PS256002  
An alternative name for easy management

< Back Next > Cancel

9. Specify the IP Address for the Printer server manually or click “Next” to keep default IP Address, i.e. 192.168.2.2.



**Network Protocol and IP Address Configuration**

IPX/NetBEUI  
This print server not supports IPX/NetBEUI network protocols.

TCP/IP

Assign the Print Server an IP address  
IP Address 192.168.2.2

Don't change  
Configure the IP Address later.

< Back Next > Cancel

10. The configuration summary is displayed in the window. Now, you have completed the Printer server setup. Click “Finish” and your system will add network port of the Printer server to your PC automatically.

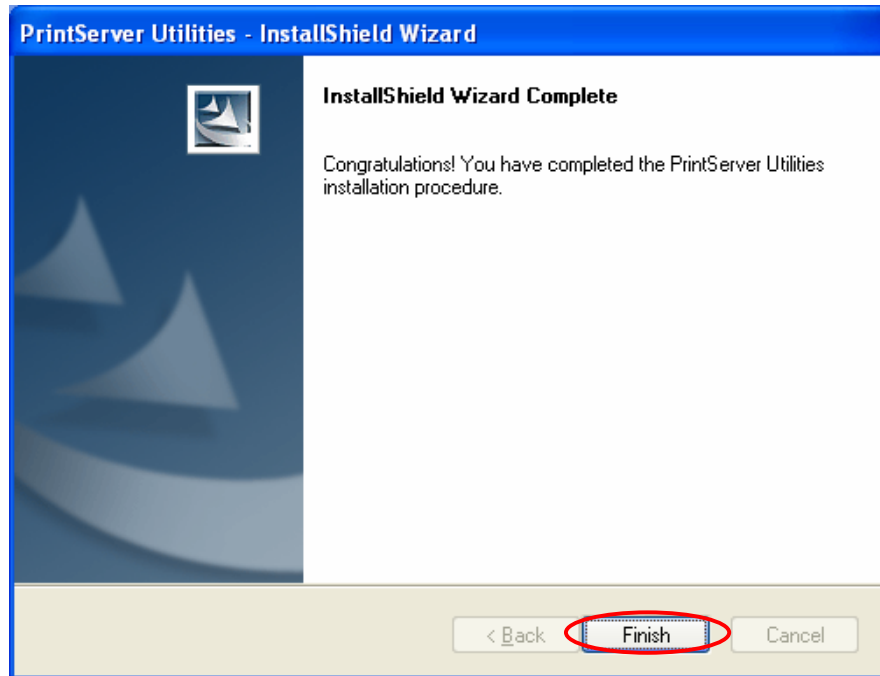
The screenshot shows a dialog box titled "Add Network Port" with a blue title bar and a close button (X) in the top right corner. The dialog contains several configuration fields on the left and a text box on the right. At the bottom, there are three buttons: "< Back", "Finish", and "Cancel". The "Finish" button is circled in red.

|                         |             |
|-------------------------|-------------|
| Device Name :           | PS266100    |
| Alias Name :            | PS256002    |
| IPX support :           | Disable     |
| NetBEUI support :       | Disable     |
| TCP/IP support :        | Enable      |
| IP Address Assignment : | Manual      |
| IP Address :            | 192.168.2.2 |

Click "Finish", the program will add the Network Port of the Print Server to your PC automatically.

< Back   **Finish**   Cancel

11. The Administrator Installation procedure is totally completed. Click "Finish".



The Administrator Installation Program have executed the installation procedure that performs the following tasks:

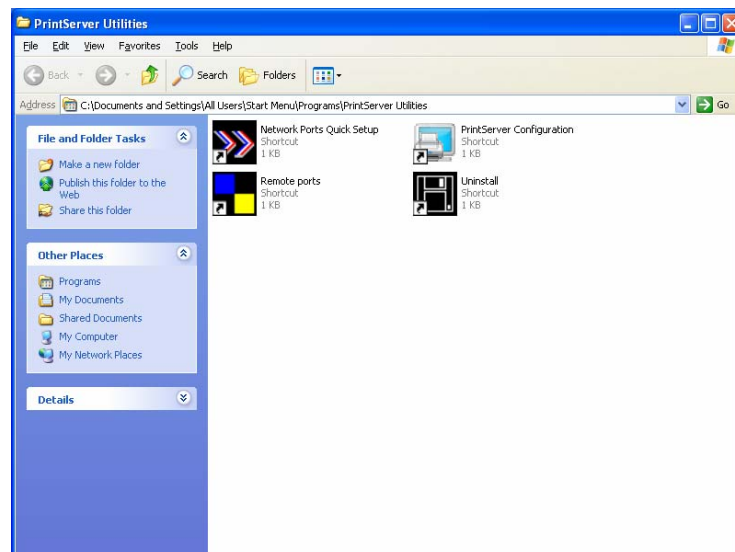
- Install all utilities and drivers to the administrator's PC.
- Configure the printer server (including the printer server name and network protocol)
- Add the network port of the printer server to the administrator's PC.

If you want to print from this administrator's PC to the printer server, all you need to do is to perform Windows' standard "Add Printer" procedure (please refer to Section 3.6).

### 3.3 Administrator Utilities

After Administrator Installation is completed, there will be four utilities in printer server's Program folder.

- Network Ports Quick Setup – Add the network ports of printer servers within the network to your PC.
- Printer server Configuration – Allows you to configure the printer server's IP Address, network protocols and other advanced functions. Please refer to Chapter 7 for the detail instruction of the configuration.
- Remote Ports – Add the network port of remote printer server to your PC.
- Uninstall – Assistant for removing all installed administrator software.

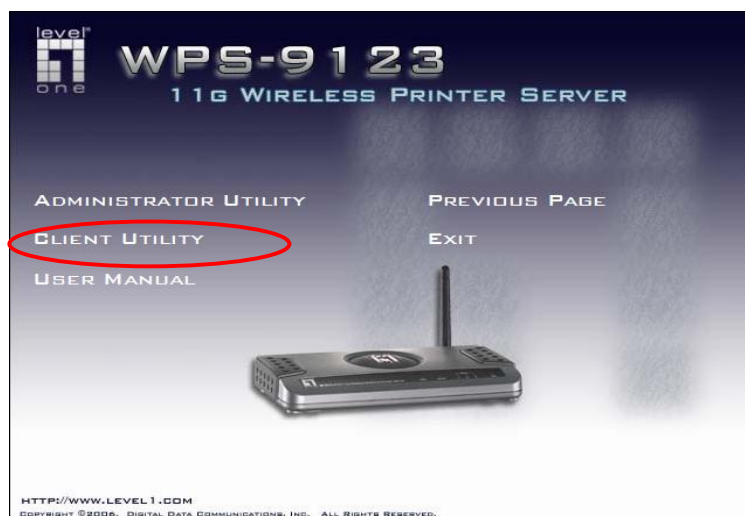




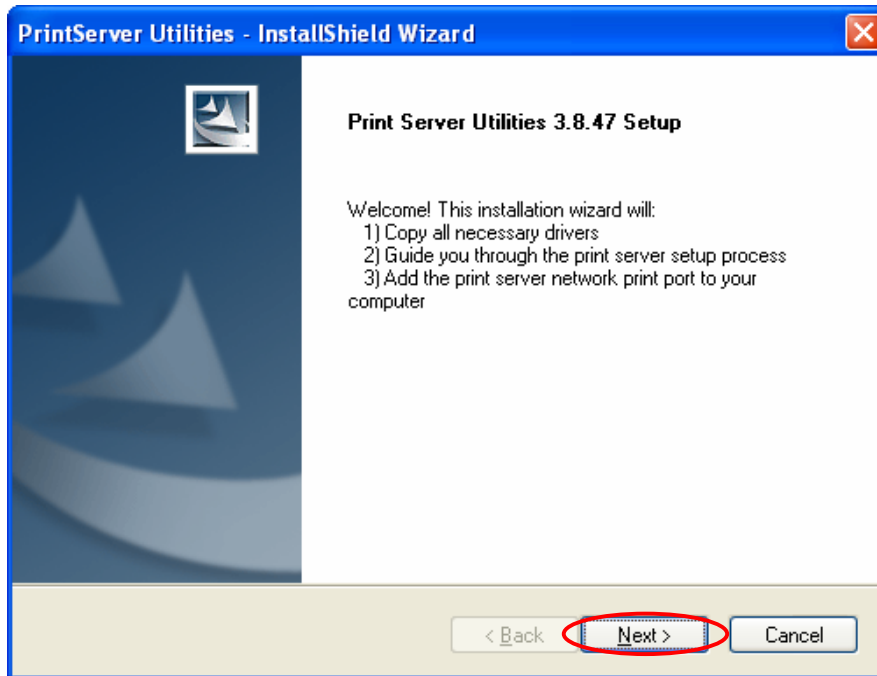
### 3.4 Client Installation and Setup

The Client Installation can be performed on Windows 98SE/ME/2000/XP/ with the same user interface. Before the installation procedure, please confirm that your PC has connected to the network and installed at least one network protocol.

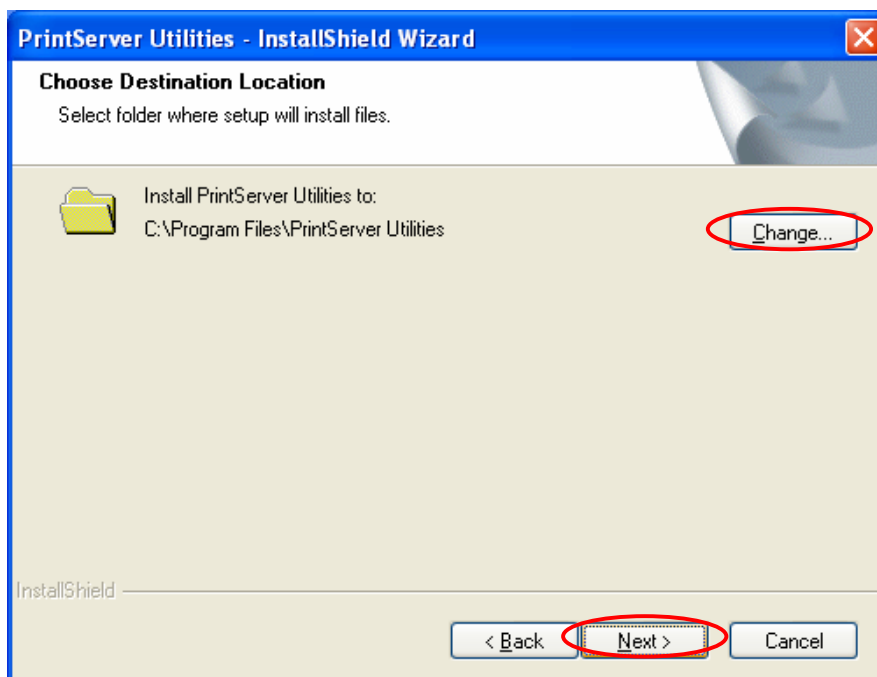
1. Insert the CD shipped along with the printer server into your CD-ROM drive. The Autorun.exe program should be executed automatically. If not, run Autorun.exe manually from CD-ROM drive's root directory.
2. The "Installation Manager" will be displayed on the screen as follows. Select the model then click "Client Installation".



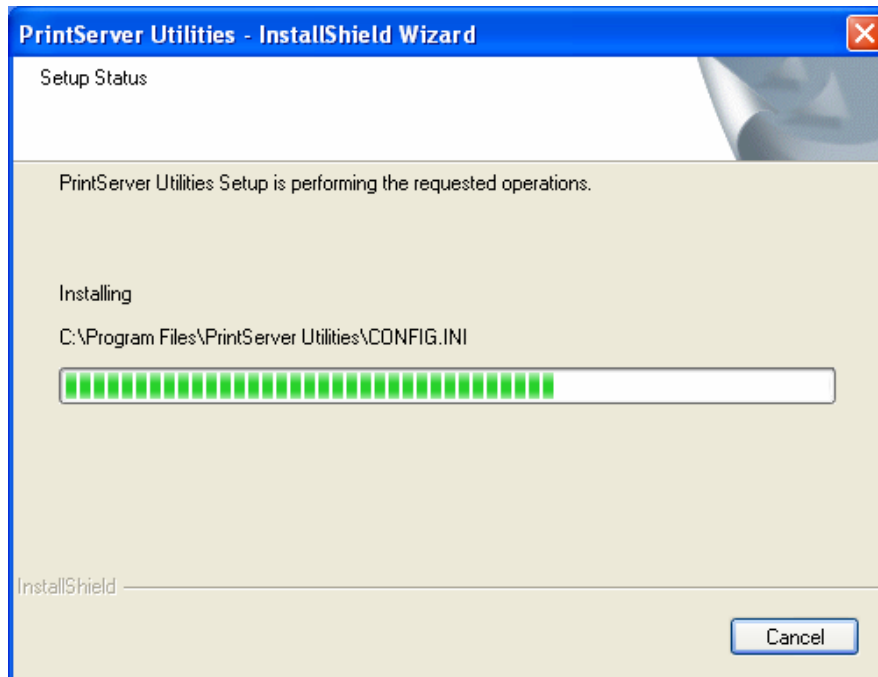
3. The "Printer server Utilities" window will be displayed. Click "Next".



4. Click "Next" to install the utilities in the default folder or click "Browse" to specify the destination folder where you would like to install the utilities.

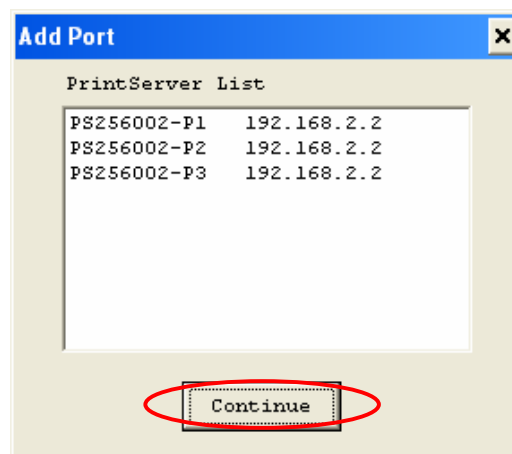


5. The system will start to install the utilities automatically.

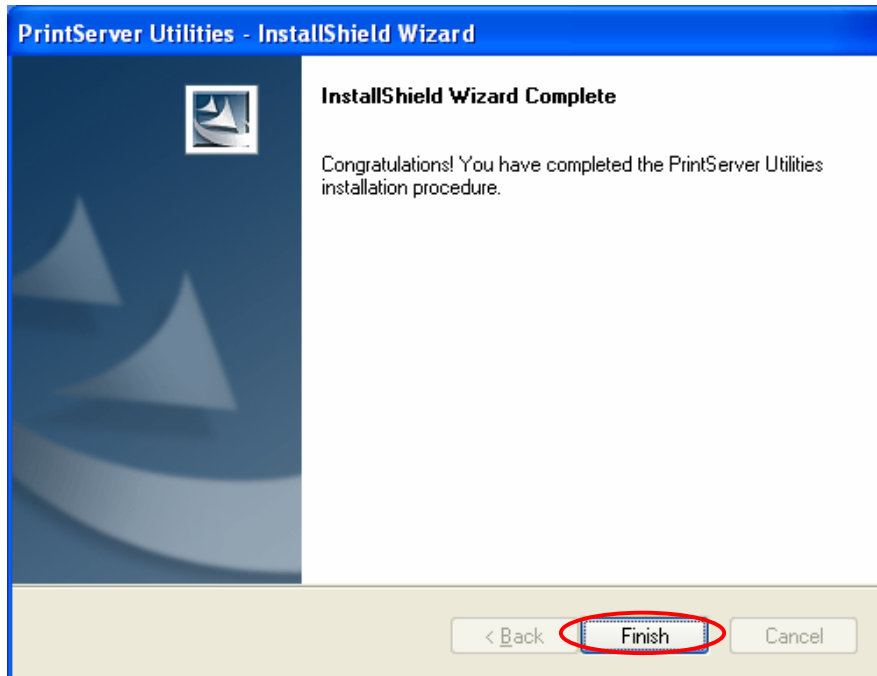


6. Now, the installation procedure is completed, you are ready to set up the client's computer. All network ports of the Printer servers detected on the network will be added to your PC automatically, click "Continue".

Note that if there are no printer servers detected in the network currently, please click "Continue" to finish the installation. Please refer to Section 3.5.1 to add network ports of printer servers manually.



7. The Client Installation procedure is completed. Click “Finish”.



After the installation, you have completed the following tasks:

- Install all utilities and drivers to the client's PC.
- Add all the printer server's network ports of the network to the client's PC.

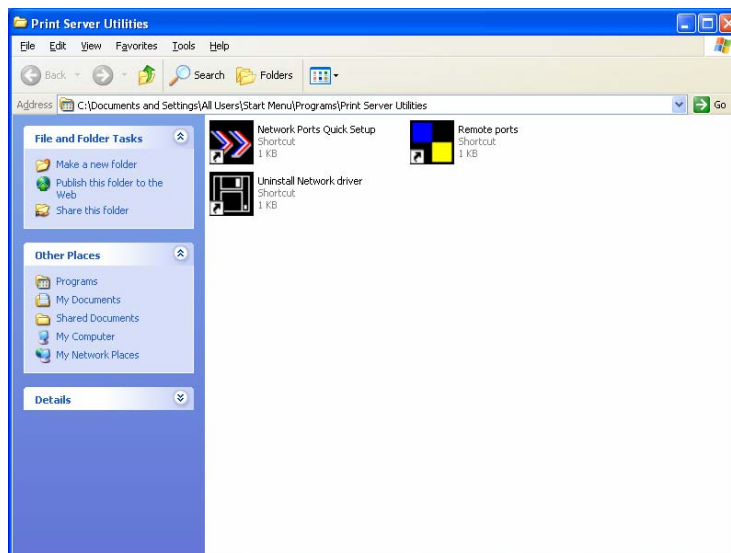
You can then perform the Windows' standard "Add Printer" procedure to add network printers to your PC. Please refer to Section 3.6.

## 3.5 Client Utilities

After Client Installation is completed, there will be three tools in printer server's Program folder.

- Network Ports Quick Setup
- Remote Ports
- Uninstall Network Driver

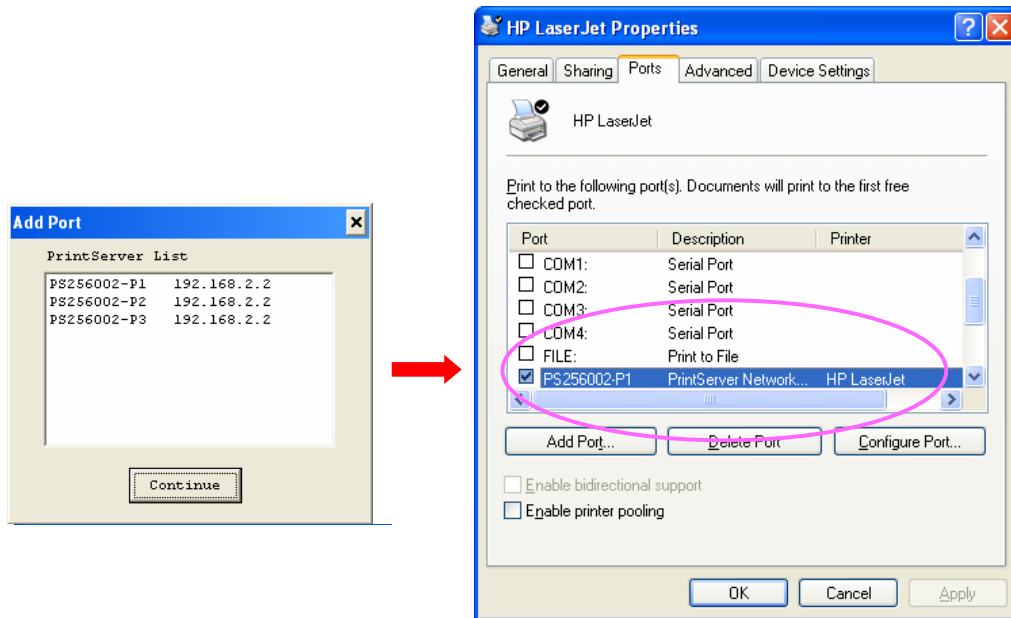
The Uninstall Network Driver will assist you in removing all installed client software. The other two tools are described as follows.



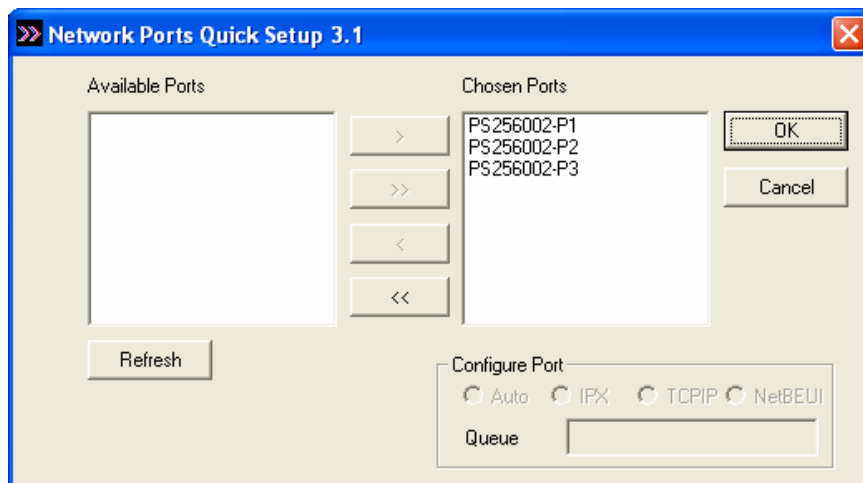
### 3.5.1 Network Ports Quick Setup

Network Ports Quick Setup Utility offers a very simple method to add or remove printer server's printer port from the client's computer.

During the client's installation procedure, the system will automatically search for all printer servers on the network, and add them into the printer ports of the client's computer (see below).



If you have just installed another new printer server in the network, you must run this program first. This program will search for new printer servers and allow you to add the new network printer port into client's computer conveniently. Perform the standard Add Printer procedure, then you can print directly to the printer through the newly installed printer server.



Please be aware that Network Ports Quick Setup Utility can only detect and configure all printer servers on the same network, it cannot

search and configure printer servers on other subnets across network segments. You must use Remote Ports Utility described in the next section to manage remote (across network segments) printer servers.

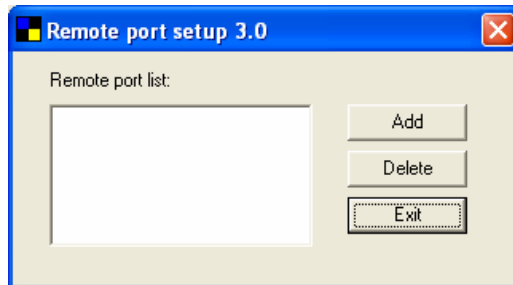
Select the network ports in the “Available Ports” list and click “>” to add ports. If you want to add all available ports, please click “>>”. To cancel some of the network ports or all ports from the “Chosen Ports” list, please click “<” or “<<”.

### 3.5.2 Remote Ports (Utility)

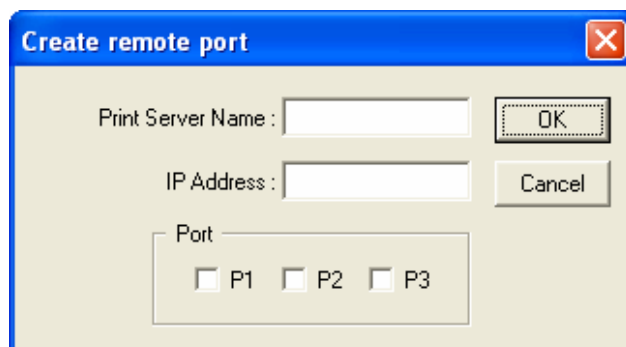
Remote Ports Utility offers a convenient way for you to manage and add printer port of the remote printer server. From the assistant of this utility, you can print to other printer servers outside the subnet across network segment. However, please note that this function only supports TCP/IP network protocol.

Please follow the procedures described below:

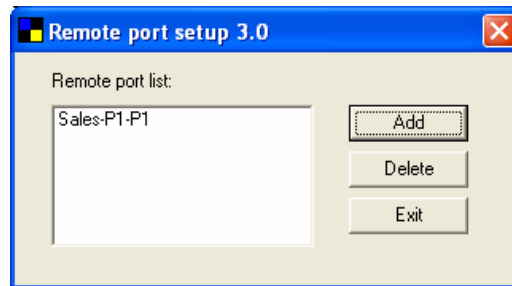
Step1. Run Remote Ports Utility. Clicks “Add” to add a remote print port.



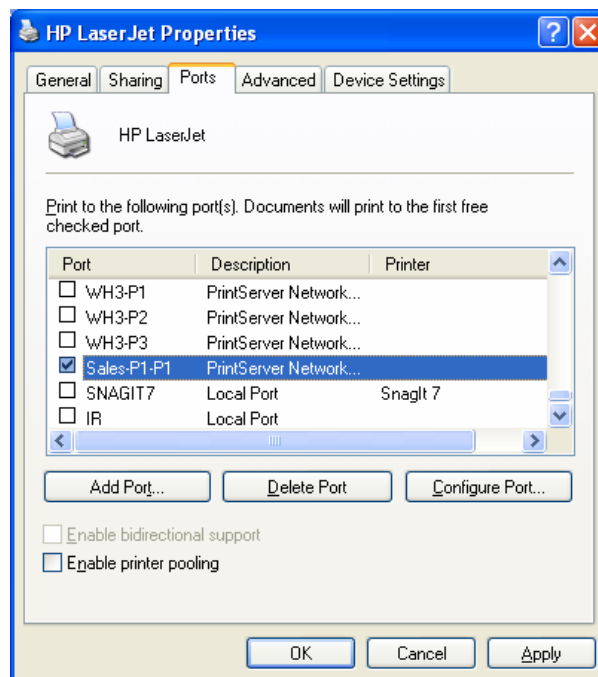
Step2. Enter printer server’s name, IP address, select used ports, and enter LPR queue name of each port. Click “Ok”.



Step3. The new remote print port is displayed as follows.



In order to use the remote printing function, you will have to proceed with normal Add Printer procedure and select your printer port as the newly added remote printer port.





### 3.6 Windows Add Printer Procedure

After adding a “Network Port” of the printer server to your PC by Administrator or Client Installation Program, you can follow the procedure described below to add printer to the Windows. Note that following “Add Printer” steps are running in Windows XP, the steps in other Operating Systems are similar.

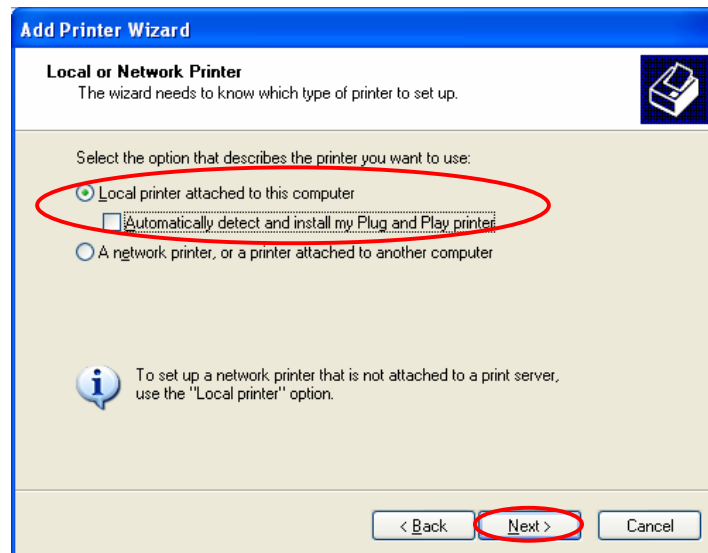
Step1. Click “Start”, choose “Settings” and select “Printers and Faxes”.

Step2. Click “Add a Printer”.

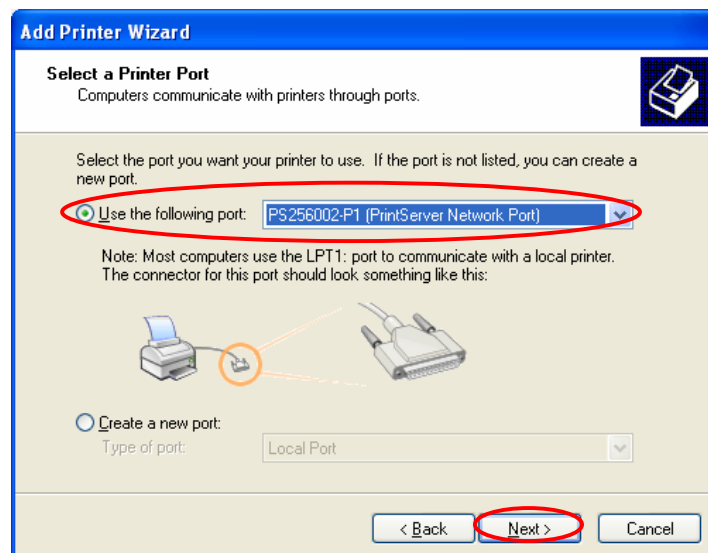
Step3. The “Add Printer Wizard” is displayed. Click “Next”.



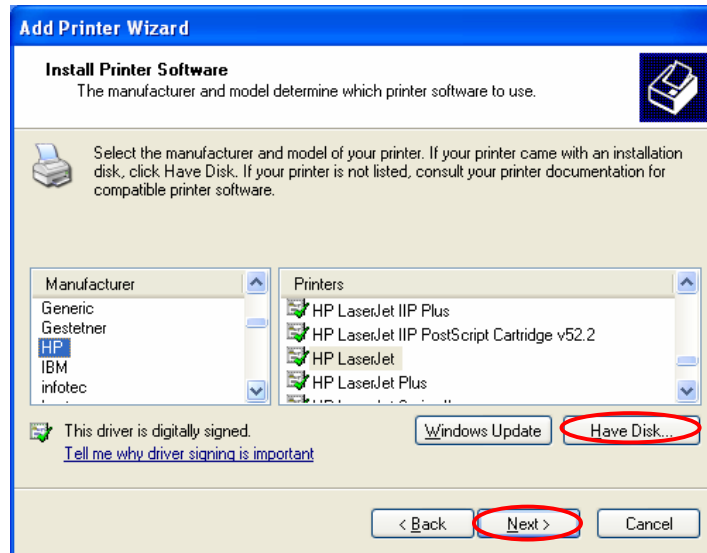
Step4. Select “Local printer attached to this computer” and make sure that “Automatically detect and install my Plug and Play printer” is not selected. Click “Next”.



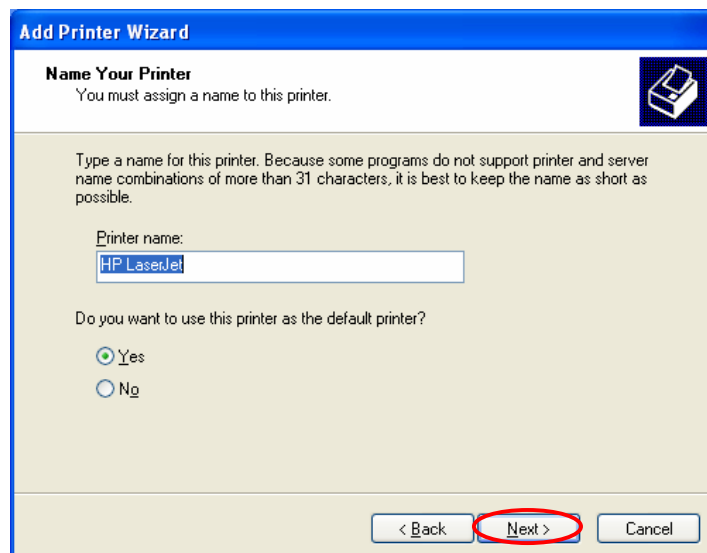
Step5. Choose the suitable “Printer server Network Port” which was created by the Administrator Installation or Client Installation process and click “Next”.



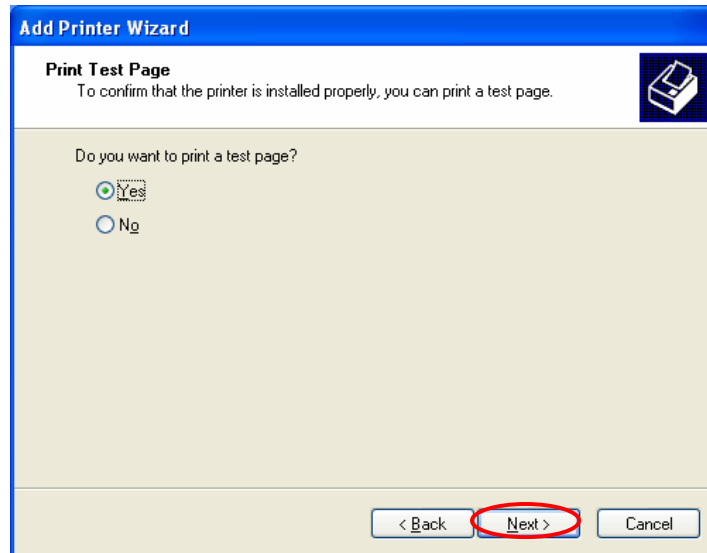
Step6. Select a suitable printer manufacturer and the printer model and click “Next”. If your printer is not in the list, click “Have Disk...” to install the driver of the printer. After installation, the printer model will be added to the list.



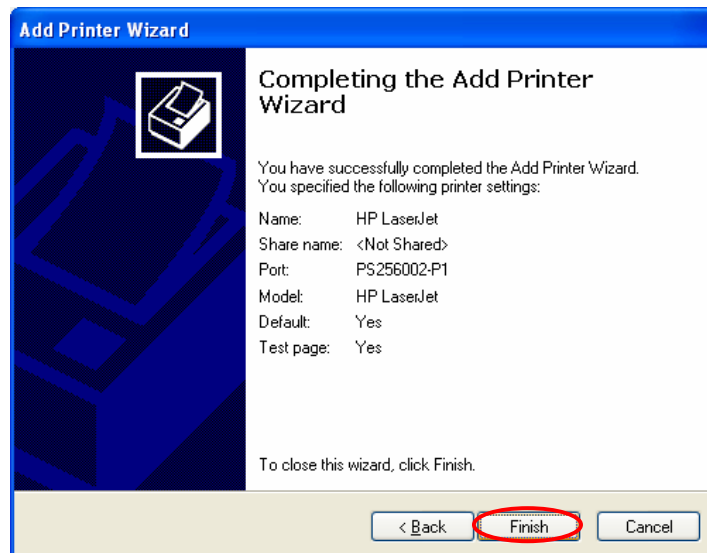
Step7. Name your printer and setup the default printer, click “Next”.



Step8. Choose to print the test page or not. It is recommended to print a test page. Click “Next”.



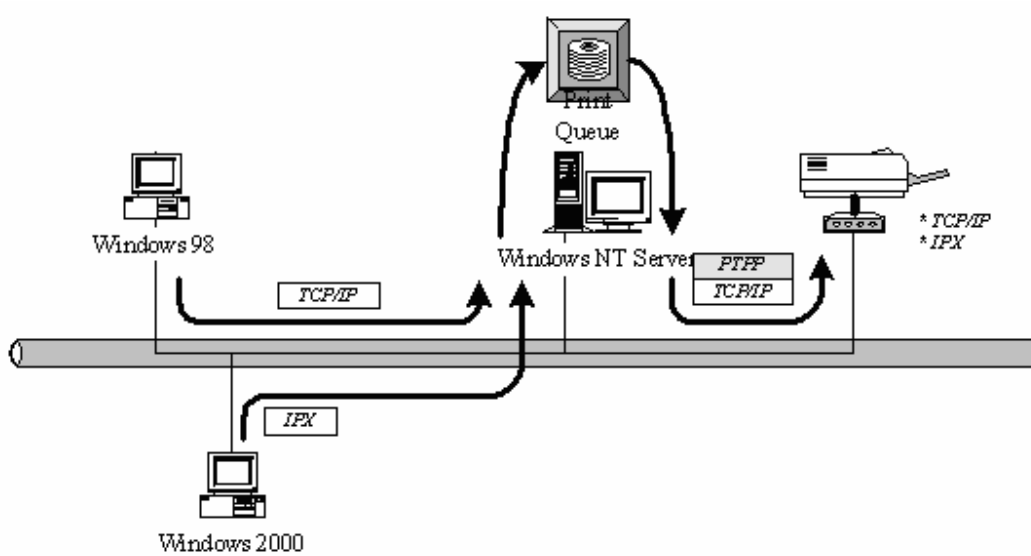
Step9. You have added the printer to the PC successfully. The information of the printer is displayed in the windows. Click “Finish”.



## **4. Windows 2000 Network**

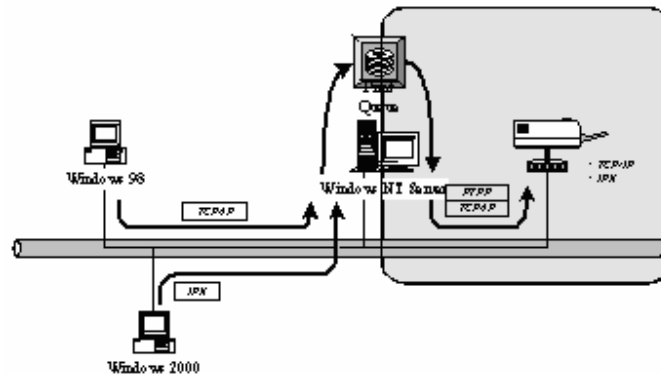
## 4.1 System Architecture

In Windows network environment, other than the Peer-to-Peer network printing architecture described in the previous chapter, we also offer the Server-Based Printing architecture for Windows 2000. Only one Windows 2000 is required to have Windows PTPP (Peer-to-Peer Printing) driver installed and share the printing service on the network. Other network users can simply connect to the server and access the shared printer (see below).



## 4.2 Windows 2000 Installation and Setup

Please follow the procedures described below for installation and construct a peer-to-peer connection (PTPP) between Windows 2000 and Printer server.



Step1.

If this is your first time installing printer server, please install the administrator software on Windows 2000 first. Refer to section 3.2 for installation instructions.

If your network has already installed a working printer server and your Windows 2000 has not yet installed the PTPP driver, please install the client software. Refer to section 3.4 and 3.5 for installation instructions.

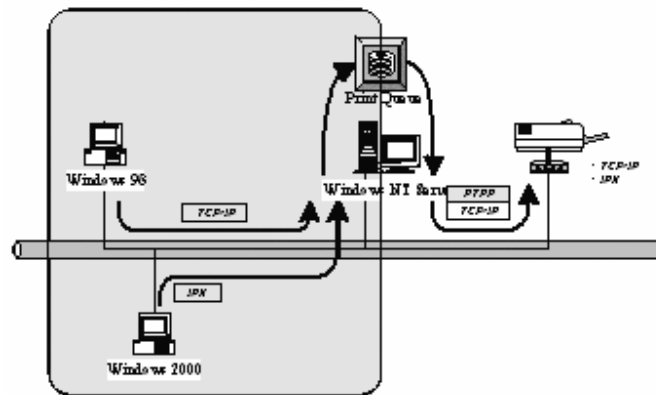
Step2.

Please add/configure the Peer-to-Peer Printing of the Windows 2000 network printer and verify that you can print from Windows 2000 to the printer server by the installed PTPP driver.

Step3.

Share the above server's printer to the network by performing the standard Windows printer sharing process.

### 4.3 User Installation and Setup



After server side's installation is completed, client side will be able to find the server's shared printer in Network Neighborhood. You only need to perform Window's standard **Add New Printer** procedure, select **"Network Printer"** shown in the screen below, and complete the configurations afterwards to access the shared printer.



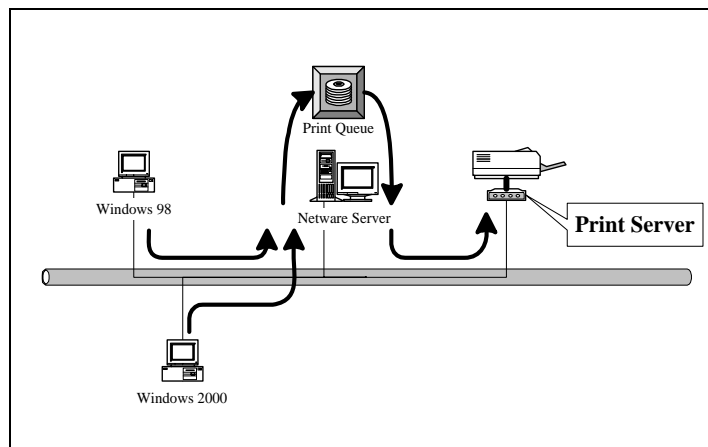


## **5. NetWare Network**

## 5.1 System Architecture

We implemented NetWare printer sharing functionality into the printer server itself, thus allowing one or more printers attached by a printer server to be connected to the network. We have developed the printer server to support NetWare printer server.

Embedded printer server, which emulates the “queue management functionality” of NetWare printer server, PSERVER program running on the NetWare server. A user first prints a job at a workstation, the job is routed to a NetWare server, the NetWare server stores the job in a print queue and then the printer server gets the print job from the queue to printers.



Compare with NetWare printing functionality, the advantages of embedding the NetWare network printing functionality in the printer server include:

- Installation is easier and quicker.
- Network management is easier.
- Printing performance is enhanced.
- Relieve NetWare file server's burden.
- Relieve the need of a workstation running the remote printer utility.
- Improve productivity by locating the printer near the workgroup.

Each printer server should log into a NetWare server before servicing the print jobs. Each printer server will occupy a user account with which it can log into the NetWare server.

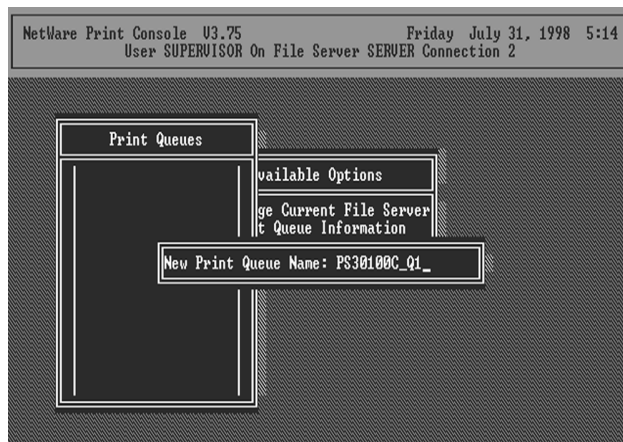
## 5.2 NetWare 3.x/4.x/5.x Installation & Setup

Once your printer server is connected to your Ethernet network, you can set it up for use with your networking software.

### 5.2.1 Installation Using PCONSOLE

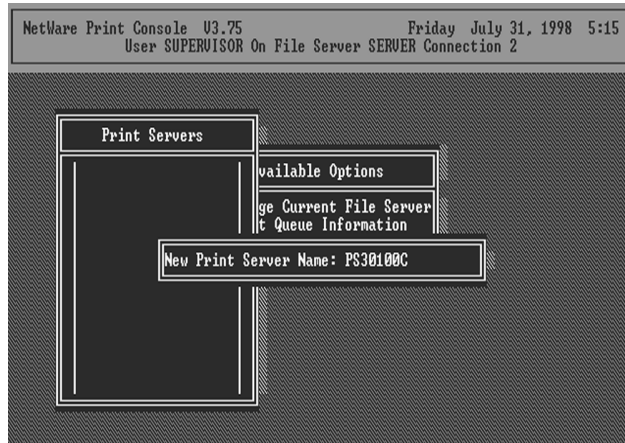
#### 5.2.1.1 Configuring as Printer server Mode

1. Run the NetWare PCONSOLE program.
2. Change the current file server, if necessary, using the Change Current File Server menu selection.
3. Choose the Print Queue Information menu selection.
4. Press the Insert key to add a new print queue.
5. Type in a print queue name, such as "PQ" or "Q1".

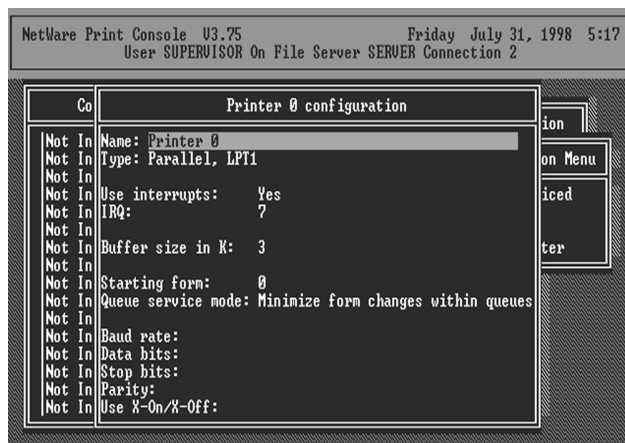


6. You have now successfully created the print queue that your printer server will serve. Press the Escape key until the Available Options main menu is displayed.
7. Select Printer server Information.

8. Press the Insert key to add a new NetWare printer server object. The printer server name can be identical to the PSxxxxxx name printed on the label of the printer server.



9. Press Enter to select the newly created printer server.
10. Select Printer server Configuration.
11. Select Printer Configuration.
12. Select Printer 0 (or Printer 1, Printer 2), and press Enter, then select LPT1 (or LPT2, LPT3) in the Type field. If your printer server is with only one port, you do not need to configure this Type field.



13. Press Escape, and answer Yes to the Save Changes question.

14. Select Queues Serviced by Printer, then select Printer 0 (or Printer 1, Printer 2) and press Enter.
15. Press *Insert* and add your newly created print queue to the list of queues serviced by the printer. Enter a priority number for the queue service, or press Enter to accept the default.



16. Repeatedly press Escape to exit the PCONSOLE program.
17. Reset the printer server to have the changes take effect.

**NOTE:** If the printer server you have is with multiple printer connectors, you may create multiple print queues and printer objects.

Your printer server should now be ready to use. You should be able to redirect printing to your printer server using a CAPTURE command such as the one shown in the previous section.

## **6. UNIX System Network**

## **6.1 Introduction**

The printer server is available for TCP/IP printing by Unix LPD (Line Printer Daemon) protocol. The LPD protocol originated with Unix release is based on the BSD version of Unix and supported under most versions of Unix.

This chapter explains how to configure the printer server for TCP/IP operation, and how to modify configuration files on your Unix system to allow printing to the printer server. The configuration examples in this manual follow the syntax for BSD based Unix systems. Please refer to the related system documentation for the correct syntax of your systems.

To configure the printer server for LPD printing, perform the procedures below:

1. Enable Printer server's TCP/IP Support.
2. Set up Printer server's IP address.
3. Verify Printer server's IP Address.
4. Configure remote LPD printing on the host.
5. Print a test page.

In the next sections, we will describe these five procedures step by step.



## **6.2    *Enable Printer server's TCP/IP Support***

The default configuration of the printer server is with TCP/IP support enabled. Anyway, you can configure the printer server to enable TCP/IP support using the configuration program.

## **6.3 Setup Printer server's IP Address**

The printer server must have a unique IP address in order to be recognized by the network.

You can set up the IP address on the various Unix systems using any one of the following methods:

1. DHCP (Dynamic Host Configuration Protocol)
2. BOOTP (Bootstrap Protocol)

The printer server will use the last three methods to obtain its IP address automatically if its IP address is configured as Auto (0.0.0.0).

### **6.3.1 DHCP**

There are many Unix systems that support DHCP protocol, and the procedures to configure the DHCP server database are different. This manual does not describe the DHCP server configuration on the Unix systems. It is highly recommended that the DHCP server should be located on the same network as the printer server.

### **6.3.2 BOOTP**

If you have the BOOTP daemon, `bootpd`, running on your UNIX system that is accessible by the printer server, you can use the BOOTP protocol to set up the IP address of the printer server. We recommend that the BOOTP server should be located on the same subnet as the printer server. If you use Network Information Services (NIS) in your system, you may need to rebuild the NIS map with the BOOTP services before doing the following BOOTP configuration. To rebuild the NIS map, please refer to your system documentation.

To configure the IP address data for the BOOTP server, you will need to log in the host of BOOTP server as the superuser (`root`). Perform the following steps to add address entries,

1. Optionally, assign a name corresponding to the printer server's IP address. You can add this address to the `/etc/hosts` file, by adding a line such as:

```
203.66.191.12    pserver
```

2. Add an entry to the host's /etc/bootptab file, similar to the following:

```
hostname:\  
  
:ht=1:\  
  
:ha=print_server_ethernet_address:\  
  
:ip=print_server_ip_address:
```

Lines should be indented with tabs.

Where hostname is the device name of a printer server, the ht=1 tag specifies the hardware type is Ethernet, the ha= tag specifies the Ethernet address of a printer server, which is the Node ID located on the printer server. The ha tag must be preceded by the ht tag. The ip= tag should correspond to the IP address you want to assign to the printer server.

For example, a printer server with the following configuration:

Node ID: 0000B4010101 (this implies Ethernet

address is 0000B4010101),

IP address: 203.66.191.12

The entry for this printer server in the /etc/bootptab file should be:

```
PS010101:\  
  
:ht=1:\  
  
:ha=0000B4010101:\  
  
:ip=203.66.191.12:
```

## **6.4 Verify Printer server's IP Address**

To verify that your printer server is responding to the newly assigned IP address using a PING command:

```
ping ip-address
```

## 6.5 **Configure Remote LPD Printing on the Host**

The procedure you use to configure your Unix host(s) to allow printing to your network remote printer server varies between different varieties of Unix. The procedure below can be used for Unix variants that are related to BSD Unix, such as SunOS or Linux. For other versions of Unix, consult your system documentation, keeping in mind that:

1. The printer server should be treated as a BSD networked printer server host.
2. The host name should be the name (or IP address) that you have assigned to the printer server.
3. The printer name (or queue name) on the remote host should be `lpt1`, `lpt2` or `lpt3`, the name of the printer port on the printer server.

You will need to perform the tasks below, logged in as the superuser (root). To configure your Unix host for printing,

1. Optionally, assign a name corresponding to the printer server's IP address. You can add this address to the `/etc/hosts` file, by adding a line such as:

```
203.66.191.186      pserver
```

2. Create a spool directory for the printer in the same directory where spool directories are normally kept on the machine, such as `/var/spool` or `/var/spool/lpd`:

```
mkdir /var/spool/lpd/pserverd
```

```
chown daemon /var/spool/lpd/pserverd
```

```
chgrp daemon /var/spool/lpd/pserverd
```

```
chmod 775 /var/spool/lpd/pserverd
```

3. Add an entry to the host's `/etc/printcap` file, similar to the following:

```
printer-name:\  
  
:lp=\  
  
:rm=203.66.191.186\  
  
:rp=lpt1\  
  
:lf=/var/spool/lpd/pserverd.log\  
  
:sd=/var/spool/lpd/pserverd\  
  
:mx#0:
```

Lines should be indented with tabs. More than one printer name can be used, with variants separated by vertical bars (name1|name2).

The `rm=` entry should correspond to the IP address you have assigned to the printer server. You can also use a host name if you have assigned one in the `/etc/hosts` file.

The `sd=` entry should correspond to the spool directory you created in the previous step.

The `rp=` entry should correspond to the port name of the remote printer. The values should be one of `lpt1`, `lpt2` or `lpt3` depends on the printer port.

The printer server should now be available for printing from your Unix host.

## **7. Configuration Utility**

## 7.1 Introduction

This chapter introduces printer server's system configuration utility in Windows environment. This utility is automatically installed during Windows Administrator Utility installation procedure - refer to section 3.2 and 3.3.

This utility provides the most complete management and configuration functions on the printer server side. This utility only provides configuration functions for printer server itself; it does not include configuration functions for client side or other file server or NetWare server in the network environment.

The Configuration Utility provides the following configuration and management functions:

- **Search Printer server:** Search All Available Printer Servers on the Network.
- **Printer server Status:** Display Printer server Network Status.
- **General Configuration:** General Information of printer server.
- **TCP/IP Configuration:** IP Address and DHCP Server Configuration.
- **NetWare Configuration:** NetWare Printing Configuration.
- **AppleTalk Configuration:** AppleTalk Protocol Setting.
- **Rendezvous:** Allow you to configure the Rendezvous function.
- **SNMP Configuration:** SNMP Information Configuration.
- **SMB:** Configure the SMB Group Name.
- **System Configuration:** Printer server Network Ability Setting and Firmware Upgrade.
- **Wireless Configuration (WPS-9123 only):** Wireless LAN Configuration.



- **Setup Wizard:** Guide You Through All the Settings.
- **Report:** List the Status of All Available Printer servers on the Network.

We will explain each function separately in the following section.

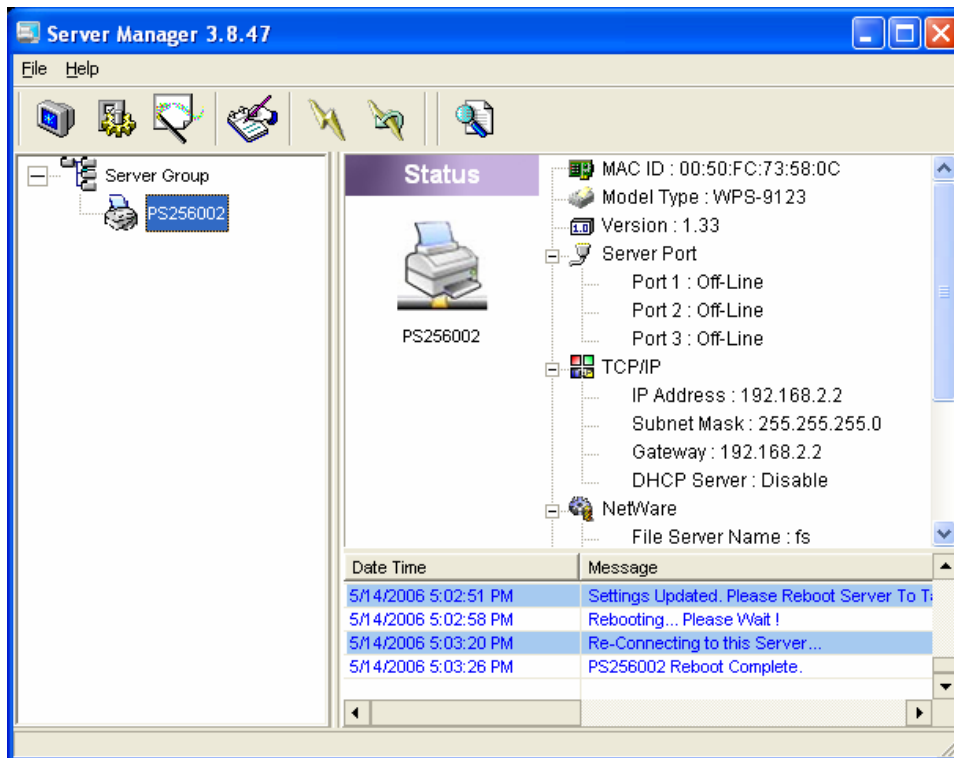
\* Please refer to the below chart for printing type and support OS


### OS VS Protocol

| Printer server | IPP | LPR  | SMB | Bonjour | others |
|----------------|-----|------|-----|---------|--------|
| Win 98SE       | No  | Yes* | Yes | No      |        |
| Win ME         | No  | Yes* | Yes | No      |        |
| Win 2000       | Yes | Yes  | Yes | No      |        |
| Win XP         | Yes | Yes  | Yes | No      |        |
| Linux          | No  | Yes  | No  | No      |        |
| Mac OS         | No  | Yes  | No  | Yes     |        |

\* In Windows 98SE/ME, users have to use Client driver to set the LPR protocol.

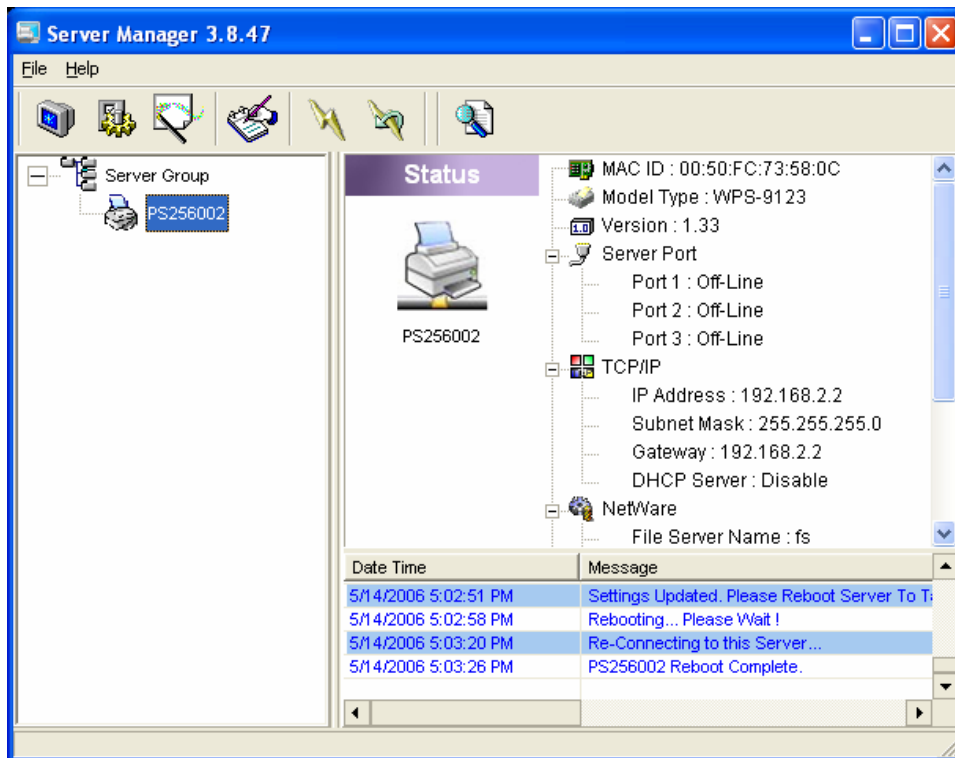
## 7.2 Search for All Available Printer server




Every time when you run printer server's configuration utility, click the "Search" icon  on the tool bar. The configuration utility will delay for several seconds because the utility is using system's available network protocols to search for all printer servers on the network. All available printer servers will be listed under "Printer server Group" on the left side of the window.


You must select the printer server you would like to configure from the list. The system will, at the same time, display the selected printer server's status on the right side of the window.


## 7.3 Status of Printer server



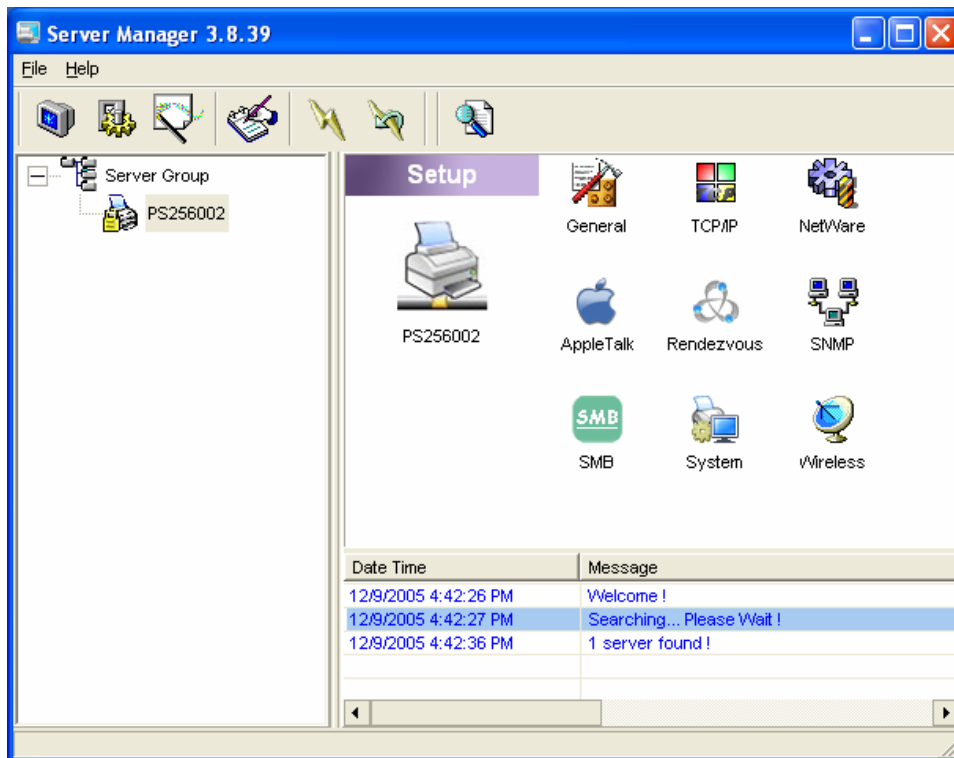
Click "Status" icon  on the tool bar, the status of the current selected printer server will be showed on the right side of the window.


The information of the printer server displayed are MAC ID, Model Type, Firmware Version, status of each printer port, NetWare file server name, NetWare file server polling interval, NetWare printer queue names, IP address, subnet mask, default gateway, AppleTalk printer type, AppleTalk zone and printer server printing ability...etc.

You can refresh the printer server's status by pressing the "Refresh" button .

You can restart the printer server by pressing the "Reboot" button .

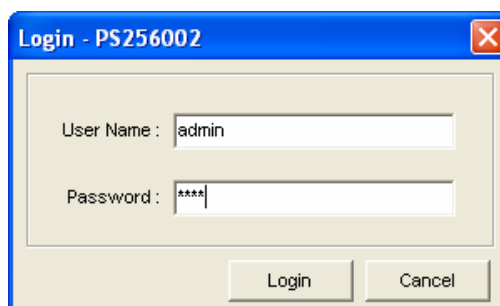
## 7.4 Setup the Printer server



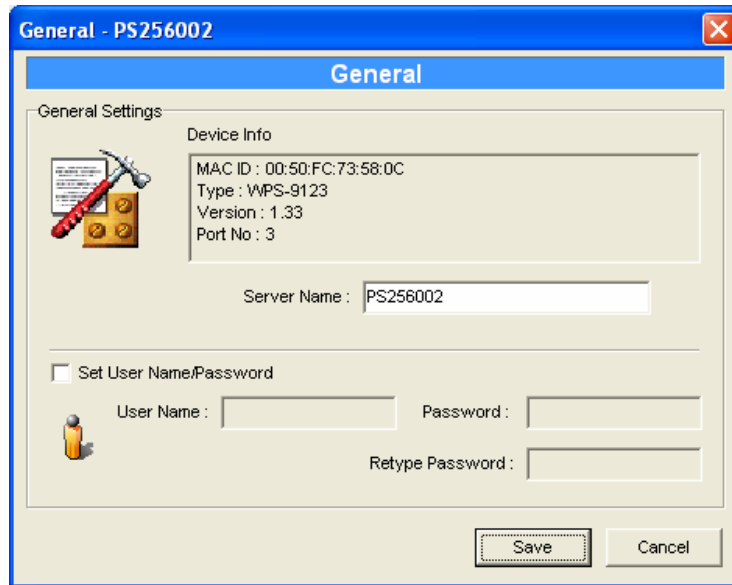
Click "Setup" icon  on the tool bar, the setup items of the current selected printer server will be showed on the right side of the window.

Double click one of the icons to set up the selected printer server. A screen will pop up to verify "User Name" and "Password" of the printer server. The default values are as follows.

- User Name: admin
- Password: 1234



## 7.5 General Configuration



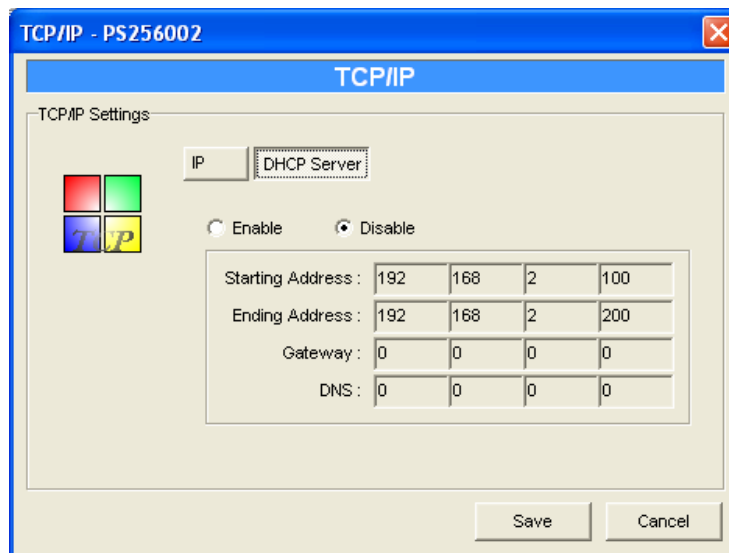
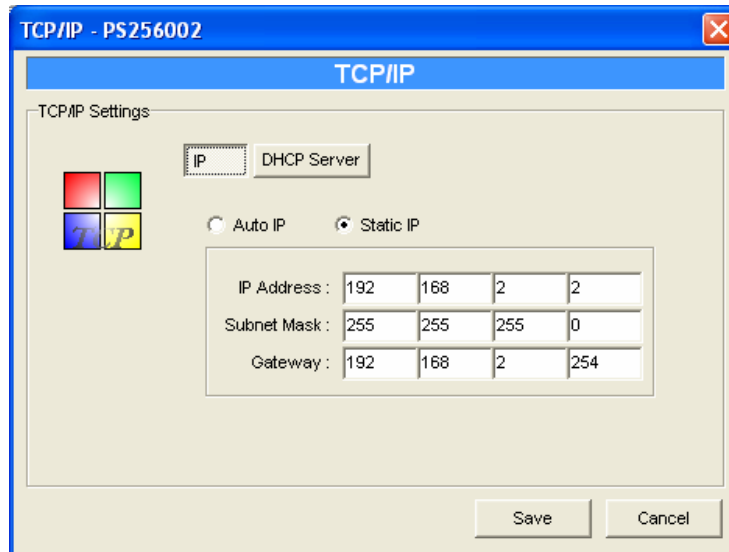
Double Click “General” icon and the General configuration window will pop-up.

You can see basic printer server information in this page. You also can configure the “Printer server Name”, “SMB Group Name”, “User Name” and “Password” here.

**Server Name**, the name of the printer server. You can use this name to identify the printer server when you are searching for the printer server by the administration and client utilities.

**User Name / Password** is used to authenticate the administrator by the Web administration tool.

## 7.6 TCP/IP Configuration



Double Click "TCP/IP" icon and the TCP/IP configuration window will pop-up.

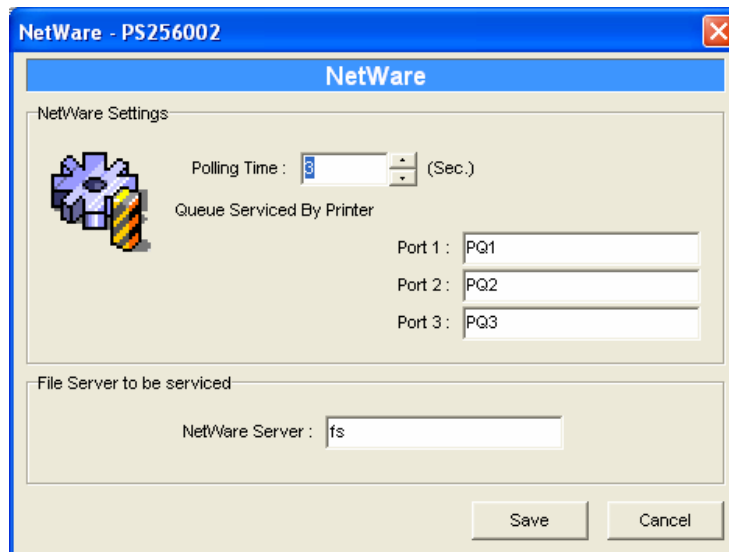
You can configure the printer server to automatically get IP from DHCP server or manually specify static IP. The printer server also has a built-in DHCP server. You can enable this DHCP server and let it manages IP for you.

Click the "IP" button to enter the IP setting page. If you need the printer server to automatically get an IP from DHCP server, select "Auto

IP". You also can select "Static IP" to manually assign "IP Address", "Subnet Mask" and "Gateway" for the printer server.

Click the "DHCP Server" button to enter the DHCP server's setting page. You can "Enable/Disable" the DHCP server and assign a range of IP addresses here. The DHCP server is disabled by default. When "Enable" is selected, you have to configure "Starting Address", "Ending Address", "Gateway", and "DNS". The printer server will assign a unique IP for each client.

## 7.7 Netware Printer server Configuration



Double Click "NetWare" icon and the NetWare configuration window will pop-up.

This printer server supports NetWare Bindery Printing method. The printer server periodically polls the NetWare server printer queues for printing jobs. You have to assign the NetWare server name, printer server polling interval and the name of queue on the NetWare server for each printer port.

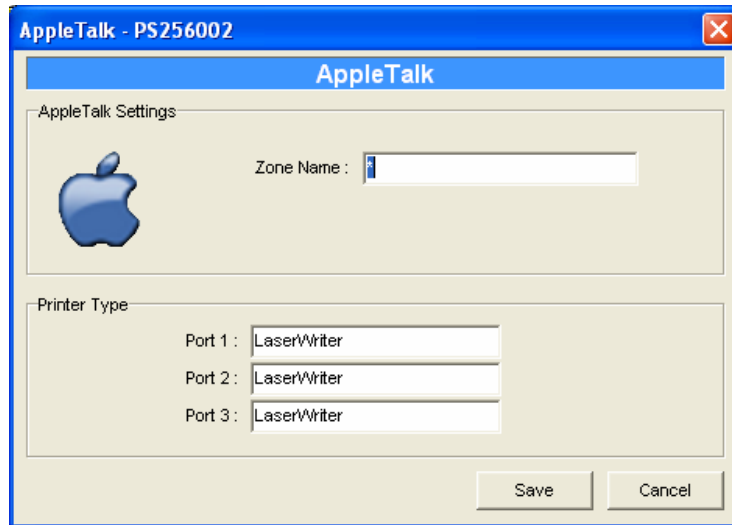
**Polling Time** is the polling interval of the printer server for waiting printing jobs on the NetWare server.

**Queue Serviced by Printer** is the name of the printer queue on the NetWare server. The printer queue keeps all printing jobs waiting on the NetWare server. You have to assign a printer queue for each printer port of this printer server.

**NetWare Server** is the name of the NetWare file server that provides printer queues.



## 7.8 AppleTalk Configuration



Double Click "AppleTalk" icon and the AppleTalk configuration window will pop-up.

AppleTalk is a data communication protocol often used by Macintoshes. The printer server can use these parameters to join the AppleTalk network and share the printer to other AppleTalk workstations. You have to setup the "Zone Name" and "Printer Type" for each printer port of this printer server.

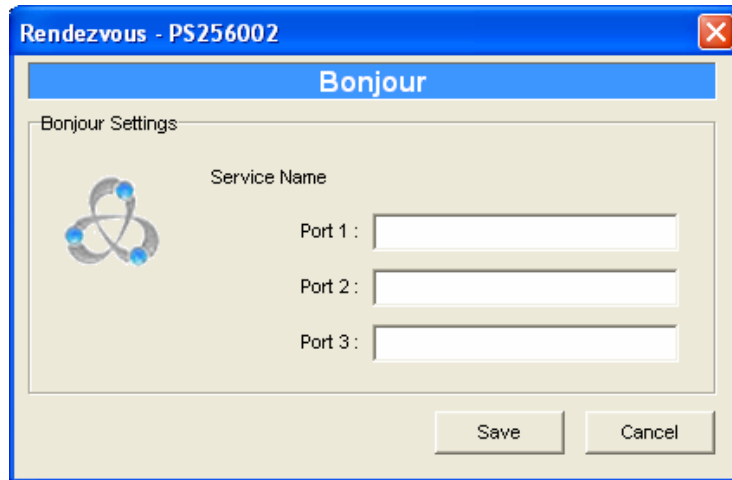
**Zone Name:** Printer server has to join zones of AppleTalk before it can be shared to other workstations. Only workstations in the same zone can share the printer. If you want to share the printer to all workstations in all Zones, you should enter only "\*" in the "Zone Name" field.

**Printer Type,** the type of printer attached to each printer port. You can get the printer type from the manufacturer of the printer.

\* Please refer to printer's user manual for printer type, if default "LaserWriter" does not work.



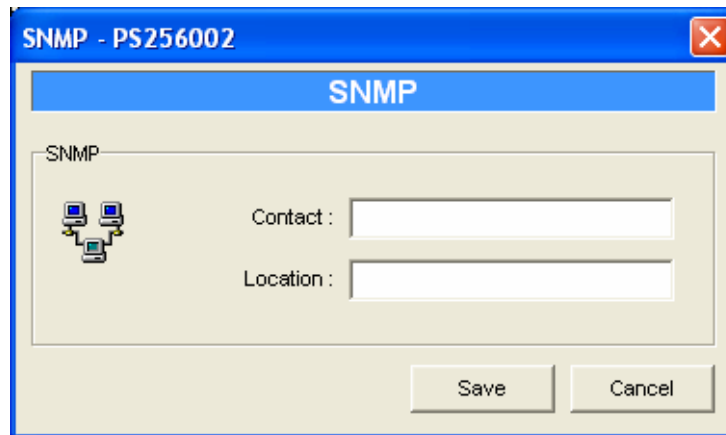
## 7.9 Bonjour Configuration



Bonjour technology ("Rendezvous" was renamed "Bonjour" with the release of Mac OS X v10.4), also known in the industry as Zero Configuration networking, enables automatic discovery of computers, devices, and services on IP networks. It uses industry standard IP protocols to allow devices to automatically find each other without the need to enter IP addresses or configure DNS servers. This technology is used in MAC OS.

**Service Nam** is a name to identify the device on IP network. The Printer server has three printer ports; please designate the unique and friendly service name for each printer connected to one of the three printer ports.

## 7.10 SNMP Configuration

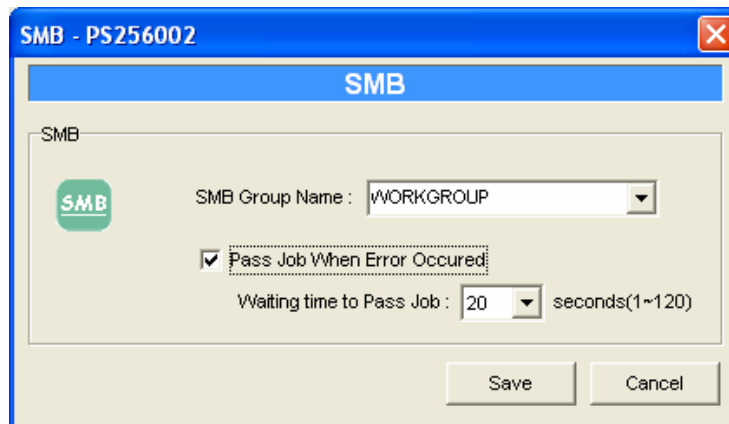


Double Click "SNMP" icon and the SNMP configuration window will pop up.

**Contact:** You can enter the printer server administrator's contact information here. This information will be displayed in the SNMP management tool.

**Location:** You can enter the installed location of the printer server here. This information will be displayed in the SNMP management tool.

## 7.11 SMB Configuration

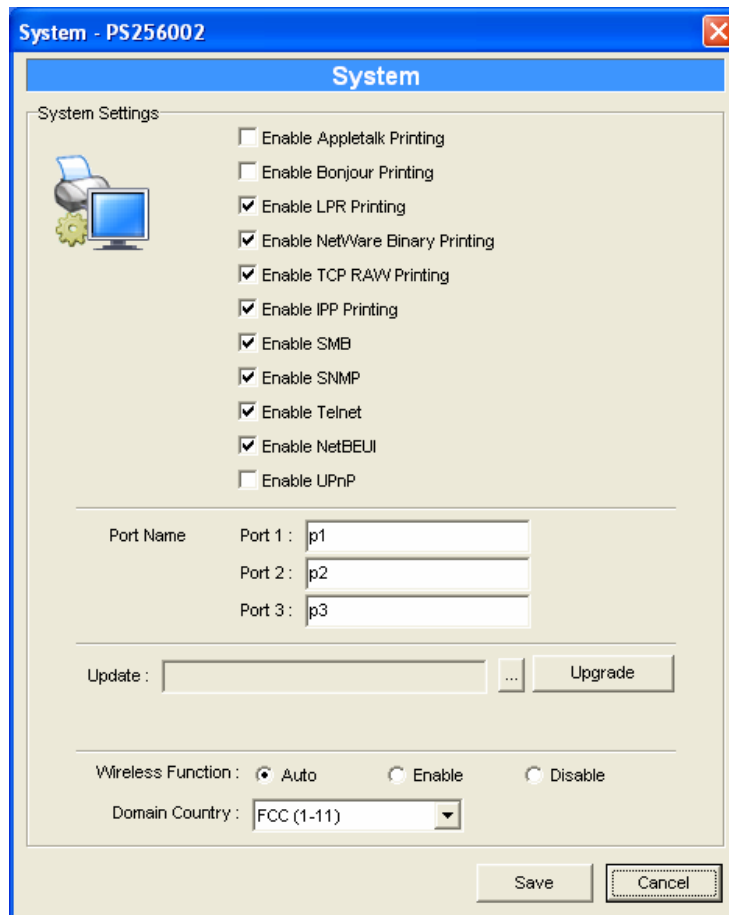


**SMB Group Name**, the name of SMB group that this printer server belongs to. All PC should join the same group before they can use this printer server by SMB protocol.

**Pass Job when Error Occurred:** When the printer is interrupted because of paper out or off line while printing, user can enable this function and set the interval time to bypass the current printing job. Or the printing document will not be printed completely or with unformatted messages.

**Waiting Time to Pass Job:** The range is from 1 to 60 seconds. By default, the parameter is enabled and the default waiting time is 20 seconds.

## 7.12 System Configuration



Double Click "System" icon and the System configuration window will pop-up.

In the System configuration page, you can select to enable/disable each printing or management protocol, assign name for each printer port of this printer server, upgrade the new firmware for this printer server, and enable/disable wireless function. Note: Wireless function available for WPS-9123 only.

**Port Name** is the name of the printer port. The Printer server has three printer ports, two USB 2.0 ports and one parallel port. Each printer port has to be assigned a name. Then you can use this name to access the printer port. By default, the printer port name is "p1" for port 1, "p2" for port 2 and "p3" for port 3.

**Upgrade:** You can use this “Upgrade” tool to update the newest firmware of the printer server. Click “” button and select the correct firmware in your PC. After selecting the firmware file, click the “Upgrade” button to finish the firmware update process.

Note that before you upgrade the firmware please make sure that the IP Address settings of the MFP Server are in the same network as your computer.

**Wireless Function (WPS-9123 only):** You can select “Auto”, “Enable” or “Disable” to manually configure the wireless function.

- Auto – “Auto” is the default setting of the printer server. At this mode, the printer server will automatically decide to enable or disable the wireless function. When the printer server starts up, it will auto-detect if the LAN port is connected to an active network by an Ethernet cable. If this is the case, the printer server will run in Ethernet mode. If the printer server is not connected to an active network by Ethernet cable, the printer server will run in wireless LAN mode.

Users can plug the Ethernet cable to the printer server at the first, after configuring the printer server features and wireless settings; they can unplug the Ethernet cable to enable the wireless connection. It makes the configuration much easier without creating the wireless connection in advance.

- Enable – Enable wireless function only, the printer server’s wireless LAN will be always enabled and Ethernet will be always disabled.
- Disable – Disable the wireless function, the printer server’s wireless LAN will be always disabled and Ethernet will be always enabled.

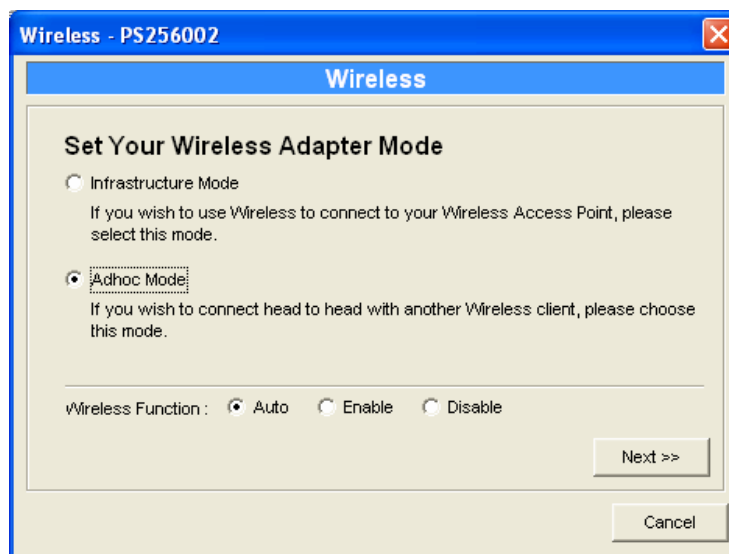
**Domain Country:** The wireless channels are different from country to country. Generally, the channels are from 1 to 11 in USA and from 1 to 13 in Europe. The Domain Country setting is for you to set the available channels according to your location.

## 7.13 Wireless Configuration (For WPS-9123 only)

If you want to use the printer server through wireless LAN, please set up the printer server through Ethernet first and make sure your wireless LAN setting is correct. After setting the wireless LAN, unplug the Ethernet cable and restart the printer server, then you can start to use the printer server through wireless LAN. If the wireless configuration does not work, please plug the Ethernet cable again, restart the printer server and configure the printer server through Ethernet until the wireless LAN settings are correct.

The default settings of the printer server wireless function are as follows.

- Mode: Ad-Hoc
- SSID: Default
- Channel: 11



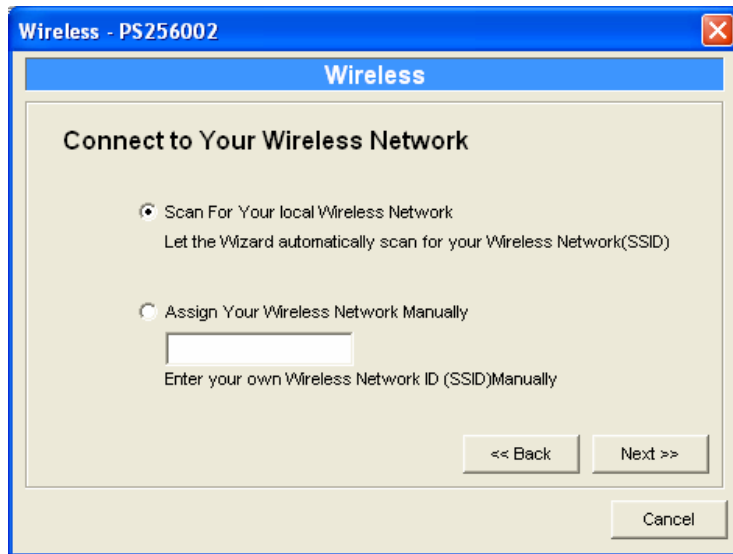
Double Click "Wireless" icon and the wireless configuration window will pop-up.

If you use access point to build up wireless network, you have to select "Infrastructure Mode". If you do not have any access point and want to use peer-to-peer connection to build up wireless network, you have to select "Ad-Hoc Mode".

After selecting the operation modes of the wireless function, click "Next" to go to further detailed configuration.

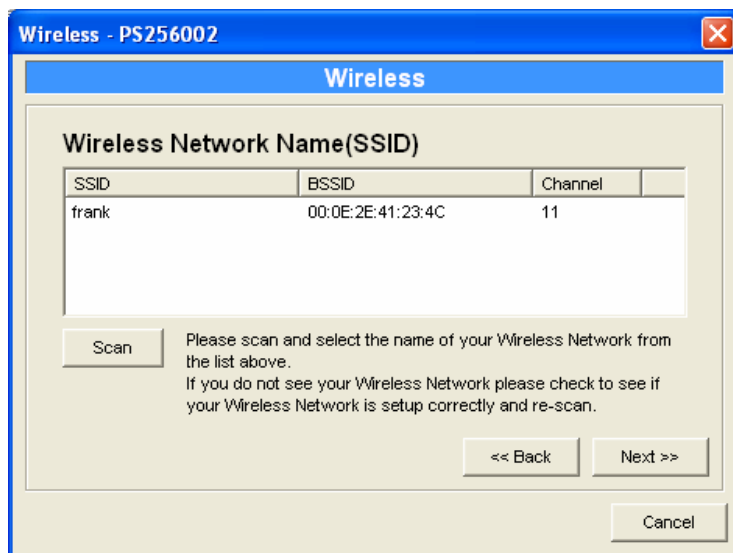


### Infrastructure Mode:



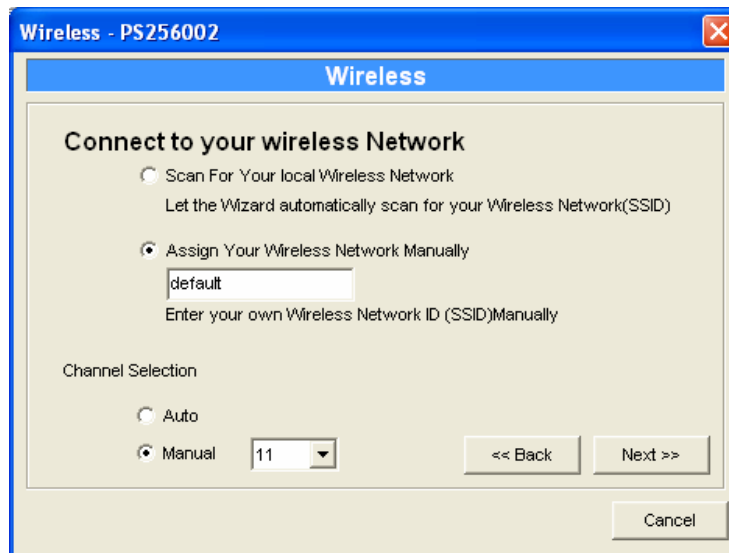
In the Infrastructure mode, you have to let the printer server associate with an access point. You let the printer server scan for an available access point automatically or manually assign the SSID of the access point you want to use.

If you select to let the printer server scan for an available access point, the following window will pop up.



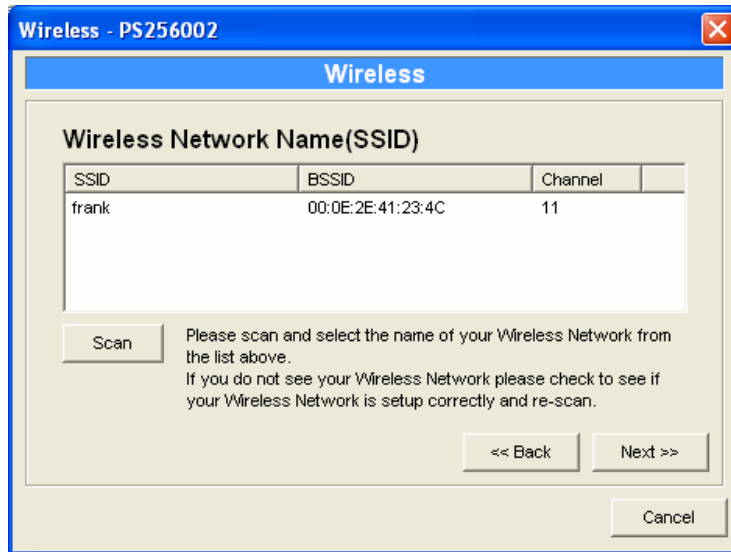
The list is the scanned available access points. Select an access point in the list and click "Next". If you cannot find the access point that you want to use, click "Scan" to let the printer server scan again.

**Ad Hoc Mode:**



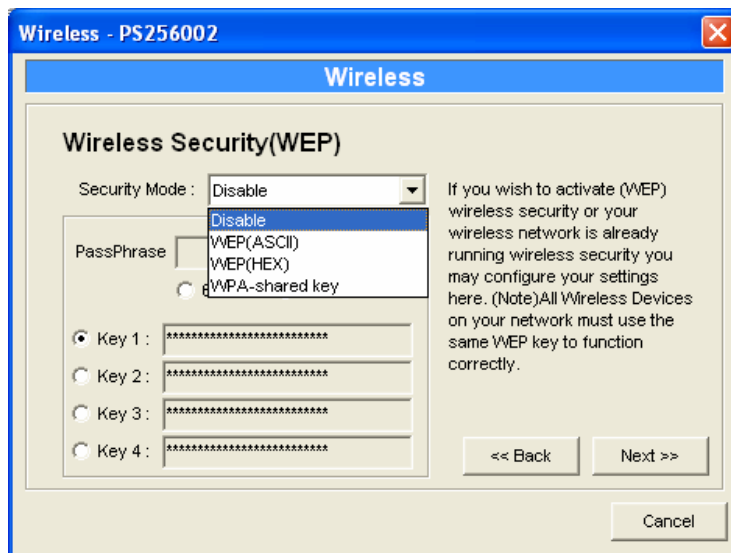
In the Ad-Hoc mode, you can let the printer server automatically associate with other wireless station or manually assign the SSID of your wireless network. You can let the printer server automatically select the channel that is the same with the peer or manually assign a channel.

If you select to let the printer server scan for an active wireless station, the following window will pop up.



The list is the scanned active wireless stations. Select a wireless station in the list and click “Next”. If you cannot find the wireless station that you want the printer server to communicate with, click “Scan” to let the printer server scan again.

Both “Infrastructure” and “Ad-Hoc” mode have to go through the following procedure:



This printer server supports WEP and WPA-PSK security mode. If you want to use WEP encryption to protect your wireless network, you have to select “WEP(ASCII)” or “WEP(HEX)”. If you want to use WPA-PSK, you have to select “WPA-shared key”. The wireless security setting should be the same with other wireless devices in the same network.

## WEP Security Mode:

The image displays two screenshots of the 'Wireless Security(WEP)' configuration window. The top window shows the 'WEP(ASCII)' mode selected in the 'Security Mode' dropdown. It features a 'PassPhrase' text box, radio buttons for '64 bit' and '128 bit' (with '128 bit' selected), and four 'Key' fields (Key 1 through Key 4) with empty text boxes. The bottom window shows the 'WEP(HEX)' mode selected. It has the same layout, but the four 'Key' fields are filled with asterisks. Both windows include a 'PassPhrase' field, a 'Security Mode' dropdown, and a note: 'If you wish to activate (WEP) wireless security or your wireless network is already running wireless security you may configure your settings here. (Note)All Wireless Devices on your network must use the same WEP key to function correctly.' Navigation buttons '<< Back', 'Next >>', and 'Cancel' are present at the bottom of each window.

You can select “64 bit” or “128 bit” length and “Hexadecimal” or “ASCII” format for the encryption key. Longer key length can provide stronger security but worth communication performance.

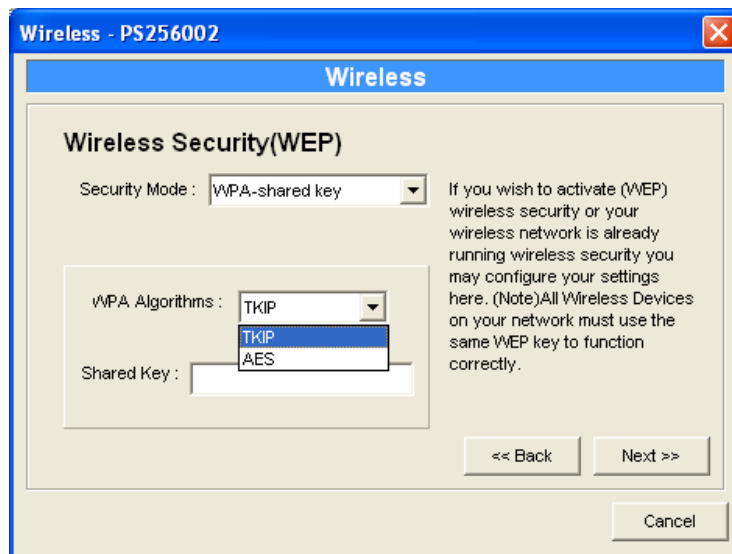
Enter four key values by following the rules below and select one key as the default key.

- PassPhrase – A passphrase simplifies the WEP encryption process by automatically generating the WEP encryption keys for the printer server. This setting is only valid when the security mode is in “WEP(HEX)”.

- Key 1 to Key 4 – If the key length is 64-bit, enter 10-digit Hex values or 5-digit ASCII values as the encryption keys. For example: “0123456aef” or “Guest”.

If the key length is 128-bit, enter 26-digit Hex values or 13-digit ASCII values as the encryption keys. For example: “01234567890123456789abcdef” or “administrator”.

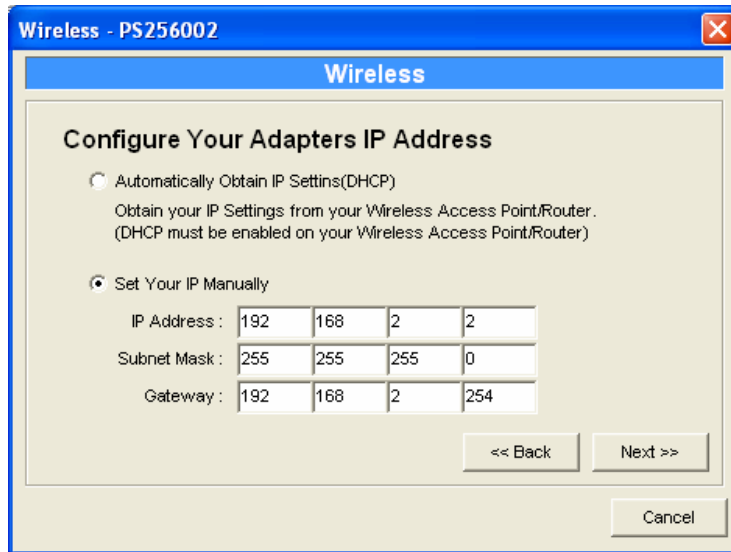
#### WPA-shared key Security Mode:



When “WPA-shared key”, also named “WPA-PSK” requires users to select the advanced encryption methods, i.e. TKIP or AES and enter a set of shared key.

- TKIP – TKIP (Temporal Key Integrity Protocol) changes the temporal key every 10,000 packets. This insures much greater security than the standard WEP security.
- AES – AES has been developed to ensure the highest degree of security and authenticity for digital information and it is the most advanced solution defined by IEEE 802.11i for the security in the wireless network.
- Shared Key – Enter 8 to 63 digits of ASCII format to be the key for the authentication within the network.

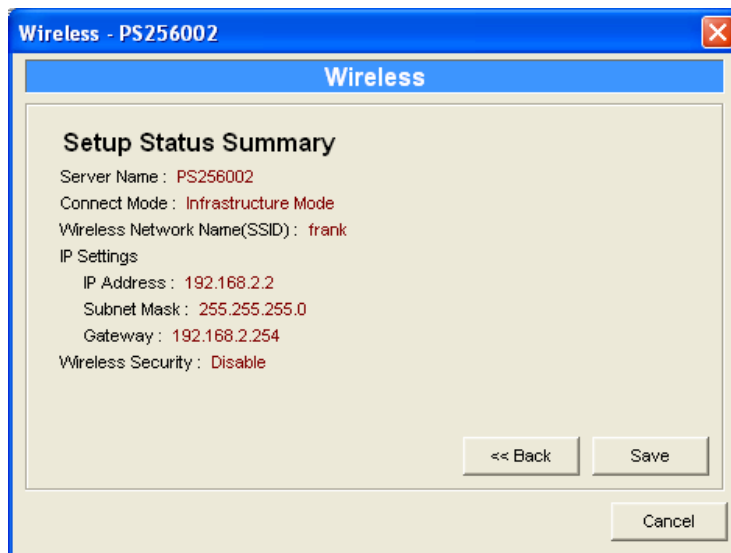
When you finish configuring the wireless security, click “Next” to go to next step.



You can select to let the printer server automatically obtain IP settings with DHCP client or manually assign the IP settings.

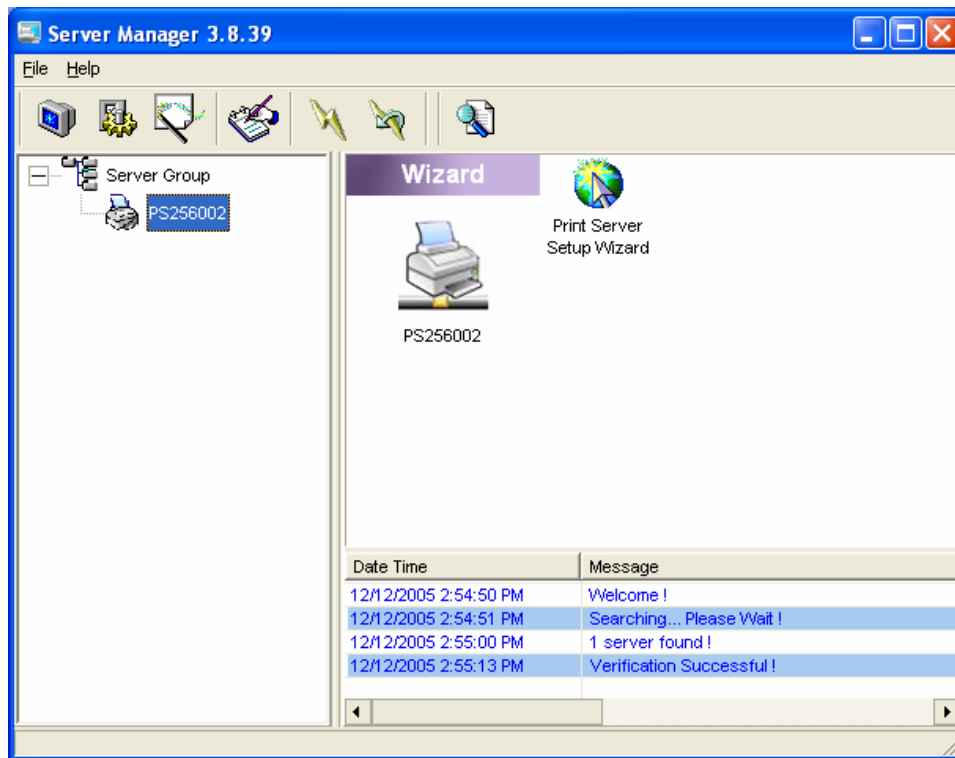
If you manually assign the IP settings, you have to enter IP address, subnet mask and default gateway address.


When you finish configuring the IP settings, click "Next" to confirm the IP Address configuration.



Click "Save" to save the wireless configuration.

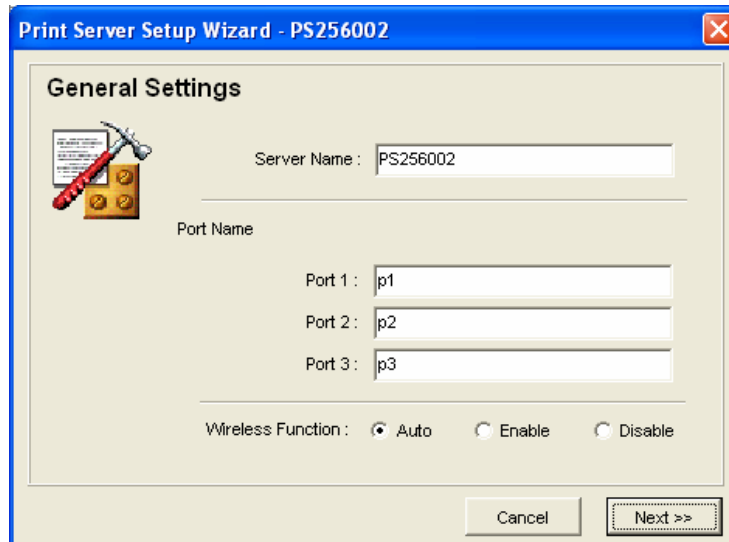
## 7.14 Wizard



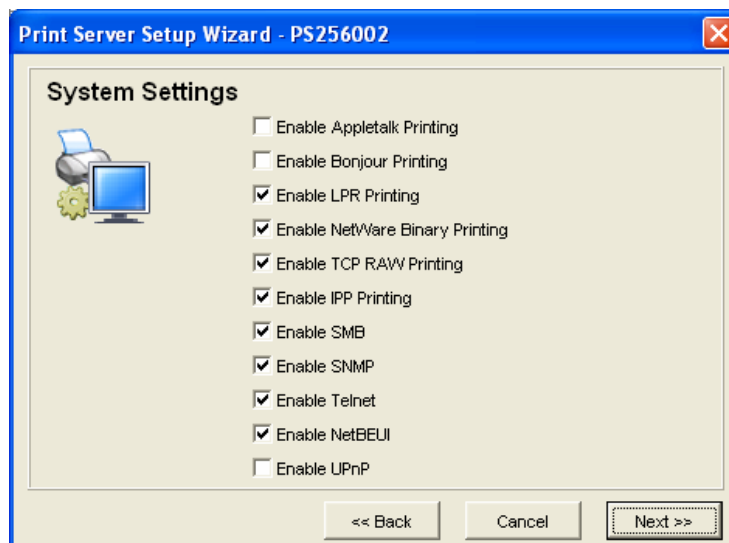
Click "Wizard" icon  on the tool bar, the setup wizard item of the current selected printer server will be showed on the right side of the window.

Double click the "Printer server Setup Wizard" the setup wizard will guide you through all the setup process.

Step 1: Set up the name of this printer server, and the port name for each printer port.

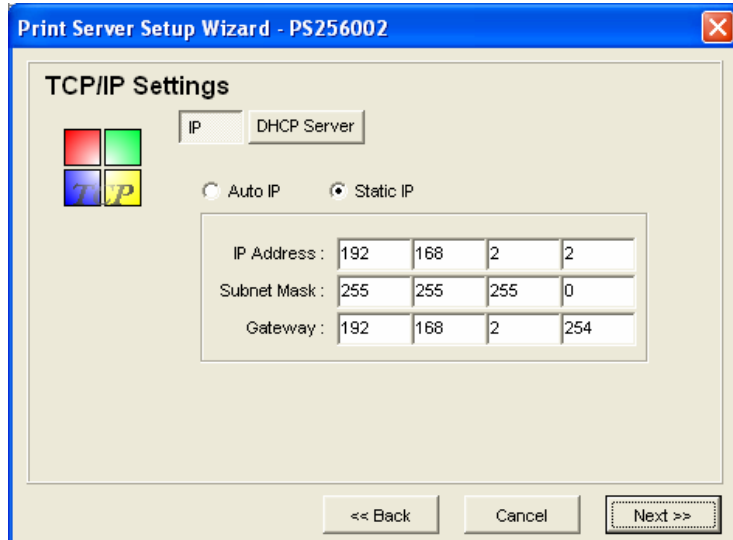


Step 2: Select to enable required printing protocol. Please refer to section 7.12 for detail information.





Step 3: Setup the IP of this printer server and the DHCP server. Please refer to section 7.6 for detail information.



Step 4: Setup the NetWare printing. Please refer to section 7.7 for detail information.

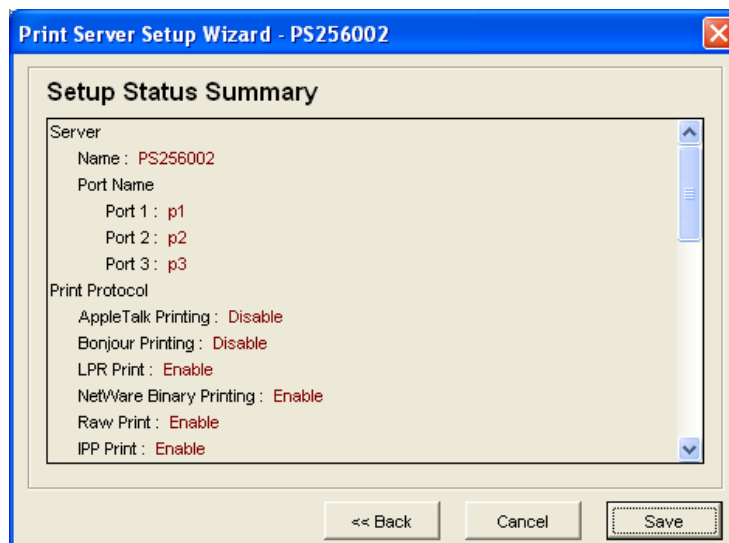


Step 5: Select the Wireless Adapter mode and complete wireless LAN settings. The other procedures are the same with "Wireless" Setting

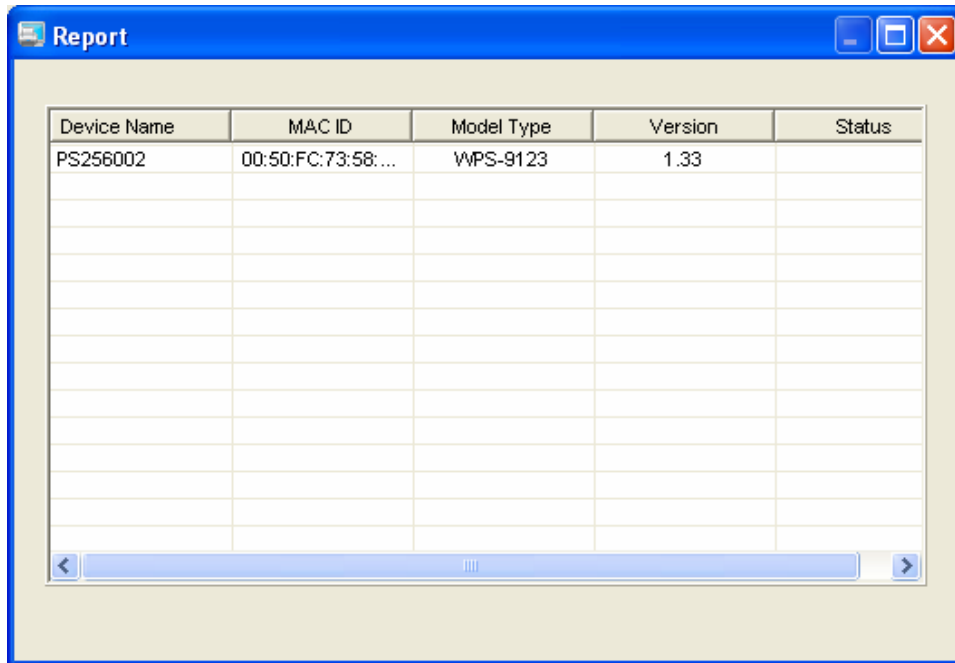
in "Setup" screen. Please refer to section 7.13 for detail information.  
Note: This function available for WPS-9123 only



Step 6: Click "Save" to finish setting.




## 7.15 Report



The screenshot shows a window titled 'Report' with a blue title bar and standard window controls. The main content is a table with five columns: 'Device Name', 'MAC ID', 'Model Type', 'Version', and 'Status'. The first row contains the following data: 'PS256002', '00:50:FC:73:58:...', 'WPS-9123', '1.33', and an empty status field. Below the table is a horizontal scrollbar.

| Device Name | MAC ID             | Model Type | Version | Status |
|-------------|--------------------|------------|---------|--------|
| PS256002    | 00:50:FC:73:58:... | WPS-9123   | 1.33    |        |
|             |                    |            |         |        |
|             |                    |            |         |        |
|             |                    |            |         |        |
|             |                    |            |         |        |
|             |                    |            |         |        |
|             |                    |            |         |        |
|             |                    |            |         |        |
|             |                    |            |         |        |
|             |                    |            |         |        |
|             |                    |            |         |        |
|             |                    |            |         |        |
|             |                    |            |         |        |
|             |                    |            |         |        |
|             |                    |            |         |        |
|             |                    |            |         |        |

Click “Report” icon  on the tool bar, the Report window will pop up.

The report lists basic information of all available printer servers on the network. The information includes Device Name, MAC ID, Model Type and Firmware Version of printer server.

## **8. Web Management**

## **8.1 Introduction**

Printer server can be configured and managed on the Web. Through Local Area Network, or even Internet, administrator can easily configure and manage printer server's various main functions in browsers. Simply enter printer server's IP address into your browser's address field to manage a printer server by printer server's built-in Web Server.

The default IP Address, User Name and Password settings of the Printer server are as follows.

- IP Address: 192.168.2.2
- User Name: Admin
- Password: 1234

## 8.2 Login

You may use any Web Browser to review the status or configure the settings of the printer server. After entering the IP address of the printer server, a login page display. You have to enter correct “User Name” and “Password” before going to the Web Management pages.

Notes: Default User Name is “admin”, default password is “1234”.



Connect to 192.168.2.2

Default password:1234

User name: admin

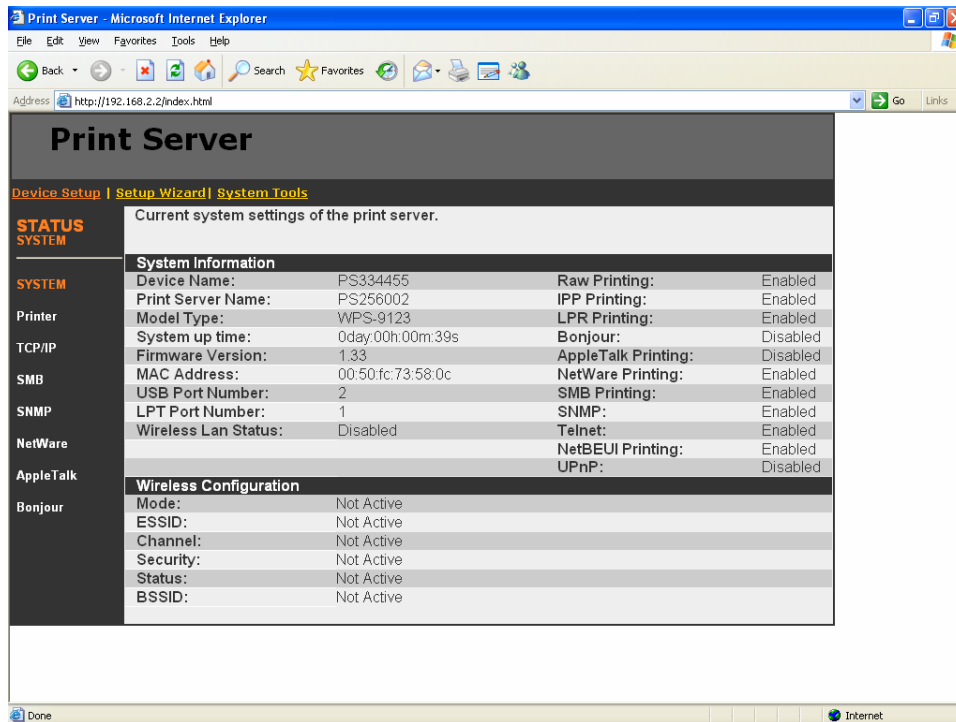
Password: ●●●●●

Remember my password

OK Cancel

## 8.3 Device Status

### 8.3.1 System



The screenshot shows a web browser window titled "Print Server - Microsoft Internet Explorer" displaying the "Print Server" web interface. The address bar shows "http://192.168.2.2/index.html". The page content includes a navigation menu with "Device Setup", "Setup Wizard", and "System Tools". The main content area is titled "Print Server" and "Current system settings of the print server." It features a "STATUS SYSTEM" sidebar and a table of system information.

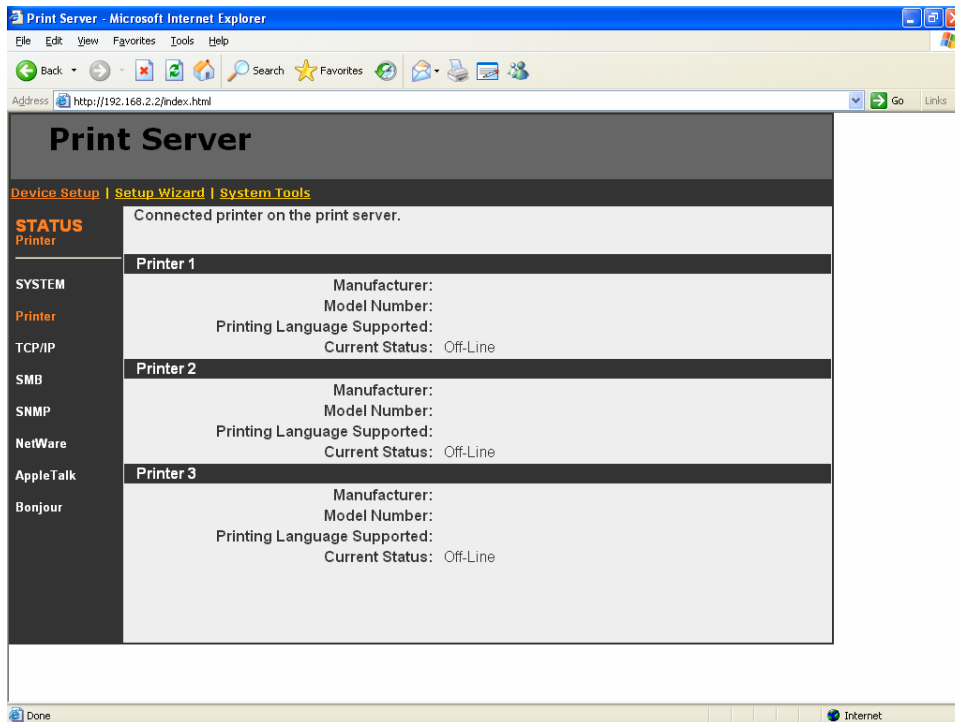
| System Information   |                   |                     |          |
|----------------------|-------------------|---------------------|----------|
| Device Name:         | PS334455          | Raw Printing:       | Enabled  |
| Print Server Name:   | PS256002          | IPP Printing:       | Enabled  |
| Model Type:          | WPS-9123          | LPR Printing:       | Enabled  |
| System up time:      | 0day:00h:00m:39s  | Bonjour:            | Disabled |
| Firmware Version:    | 1.33              | AppleTalk Printing: | Disabled |
| MAC Address:         | 00:50:fc:73:58:0c | NetWare Printing:   | Enabled  |
| USB Port Number:     | 2                 | SMB Printing:       | Enabled  |
| LPT Port Number:     | 1                 | SNMP:               | Enabled  |
| Wireless Lan Status: | Disabled          | Telnet:             | Enabled  |
|                      |                   | NetBEUI Printing:   | Enabled  |
|                      |                   | UPnP:               | Disabled |

| Wireless Configuration |            |
|------------------------|------------|
| Mode:                  | Not Active |
| ESSID:                 | Not Active |
| Channel:               | Not Active |
| Security:              | Not Active |
| Status:                | Not Active |
| BSSID:                 | Not Active |

System Information includes "Device Name", "Printer server Name", "Model Type", "System Up Time", "Firmware Version", "MAC Address", "Wireless LAN configuration" and the protocols enabled status, etc. Note: Wireless LAN configuration available for WPS-9123 only.

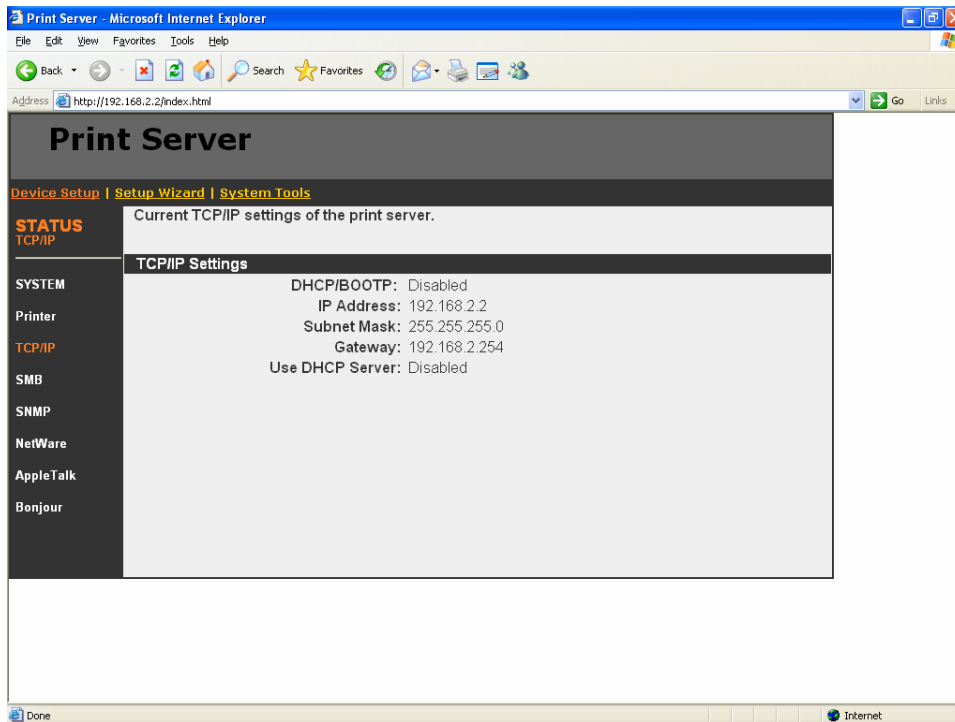
### 8.3.2 Printer



The Printer server can communicate with the printer to get the printer information including printer manufacturer, model number, printing language supported, and also the printer's status. This page lists the information of printers connected to all printer ports.

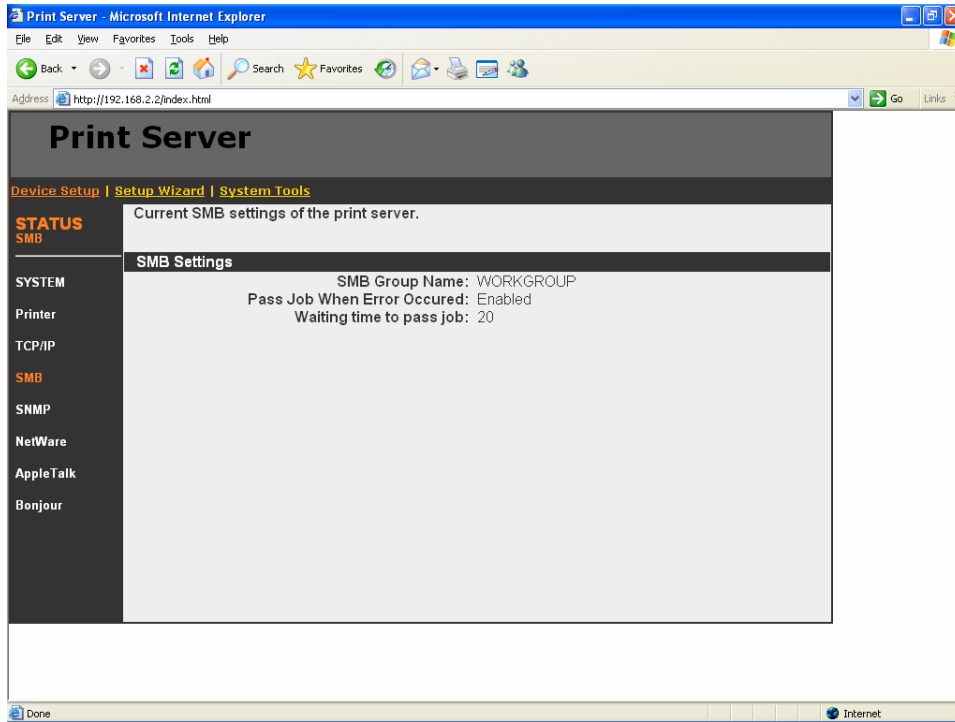


### 8.3.3 TCP/IP



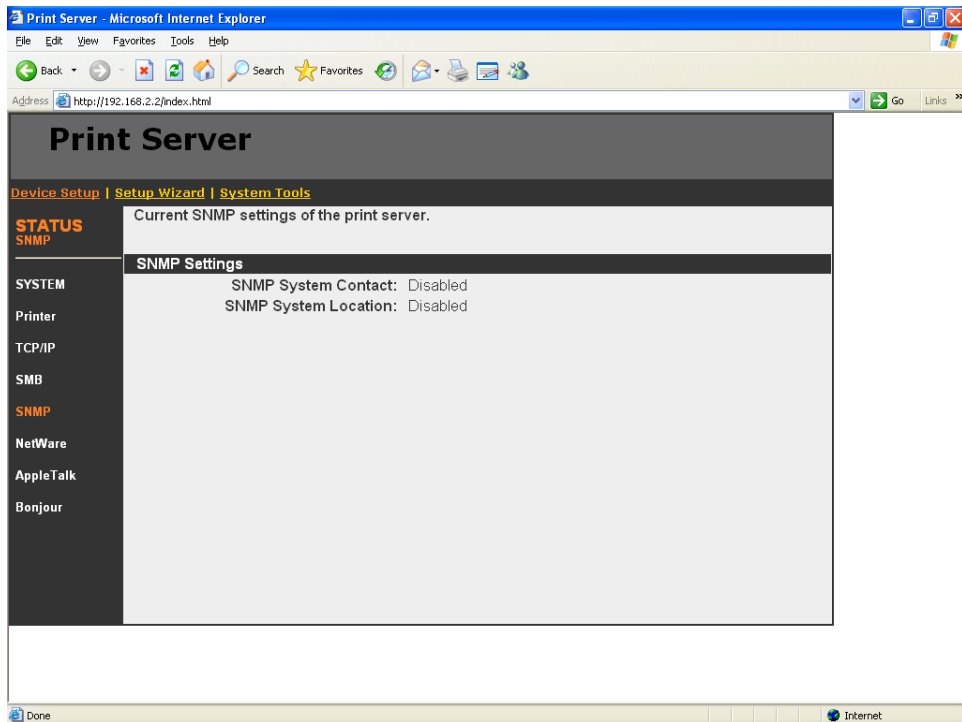
This page lists all TCP/IP settings of the printer server including “IP Address”, “Subnet Mask” and “Gateway”. It also lists DHCP server setting.

### 8.3.4 SMB



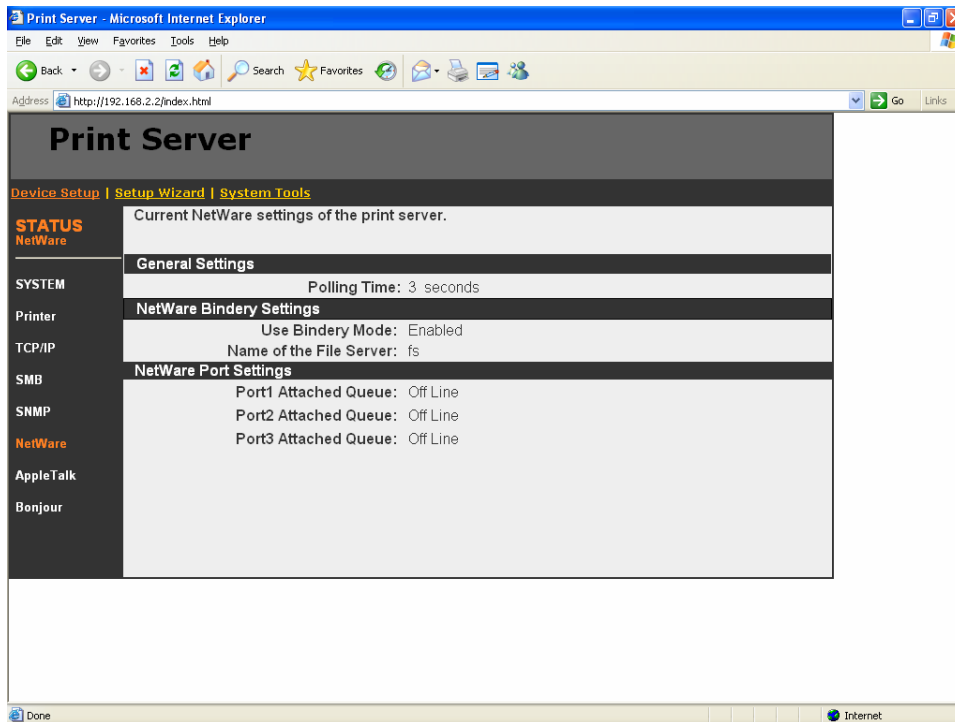
This page lists the SMB group and the pass job interval time settings of the printer server.

### 8.3.5 SNMP



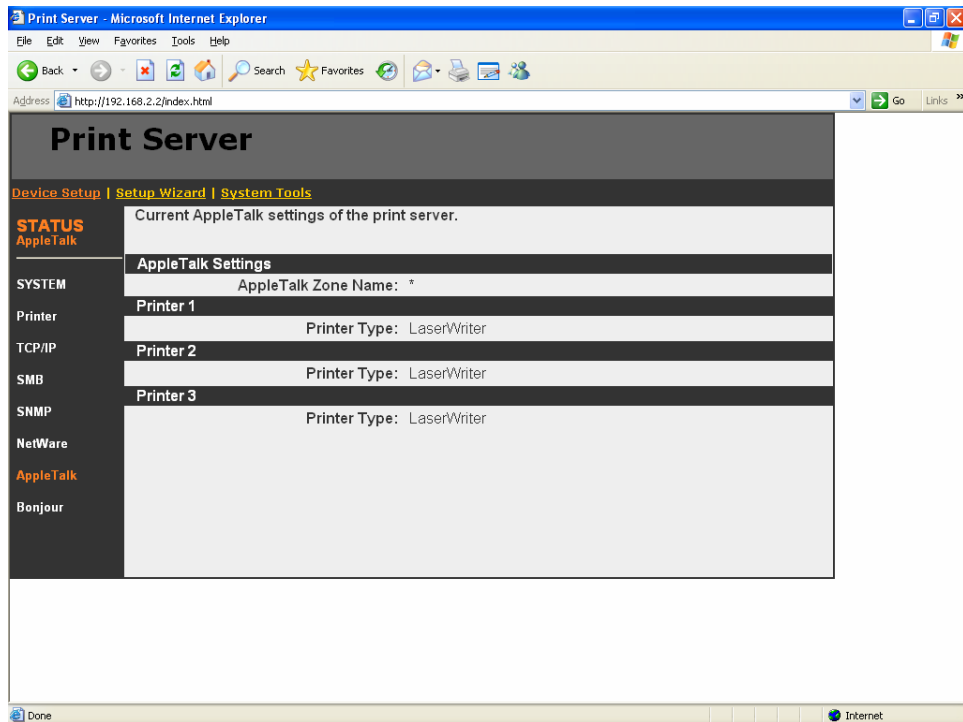
This page lists the SNMP settings of the printer server. It includes the settings of "SNMP System Contact" and "SNMP System Location".

### 8.3.6 NetWare



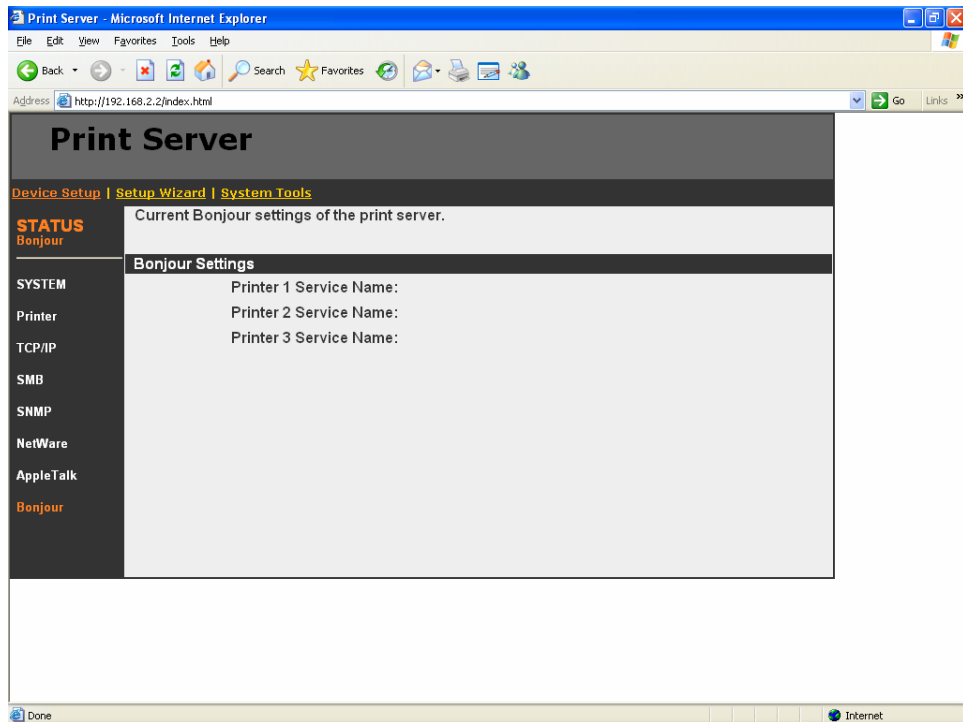
This page lists NetWare settings, including "Polling Time", "Use Bindery Mode", "Name of the File Server" and "Port Attached Queue".

### 8.3.7 AppleTalk



This page lists AppleTalk settings, including "AppleTalk Zone Name" and "Printer Type" of printers connected to all print ports.

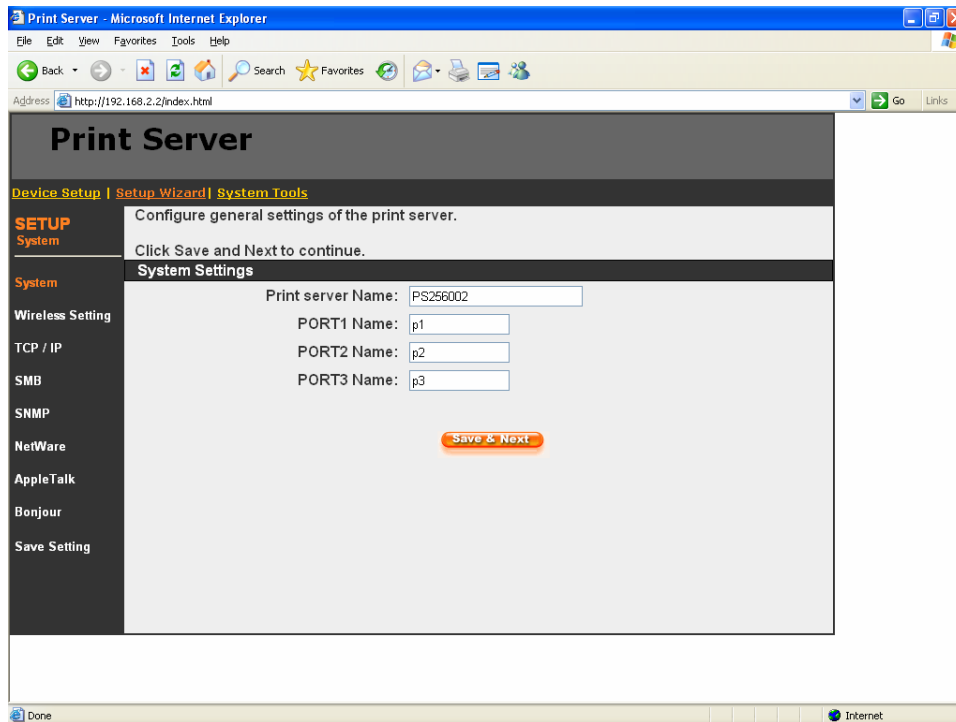
### 8.3.8 Bonjour



This page lists Bonjour settings, including “Printer Service Name” of each port.

## 8.4 Setup Wizard

### 8.4.1 System

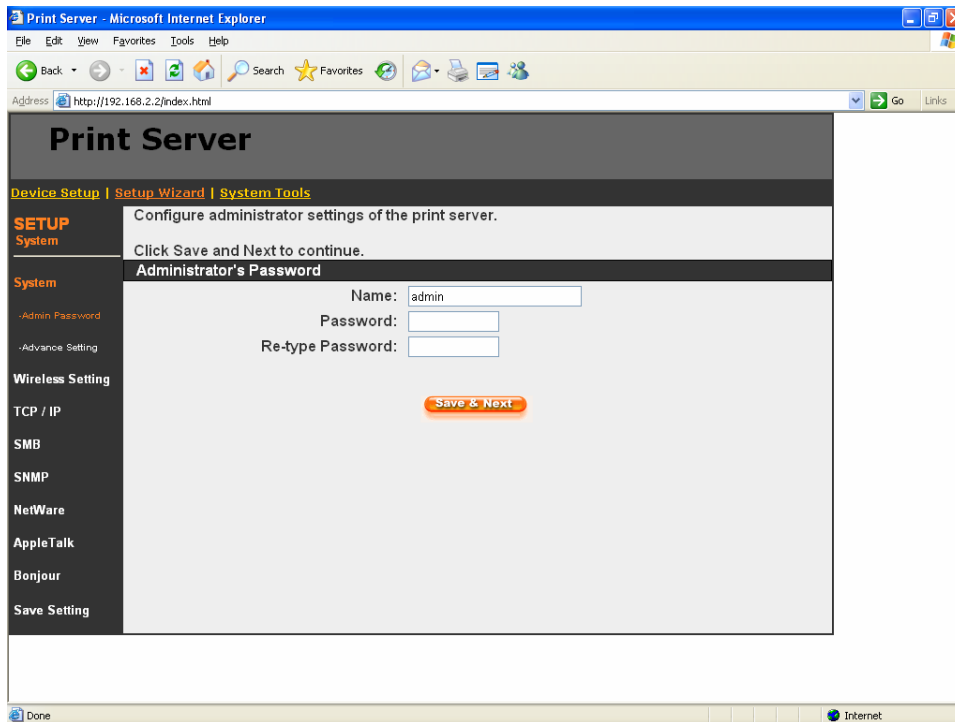


You can change the printer server name and port name of the printer server from here.

**Printer server Name**, the name of the printer server. You can use this name to identify the printer server when you are searching for the printer server by the administration and client utilities. By default, the printer server name is the last 6-digit of MAC ID with prefix “PS”.

**Port Name** is the name of the printer port. The Printer server has three printer ports, two USB 2.0 ports and one parallel port. Each printer port has to be assigned a name. Then you can use this name to access the printer port. By default, the printer port name is “p1” for port 1, “p2” for port 2 and “p3” for port 3.

### 8.4.1.1 Admin Password



It allows you to change the password of the printer server.

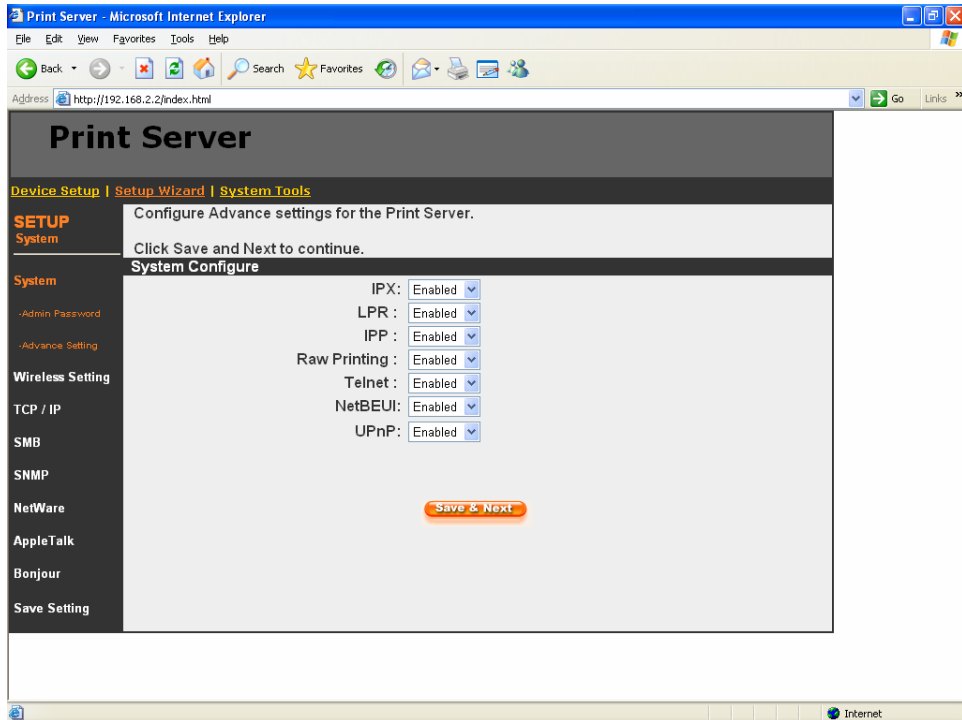
**Name** is the administrator name of the printer server. If you change the user name, you have to login to the printer server from administrator utility or web management with the new name. The default user name is "admin".

**Password**, enter the password you want to change to the printer server. The password can be up to 8-digit alphanumeric format. The default password is "1234".

**Re-type Password**, enter the password you want to change to the printer server again.

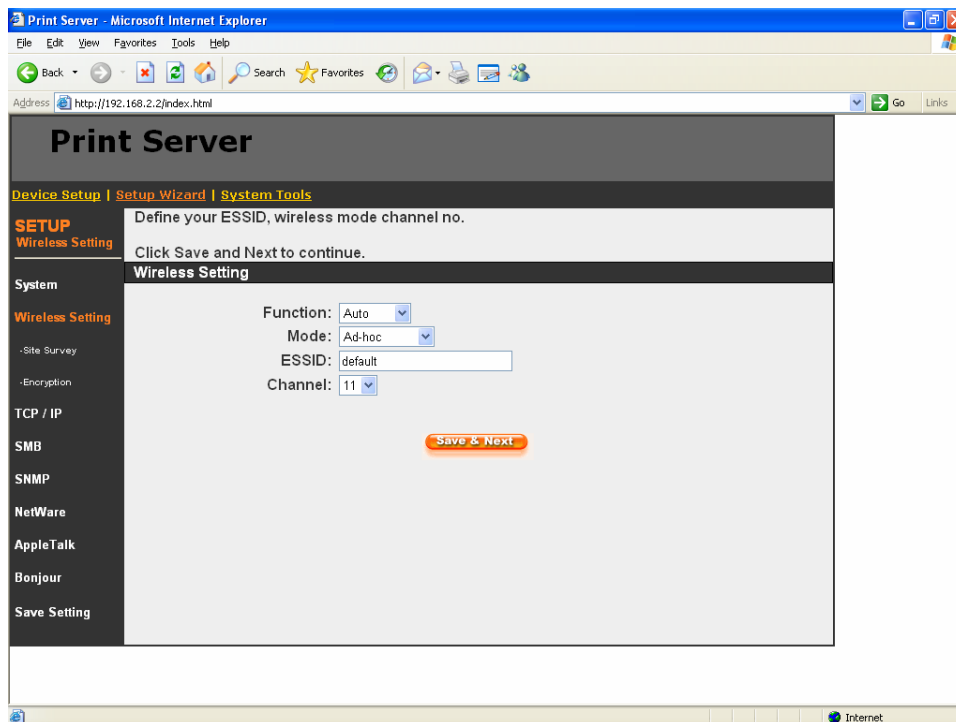


### 8.4.1.2 Advanced Settings



You can enable/disable the printing protocols and management tools from the screen. To enable the function, please select “Enable”; to disable the function, please select “Disable”.

## 8.4.2 Wireless Setting (For WPS-9123 only)



If you want to use the printer server through wireless LAN, please set up the printer server through Ethernet first and make sure your wireless LAN setting is correct. After setting the wireless LAN, unplug the Ethernet cable and restart the printer server, then you can start to use the printer server through wireless LAN. If the wireless configuration does not work, please plug the Ethernet cable again, restart the printer server and configure the printer server through Ethernet until the wireless LAN settings are correct.

You can enable/disable the wireless function and set parameters that are used for the wireless stations to connect to this printer server from here. The parameters include “Function”, “Mode”, “ESSID” and “Channel Number”. You can manually set the parameters of wireless LAN in this page or use the “Site Survey” function to automatically search for an available access point and associate with it.

**Function:** You can select “Auto”, “Enable” or “Disable” to manually configure the wireless function.

- Auto – “Auto” is the default setting of the printer server. At this mode, the printer server will automatically decide to enable or disable the wireless function. When the printer server starts up, it will auto-detect if the LAN port is connected to an

active network by an Ethernet cable. If this is the case, the printer server will run in Ethernet mode. If the printer server is not connected to an active network by Ethernet cable, the printer server will run in wireless LAN mode.

Users can plug the Ethernet cable to the printer server at the first, after configuring the printer server features and wireless settings; they can unplug the Ethernet cable to enable the wireless connection. It makes the configuration much easier without creating the wireless connection in advance.

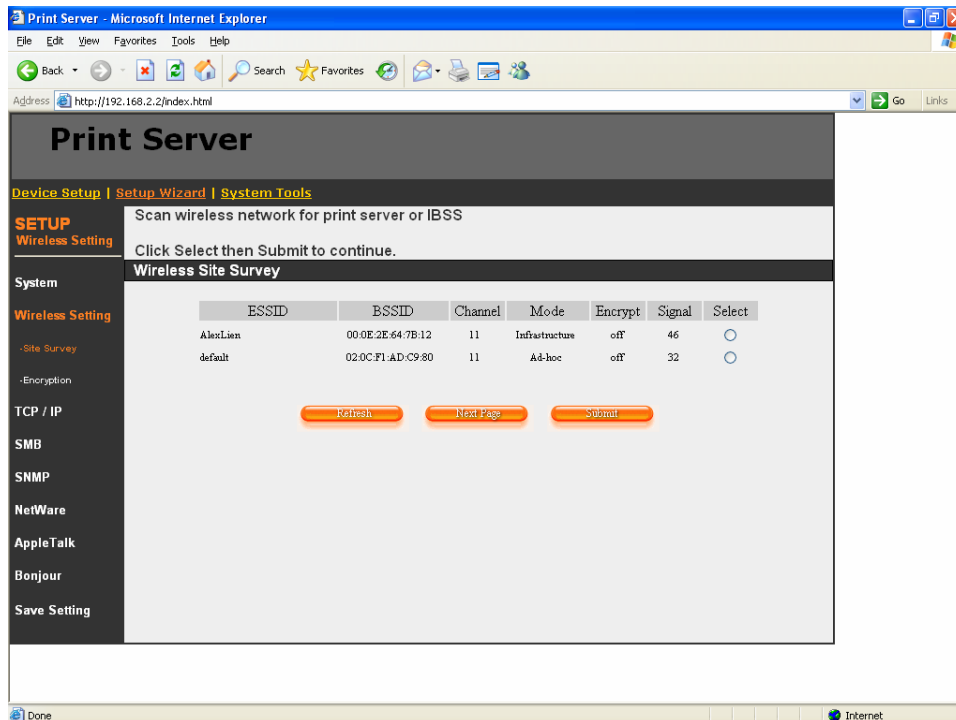
- **Enable** – Enable wireless function only, the printer server's wireless LAN will be always enabled and Ethernet will be always disabled.
- **Disable** – Disable the wireless function, the printer server's wireless LAN will be always disabled and Ethernet will be always enabled.

**Mode** is the operation mode of wireless station. You can choose either "Ad Hoc" or "Infrastructure" mode. If you do not have any access point and want to use peer-to-peer connection, you have to choose "Ad Hoc" mode. If you have an access point as the wireless LAN infrastructure, you have to choose "Infrastructure" mode.

**ESSID** is the unique name identified by in a wireless LAN. The ID prevents the unintentional merging of two co-located WLANs. Please make sure that the ESSID of all stations and access points in the same WLAN network are the same.

**Channel Number** is the channel number of your wireless LAN. Please make sure that the channel number of all stations and access points in the same WLAN network are the same.

### 8.4.2.1 Site Survey (For WPS-9123 only)



You can use this “Site Survey” function to search for available access points in you location. In the list is the information of all available access points or wireless stations, includes SSID, BSSID, Channel, Type, Encryption and Signal Strength. You can select one wireless device in the list for this printer server to associate with or you have to go back to “Wireless” page to manually setup the wireless parameters.

**Select:** click the radio button in the “Select” column, and then click “Submit”. The printer server will be connected to the wireless device you have selected.

**Refresh:** click “Refresh” to update the list.

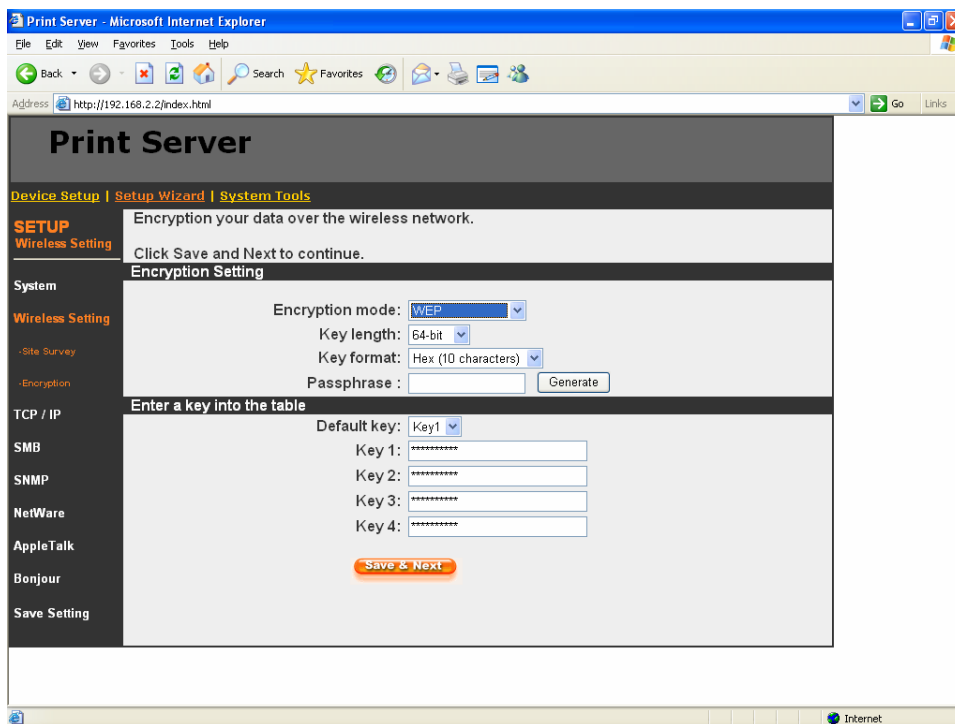
**Next Page:** go to next web page.

**Submit:** Click “Submit” to confirm the connection with the wireless device.

### 8.4.2.2 Encryption (For WPS-9123 only)

This printer server supports WEP and WPA-PSK security mode. If you want to use WEP encryption to protect your wireless network, you have to select “WEP”. If you want to use WPA-PSK, you have to select “WPA-shared key”. The wireless security setting should be the same with other wireless devices in the same network.

#### WEP Security Mode:



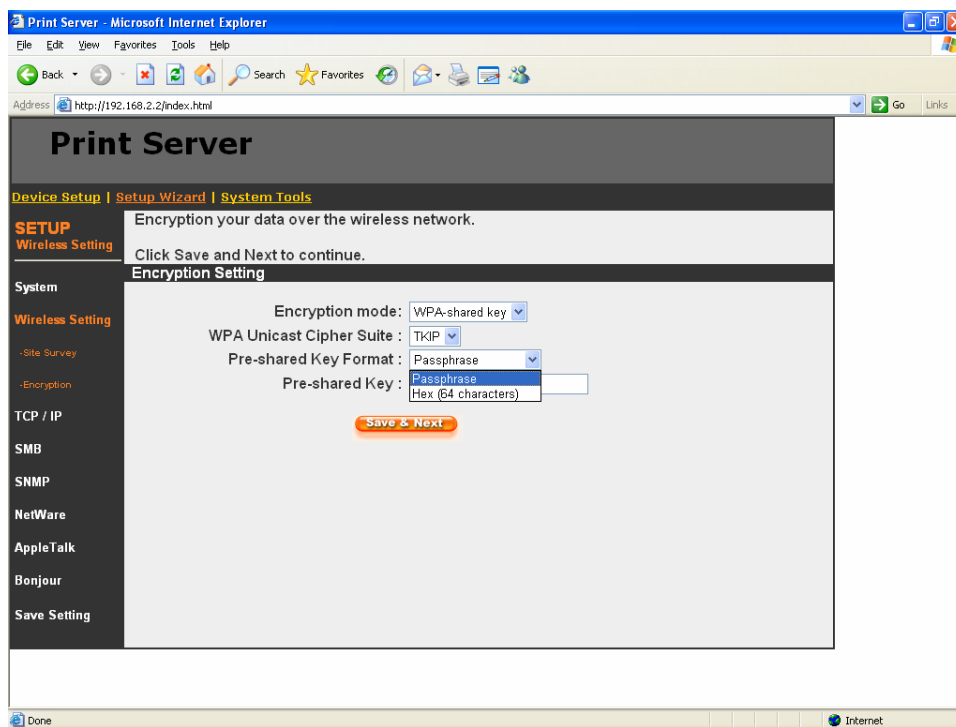
- Key Length – You can choose “64-bit” to use WEP with 64-bit key length encryption or choose “128-bit” to use WEP with 128-bit key length encryption. The longer key length can provide better security but worse transmission throughput.
- Key Format – You may select to use ASCII Characters (alphanumeric format) or Hexadecimal digits (in the "A-F", "a-f" and "0-9" range) to be the WEP Key.
- PassPhrase – A passphrase simplifies the WEP encryption process by automatically generating the WEP encryption keys for the printer server.
- Default Key – Select one of the four keys to encrypt your data. Only the key you select it in the “Default key” will take effect.

- Key 1 – Key 4 – The WEP keys are used to encrypt data transmitted within the wireless network. Fill the text box by following the rules below.

64-bit WEP: input 10-digit Hex values (in the "A-F", "a-f" and "0-9" range) or 5-digit ASCII character as the encryption keys. For example: "0123456aef" or "Guest".

128-bit WEP: input 26-digit Hex values (in the "A-F", "a-f" and "0-9" range) or 10-digit ASCII characters as the encryption keys. For example: "01234567890123456789abcdef" or "administrator".

### WPA-shared key Security Mode:



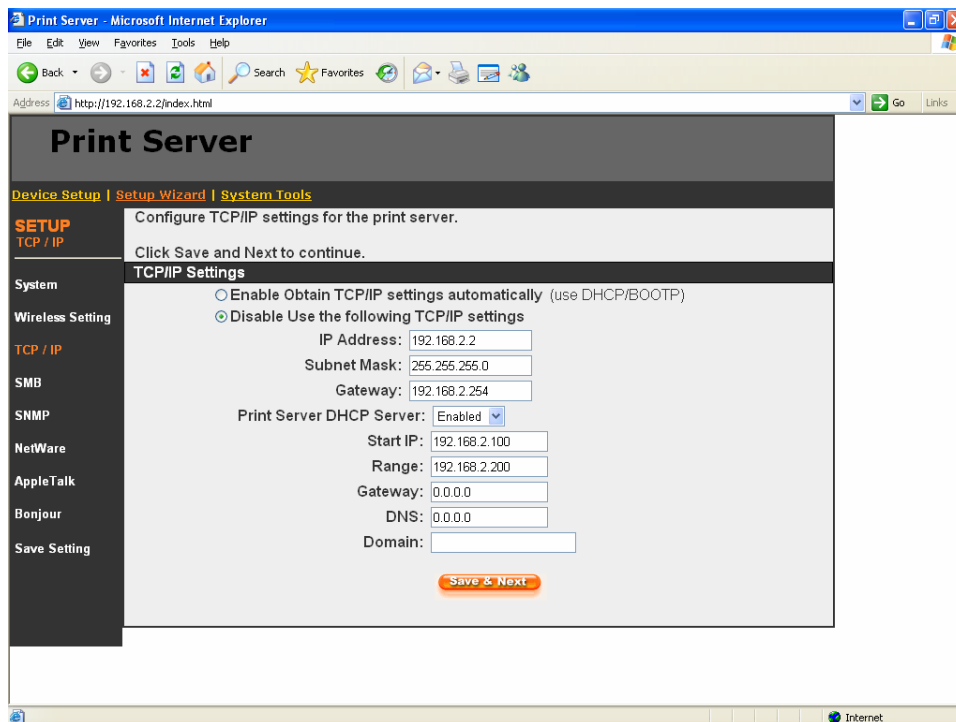
When "WPA-shared key", also named "WPA-PSK" requires users to select one of the advanced encryption methods, i.e. TKIP or AES and enter a set of shared key.

- TKIP – TKIP (Temporal Key Integrity Protocol) changes the temporal key every 10,000 packets. This insures much greater security than the standard WEP security.

- AES – AES has been developed to ensure the highest degree of security and authenticity for digital information and it is the most advanced solution defined by IEEE 802.11i for the security in the wireless network.
- Pre-shared Key Format – Select “Passphrase” or “Hex” key format. If “Passphrase” is selected, please enter 8 to 63 digits of ASCII format to be the key for the authentication within the network. If “Hex” is selected, please enter 64 digits of Hex code which should be “0-9” and “A-F”.
- Pre-Shared Key – The “Pre-Shared Key” is different from the key format selection. Please see above description.

When you finish configuring the wireless security, click “Save & Next” to confirm the configuration.

### 8.4.3 TCP/IP



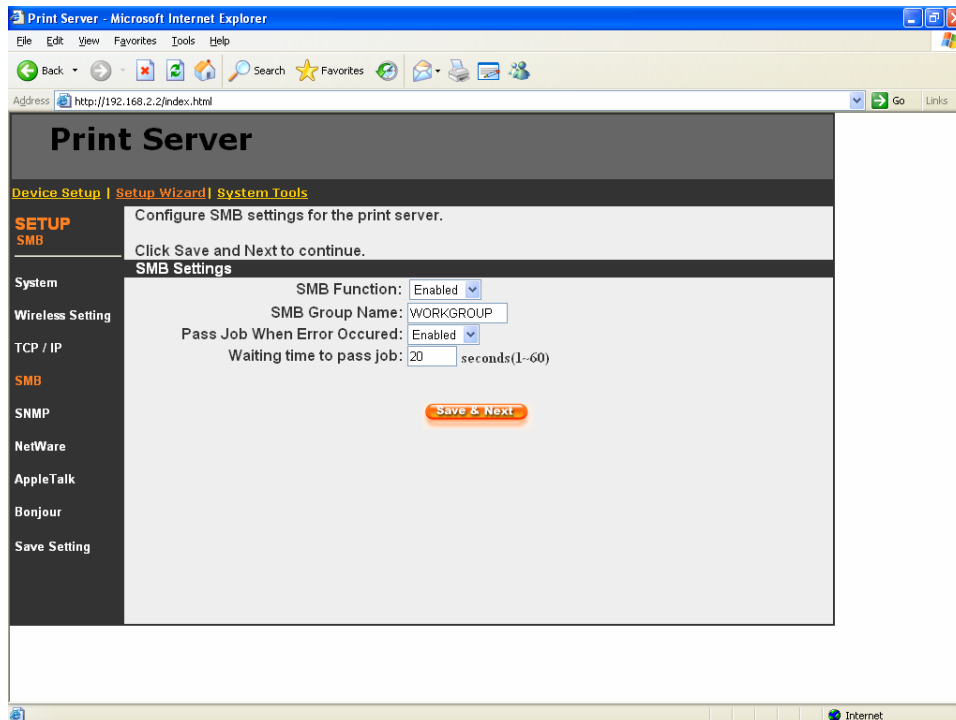
You can configure the printer server to automatically get IP from DHCP server or manually specify static IP. The printer server also has a built-in DHCP server. You can enable this DHCP server and let it manages IP for you.

If you need the printer server to automatically get an IP from DHCP server, select “Enable Obtain TCP/IP Settings Automatically (Use DHCP/BOOTP)”. You also can select “Disable Use the following TCP/IP Settings” to manually assign “IP Address”, “Subnet Mask” and “Gateway” for the printer server.

You can enable/disable for the printer server’s DHCP server. The DHCP server is disabled by default. If the DHCP Server is enabled, you have to assign a range of IP addresses here. Fill in the “Start IP”, “Range”, “Gateway”, “DNS”, and “Domain”, and the printer server will assign a unique IP for each client.



## 8.4.4 SMB

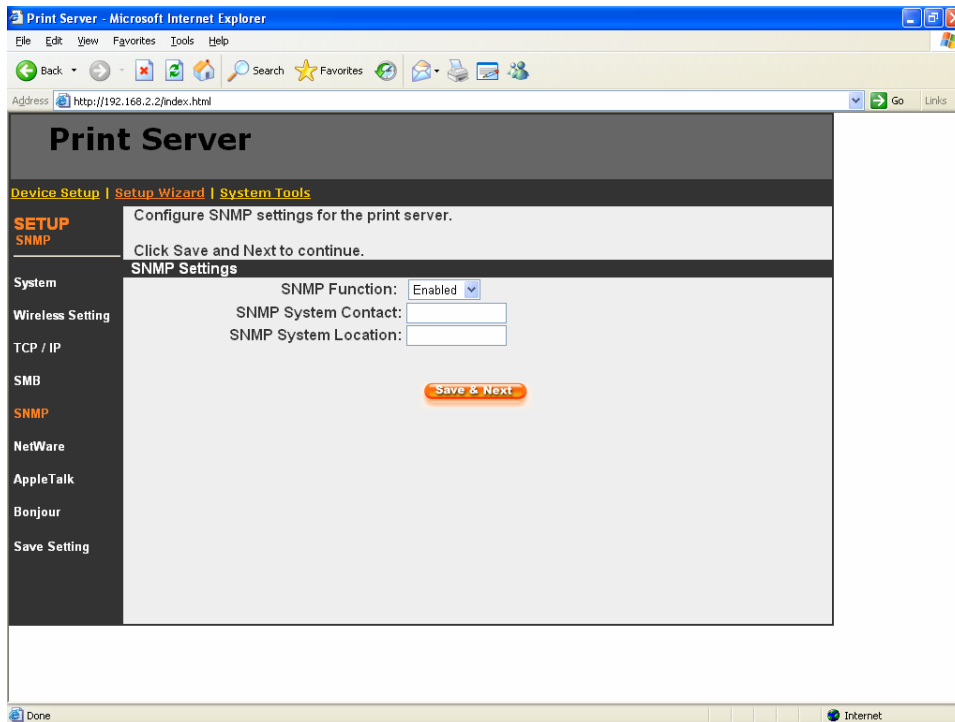


You can enable/disable the SMB protocol from here. If SMB is enabled, enter the "SMB Group Name" to specify the SMB group that this printer server belongs to. All PC should join the same group before they can use this printer server by SMB protocol.

**Pass Job when Error Occurred:** When the printer is interrupted because of paper out or off line while printing, user can enable this function and set the interval time to bypass the current printing job. Or the printing document will not be printed completely or with unformatted messages.

**Waiting Time to Pass Job:** The range is from 1 to 60 seconds. By default, the parameter is enabled and the default waiting time is 20 seconds.

## 8.4.5 SNMP

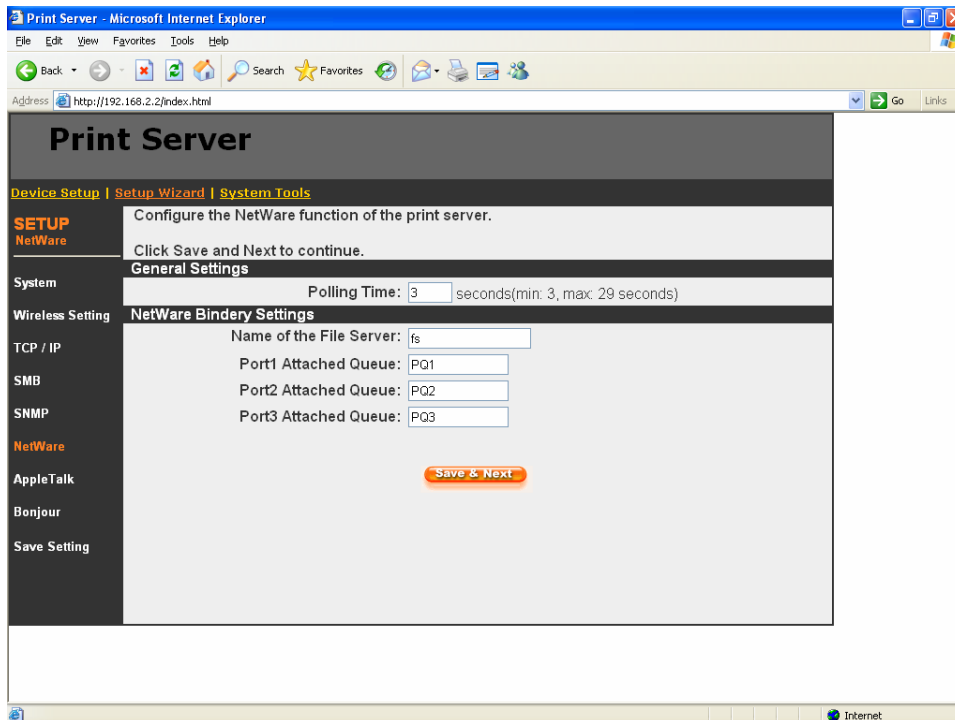


The printer server supports SNMP configuration. If it is enabled, please set up the following parameters.

**SNMP System Contact:** You can enter the printer server administrator's contact information here. This information will be displayed in the SNMP management tool.

**SNMP System Location:** You can enter the installed location of the printer server here. This information will be displayed in the SNMP management tool.

## 8.4.6 NetWare



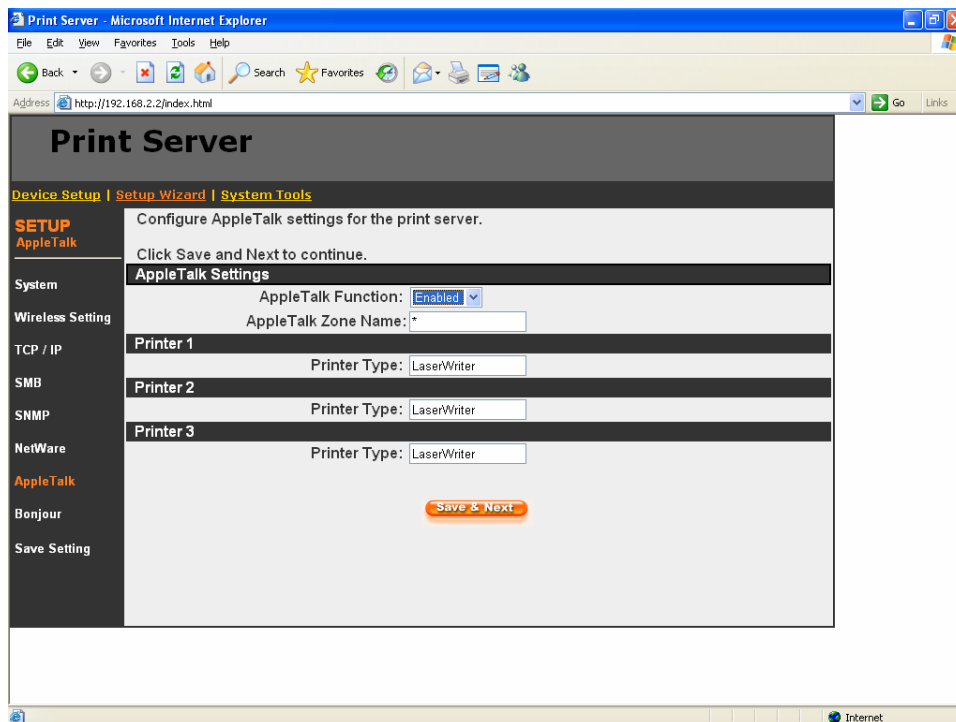
This printer server supports NetWare Bindery Printing method. The printer server periodically polls the NetWare server printer queues for printing jobs. You have to assign the NetWare server name, printer server polling interval and the name of queue on the NetWare server for each printer port.

**Polling Time** is the polling interval of the printer server for waiting printing jobs on the NetWare server.

**Name of the File Server** is the name of the NetWare file server that provides printer queues.

**Attached Queue** is the name of the printer queue on the NetWare server. The printer queue keeps all printing jobs waiting on the NetWare server. You have to assign a printer queue for each printer port of this printer server.

## 8.4.7 AppleTalk



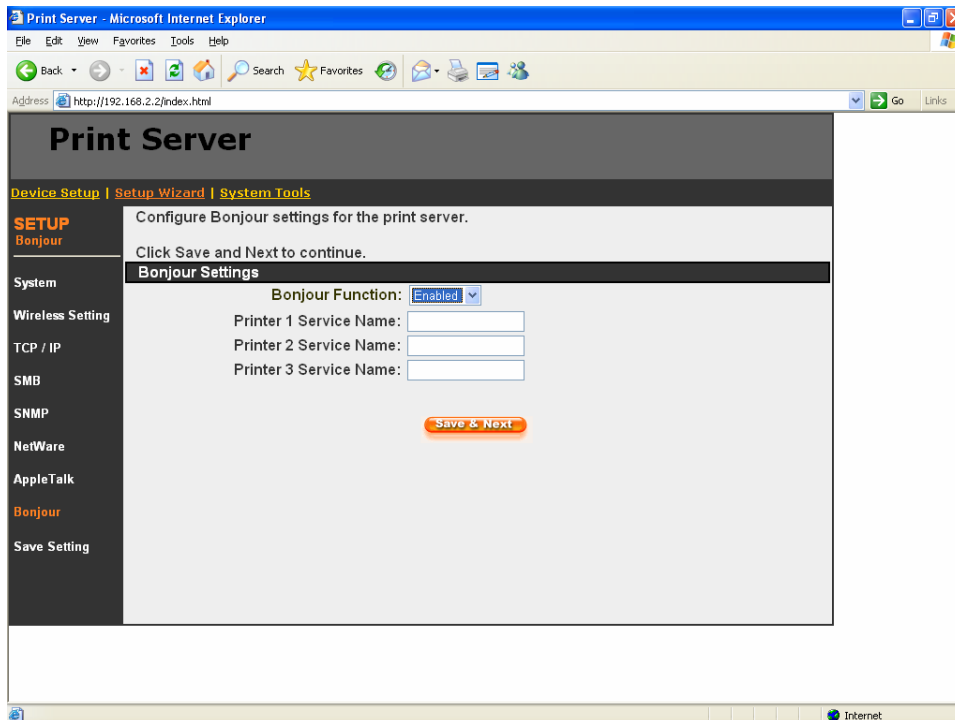
AppleTalk is a data communication protocol often used by Macintoshes. The printer server can use these parameters to join the AppleTalk network and share the printer to other AppleTalk workstations. You have to select to enable or disable AppleTalk, and setup the “Zone Name” and “Printer Type” for each printer port of this printer server.

**AppleTalk Enable:** Enable or disable “AppleTalk”.

**AppleTalk Zone Name:** Printer server has to join zones of AppleTalk before it can be shared to other workstations. Only workstations in the same zone can share the printer. If you want to share the printer to all workstations in all Zones, you should enter only “\*” in the “Zone Name” field.

**Printer Type,** the type of printer attached to each printer port. You can get the printer type from the manufacturer of the printer.

## 8.4.8 Bonjour

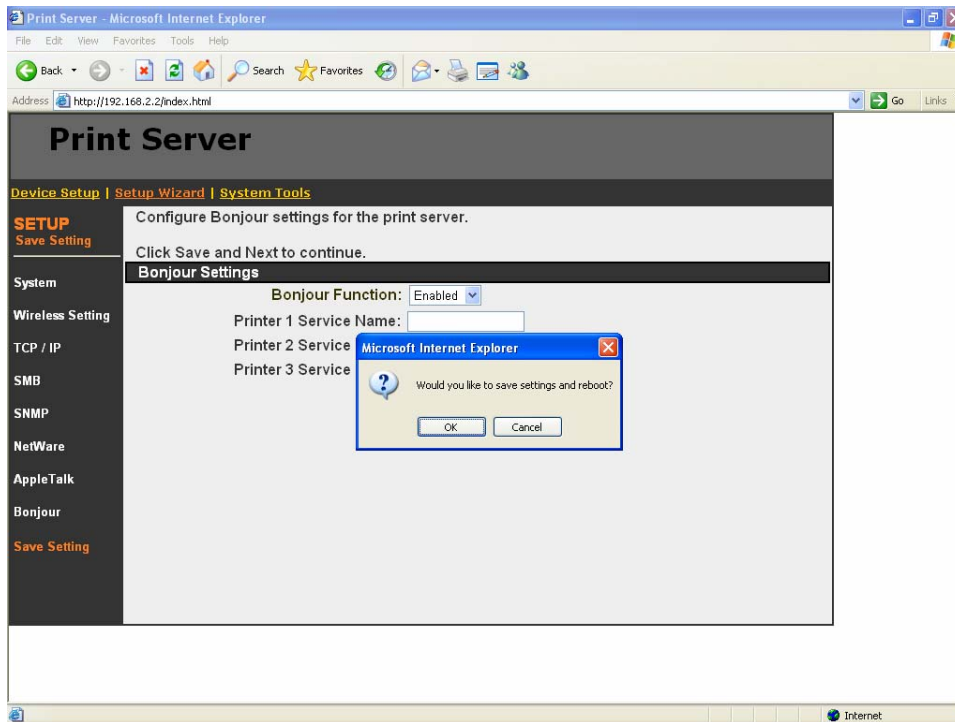


“Bonjour” technology (“Rendezvous” was renamed “Bonjour” with the release of Mac OS X v10.4), also known in the industry as Zero Configuration networking, enables automatic discovery of computers, devices, and services on IP networks. It uses industry standard IP protocols to allow devices to automatically find each other without the need to enter IP addresses or configure DNS servers.

**Bonjour Function:** Enable or disable “Bonjour” protocol on the printer server.

**Service Name** is a name to identify the device on the IP network. The Printer server has three printer ports; please designate the unique and friendly service name for each printer connected to one of the three printer port.

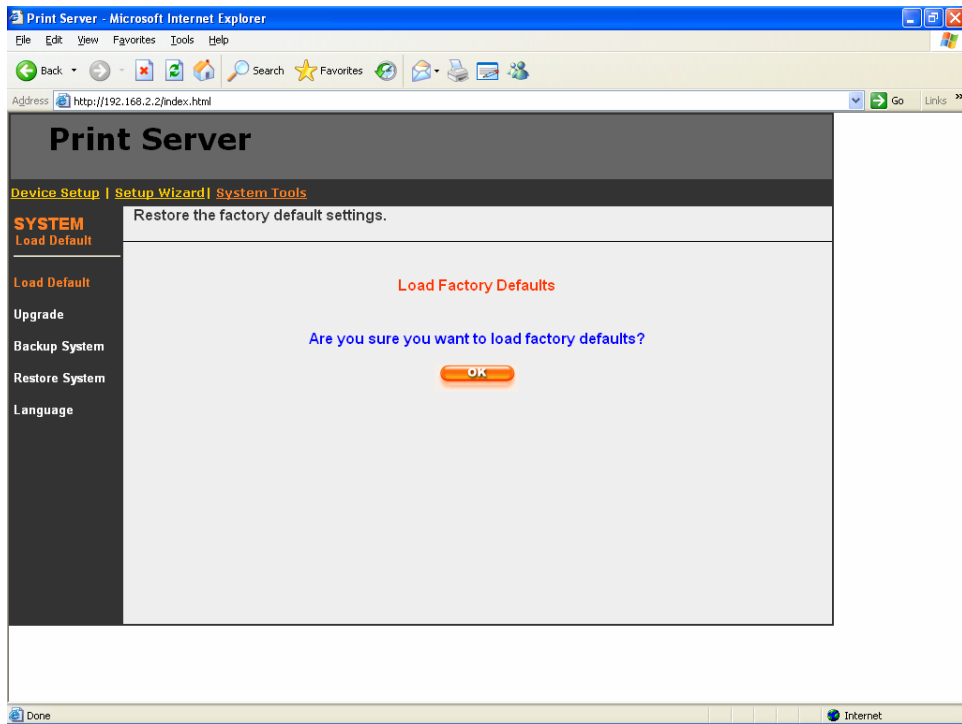
## 8.4.9 Save Settings



You can click the "Save Settings" to save the settings and restart the system.

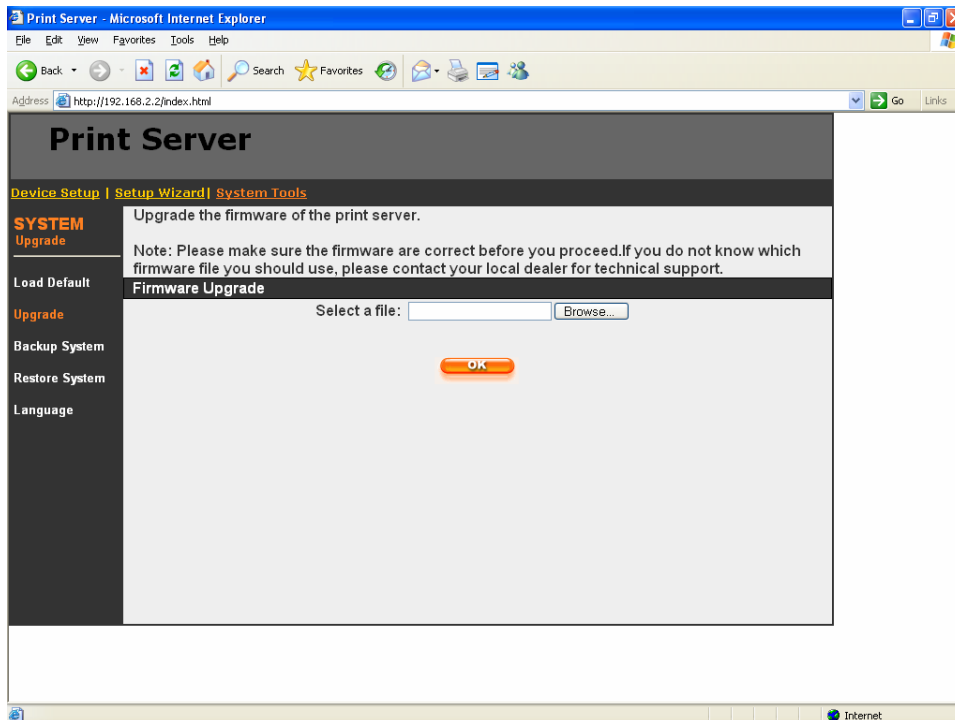
## 8.5 System Tools

### 8.5.1 Load Default



You can use this page to restore the factory default settings. All of your previous setup will be cleared.

## 8.5.2 Upgrade



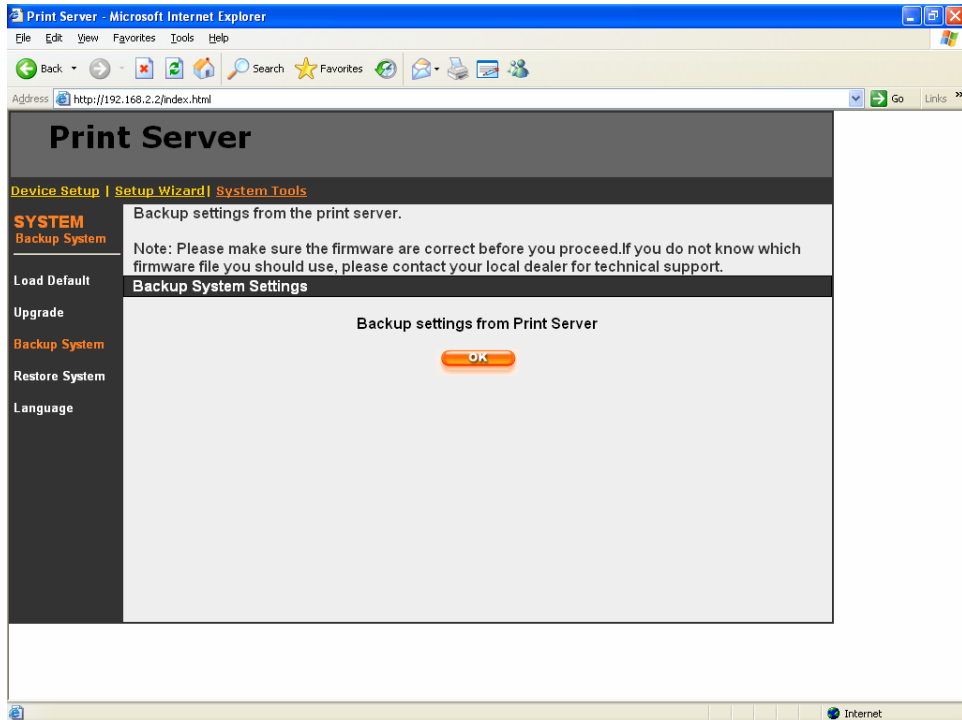
You can upgrade new firmware for this printer server in this page. Click "Browse" to select the new firmware in your storage and then click "OK", the firmware will be updated in several minutes.

Note that before you upgrade the firmware please make sure that the IP Address settings of the printer server are in the same network as your computer.

Be aware that if you have started upgrading firmware, you have to follow all the upgrading steps or the printer server can't turn back to normal configuration.

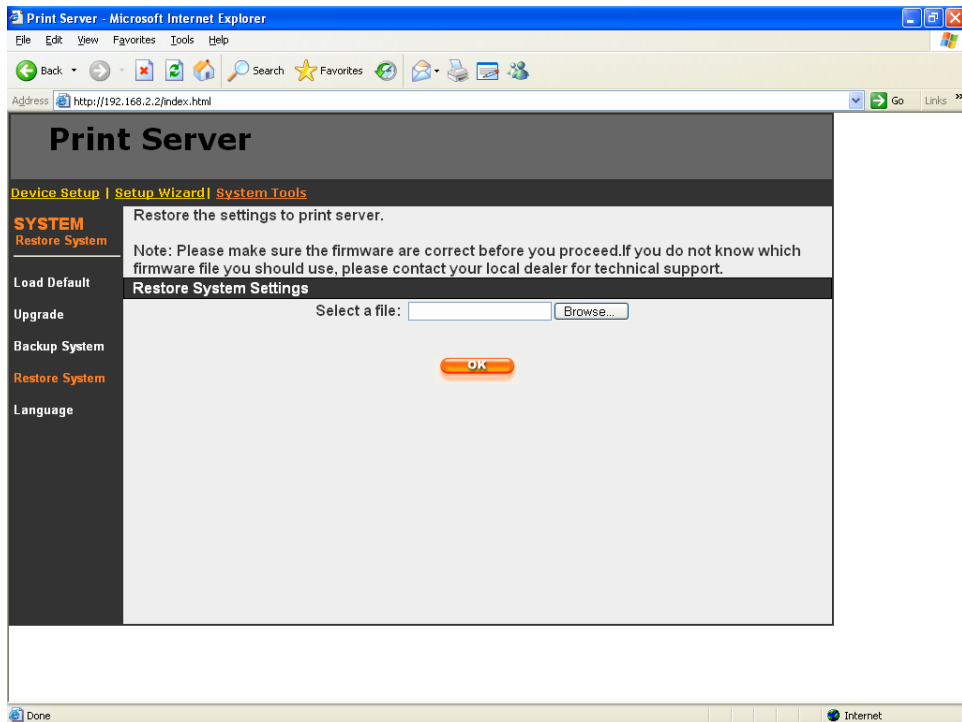


### 8.5.3 Backup System



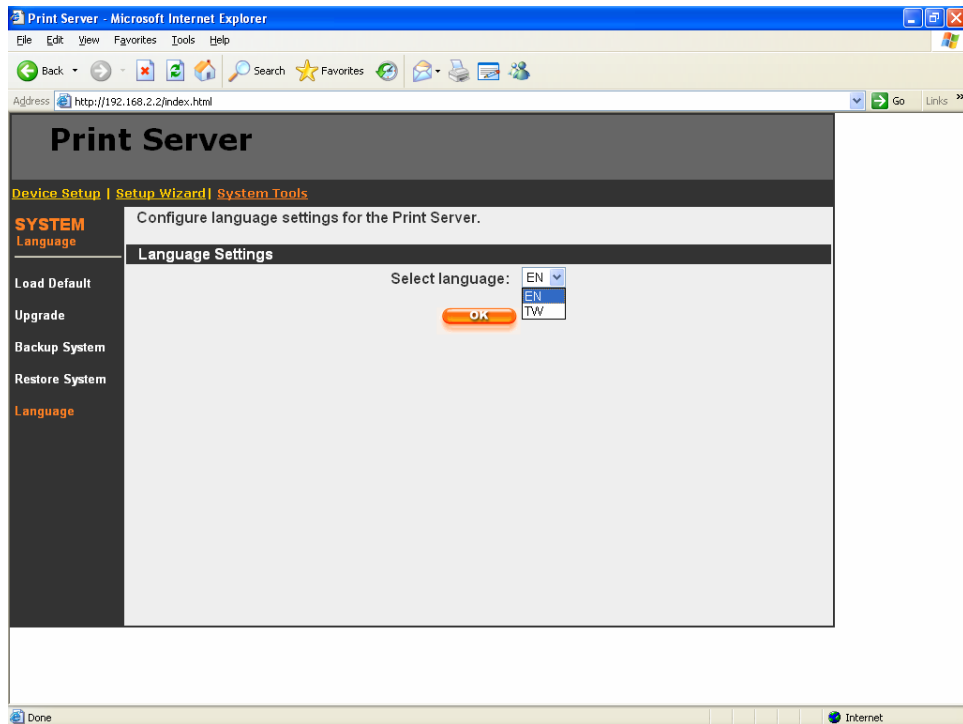
To backup the printer server setting to a “config.bin” file, select “Backup System” and click “OK”.

## 8.5.4 Restore System



To apply the setting from the backup file, click "Browse" and specify a file to restore.

## 8.5.5 Language



The web management tool can support two languages: English (EN) and Traditional Chinese (TW). Please select the language what you need.

## **9. Telnet Management**

## **9.1 Introduction**

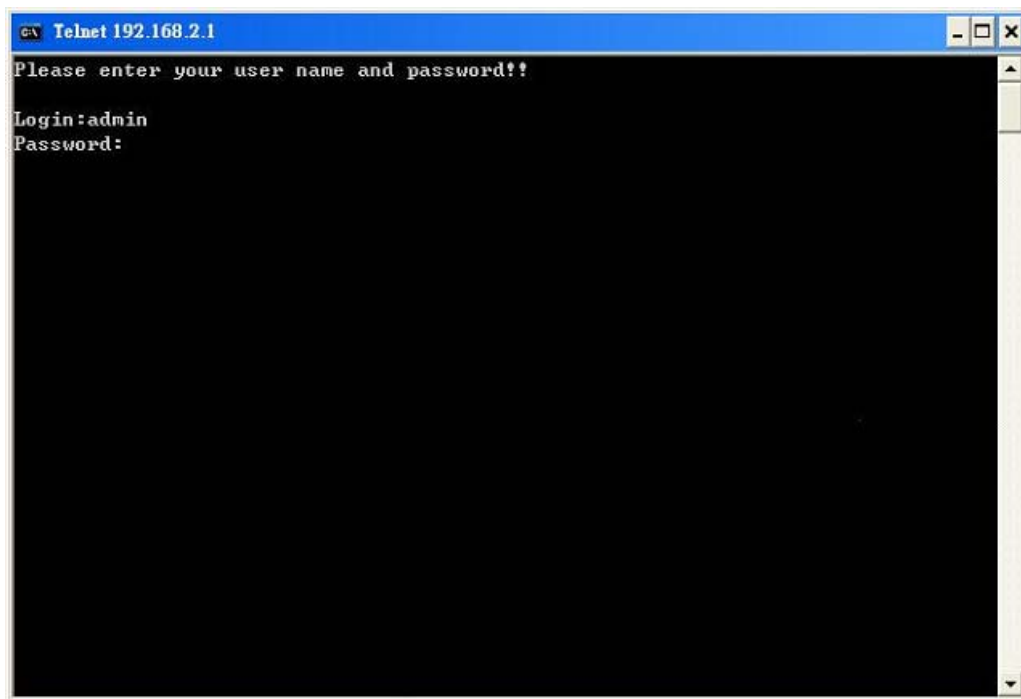
Printer server can be configured and managed by Telnet. Through Local Area Network, or even Internet, administrator can easily configure and manage printer server's various main functions by a telnet client.

## 9.2 Login

Execute the Telnet client tool and connect to the printer server IP.

```
telnet 192.168.2.2
```

Then you will be prompted to enter the username and password.



After you successfully enter the correct username and password, the following prompt will be displayed and you can start to manage this printer server by command.

```
admin#
```

### 9.3 Get Setting Values – “get” Command

“get” command is used to get the setting values of this printer server. The format of “get” command is as following:

```
get argument
```

Then the argument value will be displayed after the command. For example, if I want to get IP address of the printer server, I type “get ip” command and the IP value “IP\_ADDR=’192.168.2.2’” is displayed:

```
admin# get ip
```

```
IP_ADDR=192.168.2.2
```

If you enter “get” only, the system will list all available arguments of “get” command.

The following table lists all the arguments whose value can be got by “get” command:

| Argument | Description                                                                          | Example                                     |
|----------|--------------------------------------------------------------------------------------|---------------------------------------------|
| psname   | Printer server name                                                                  | admin# get psname<br>PORT1_PS='PS254896'    |
| password | Login password                                                                       | admin# get password<br>USER_PASSWORD='1234' |
| username | Login username                                                                       | admin# get username<br>USER_NAME='admin'    |
| wfunc    | Wireless LAN function is enabled or disabled<br>0: disabled<br>1: enabled<br>2: auto | admin# get wfunc<br>WIRELESS_FUNCTION=2     |
| wlmode   | Wireless LAN mode is Infrastructure or Ad Hoc<br>0: Infrastructure<br>1: Ad Hoc      | admin# get wlmode<br>AP_MODE=1              |
| ESSID    | ESSID of the wireless LAN                                                            | admin# get ESSID<br>SSID='default'          |

| Argument | Description                                                                      | Example                          |
|----------|----------------------------------------------------------------------------------|----------------------------------|
| channel  | Channel number used by wireless LAN                                              | admin# get channel<br>CHANNEL=11 |
| wep      | The mode of WEP<br>0: disable<br>1: 64 bit WEP enabled<br>2: 128 bit WEP enabled | admin# get wep<br>WEP=0          |
| defkey   | Default WEP key number                                                           | admin# get defkey                |

|              |                                                                                                    |                                                                   |
|--------------|----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|
|              | 0: key 1<br>1: key 2<br>2: key 3<br>3: key 4                                                       | WEP_DEFAULT_KEY=0                                                 |
| key641       | 64 bit WEP key 1                                                                                   | admin# get key641<br>WEP64_KEY1=0123456789                        |
| key642       | 64 bit WEP key 2                                                                                   | admin# get key641<br>WEP64_KEY2=0123456789                        |
| key643       | 64 bit WEP key 3                                                                                   | admin# get key641<br>WEP64_KEY3=0123456789                        |
| key644       | 64 bit WEP key 4                                                                                   | admin# get key641<br>WEP64_KEY4=0123456789                        |
| key1281      | 128 bit WEP key 1                                                                                  | admin# get key1281<br>WEP128_KEY1=0123456789<br>abcdef0123456789a |
| key1282      | 128 bit WEP key 2                                                                                  | admin# get key1282<br>WEP128_KEY2=0123456789<br>abcdef0123456789a |
| key1283      | 128 bit WEP key 3                                                                                  | admin# get key1283<br>WEP128_KEY3=0123456789<br>abcdef0123456789a |
| key1284      | 128 bit WEP key 4                                                                                  | admin# get key1284<br>WEP128_KEY4=0123456789<br>abcdef0123456789a |
| ip           | IP of the printer server                                                                           | admin# get ip<br>AP_ADDR='192.168.2.2'                            |
| gateway      | Default gateway of the printer server                                                              | admin# get gateway<br>DEFAULT_GATEWAY='192.168.2.254'             |
| submask      | Subnet mask of the printer server                                                                  | admin# get submask<br>SUBNET_MASK='255.255.255.0'                 |
| polling      | Polling interval (in second) of the printer server for waiting printing jobs on the NetWare server | admin# get polling<br>PORT1_POLLTIME=3                            |
| aq1          | Name of the printer queue on the NetWare server                                                    | admin# get aq1<br>PORT1_QNAME='PQ1'                               |
| applezone    | The name of AppleTalk zone that this printer server joins to                                       | admin# get applezone<br>PORT1_APPLEZONE='*'                       |
| printertype1 | The type of the printer attached to this printer server                                            | admin# get printertype1<br>PORT1_PRINTTYPE='LaserWriter'          |

| Argument | Description                                                           | Example                                                |
|----------|-----------------------------------------------------------------------|--------------------------------------------------------|
| SMBDG    | The name of the SMB group name that this printer server joins to      | admin# get SMBDG<br>SMBD_NAME='default'                |
| SNMPC    | The administrator contact information of this printer server for SNMP | admin# get SNMPC<br>SNMP_CONTACT='sbdjohn@hotmail.com' |
| SNMPL    | The installed location of this printer server for SNMP                | admin# get SNMPL<br>SNMP_LOCATION='Room 301'           |
| port1    | The port name of this printer server                                  | admin# get port1<br>PORT1_LPTNAME='lpt1'               |
| DHCPS    | The DHCP server is enabled or                                         | admin# get DHCPS                                       |



|           |                                                                            |                                        |
|-----------|----------------------------------------------------------------------------|----------------------------------------|
|           | disabled<br>0: disable<br>1: enable                                        | DHCPD=0                                |
| DHCP      | Get dynamic IP by DHCP is enabled or disabled<br>0: disable<br>1: enable   | admin# get DHCP<br>DYNAMIC_IP=0        |
| appletalk | AppleTalk printing is enabled or disabled<br>0: disable<br>1: enable       | admin# get appletalk<br>APPLE_ENABLE=0 |
| SMBD      | SMB printing is enabled or disabled<br>0: disable<br>1: enable             | admin# get SMBD<br>SMBD_ENABLE=1       |
| SNMP      | SNMP management protocol is enabled or disabled<br>0: disable<br>1: enable | admin# get SNMP<br>SNMP_ENABLE=1       |
| IPX       | NetWare Bindery printing is enabled or disabled<br>0: disable<br>1: enable | admin# get IPX<br>IPX_ENABLE=1         |
| LPD       | LPR printing is enabled or disabled<br>0: disable<br>1: enable             | admin# get LPD<br>LPD_ENABLE=1         |
| IPP       | IPP printing is enabled or disabled<br>0: disable<br>1: enable             | admin# get IPP<br>IPP_ENABLE=1         |
| RAW       | RAW printing is enabled or disabled<br>0: disable<br>1: enable             | admin# get RAW<br>RAW_ENABLE=1         |

## 9.4 Modify Setting Values – “set” Command

“set” command is used to modify the setting values of this printer server. The format of “set” command is as following:

```
set argument_name value
```

Then the value will be written into the system configuration. For example, if you want to set IP address of the printer server to 192.168.2.2, type “set ip 192.168.2.2” command and the IP of the printer server will be changed. After the setting is finished, please reboot the printer server.

```
admin# set ip 192.168.2.2
```

```
admin# reboot
```

If you enter only “set”, the system will list all arguments of “set” command and the command format.

The following table lists all the arguments whose value can be modified by “set” command:

| Argument | Description                                                                                         | Example            |
|----------|-----------------------------------------------------------------------------------------------------|--------------------|
| psname   | Printer server name                                                                                 | set psname PS001   |
| password | Login password                                                                                      | set password 1234  |
| username | Login username                                                                                      | set username admin |
| wfunc    | Enable or disable the wireless LAN function.<br>The value should be “disabled”, “enabled” or “auto” | set wfunc auto     |
| wlmode   | Wireless LAN mode is Infrastructure or Ad Hoc.<br>The value should be “inf” or “ad hoc”             | set wlmode ad hoc  |
| ESSID    | ESSID of the wireless LAN                                                                           | set ESSID default  |
| Argument | Description                                                                                         | Example            |
| channel  | Channel number used by wireless LAN.<br>The value should be 1~14.                                   | set channel 11     |
| wep      | The mode of WEP.<br>The value should be “disable”, “wep64” or “wep128”                              | set wep disable    |
| defkey   | Default WEP key number.<br>The value should be 0~3.<br>0: key 1<br>1: key 2<br>2: key 3             | set defkey 0       |

|           |                                                                                                    |                                             |
|-----------|----------------------------------------------------------------------------------------------------|---------------------------------------------|
|           | 3: key 4                                                                                           |                                             |
| key641    | 64 bit WEP key 1.<br>The value should be 10 digit Hex value                                        | set key641 0123456789                       |
| key642    | 64 bit WEP key 2.<br>The value should be 10 digit Hex value                                        | set key641 0123456789                       |
| key643    | 64 bit WEP key 3.<br>The value should be 10 digit Hex value                                        | set key641 0123456789                       |
| key644    | 64 bit WEP key 4.<br>The value should be 10 digit Hex value                                        | set key641 0123456789                       |
| key1281   | 128 bit WEP key 1.<br>The value should be 26 digit Hex value                                       | set key1281 0123456789ab<br>cdef0123456789a |
| key1282   | 128 bit WEP key 2.<br>The value should be 26 digit Hex value                                       | set key1282 0123456789ab<br>cdef0123456789a |
| key1283   | 128 bit WEP key 3.<br>The value should be 26 digit Hex value                                       | set key1283 0123456789ab<br>cdef0123456789a |
| key1284   | 128 bit WEP key 4.<br>The value should be 26 digit Hex value                                       | set key1284 0123456789ab<br>cdef0123456789a |
| ip        | IP of the printer server                                                                           | set ip 192.168.2.2                          |
| gateway   | Default gateway of the printer server                                                              | set gateway 192.168.2.<br>254               |
| submask   | Subnet mask of the printer server                                                                  | set submask 255.255.<br>255.0               |
| polling   | Polling interval (in second) of the printer server for waiting printing jobs on the NetWare server | set polling 3                               |
| aq1       | Name of the printer queue on the NetWare server                                                    | set aq1 PQ1                                 |
| applezone | The name of AppleTalk zone that this printer server joins to                                       | set applezone <a href="#">Apple</a>         |

| Argument     | Description                                                             | Example                       |
|--------------|-------------------------------------------------------------------------|-------------------------------|
| printertype1 | The type of the printer attached to this printer server                 | set printertype1 LaserWriter  |
| SMBDG        | The name of the SMB group name that this printer server joins to        | set SMBDG default             |
| SNMPC        | The administrator contact information of this printer server for SNMP   | set SNMPC sbdjohn@hotmail.com |
| SNMPL        | The installed location of this printer server for SNMP                  | set SNMPL Room301             |
| port1        | The port name of this printer server                                    | set port1 lpt1                |
| DHCPS        | Enable or disable the DHCP server.<br>The value should be "disabled" or | set DHCPS disable             |

|           |                                                                                              |                       |
|-----------|----------------------------------------------------------------------------------------------|-----------------------|
|           | "enabled".                                                                                   |                       |
| DHCP      | Enable or disable to get dynamic IP by DHCP.<br>The value should be "disabled" or "enabled". | set DHCP disable      |
| appletalk | Enable or disable AppleTalk printing<br>The value should be "disabled" or "enabled".         | set appletalk disable |
| SMBD      | Enable or disable SMB printing<br>The value should be "disabled" or "enabled".               | set SMBD enable       |
| SNMP      | Enable or disable SNMP management protocol<br>The value should be "disabled" or "enabled".   | set SNMP enable       |
| IPX       | Enable or disable NetWare Bindery printing<br>The value should be "disabled" or "enabled".   | set IPX enable        |
| LPD       | Enable or disable LPR printing<br>The value should be "disabled" or "enabled".               | set LPD enable        |
| IPP       | Enable or disable IPP printing<br>The value should be "disabled" or "enabled".               | set IPP enable        |
| RAW       | Enable or disable RAW printing<br>The value should be "disabled" or "enabled".               | set RAW enable        |

## **9.5 Other Commands**

### **9.5.1 ipconfig**

“ipconfig” command is used to quickly get the IP settings (IP, subnet mask, default gateway) of the printer server:

```
admin# ipconfig

IP_ADDR=192.168.2.2

SUBNET_MASK=255.255.255.0

DEFAULT_GATEWAY=192.168.2.254
```

### **9.5.2 reboot**

“reboot” command is used to restart the printer server:

```
admin# reboot
```

### **9.5.3 exit**

“exit” command is used to leave the printer server telnet management:

```
admin# exit
```

### **9.5.4 help**

“help” command is used to list all telnet management commands of the printer server:

```
admin# help

set argument value
```

get argument

ipconfig

reboot

exit

## 10. IPP Printing

## **10.1 Introduction**

IPP (Internet Printing Protocol) Printing provides a convenient way of remote printing service by TCP/IP. The printer server can support IPP printing by default. It is needless to do any setting. Any PC that can support IPP printing, for example Windows 2000/XP, can directly uses the printer server by IP. By using the IPP printing, you can share the printer to all the PC's that can access the printer server by IP. You can even share your printer to Internet users.



## 10.2 System Setup

### 10.2.1 Printer server Side

It is needless to do any setting on the printer server side. Make sure the printer server has correct IP settings. If you want to share the printers to Internet users, you have to set a real IP to the printer server. You also have to make sure that any gateway; router or firewall does not block IPP protocol if you have these gateway devices installed in your network.

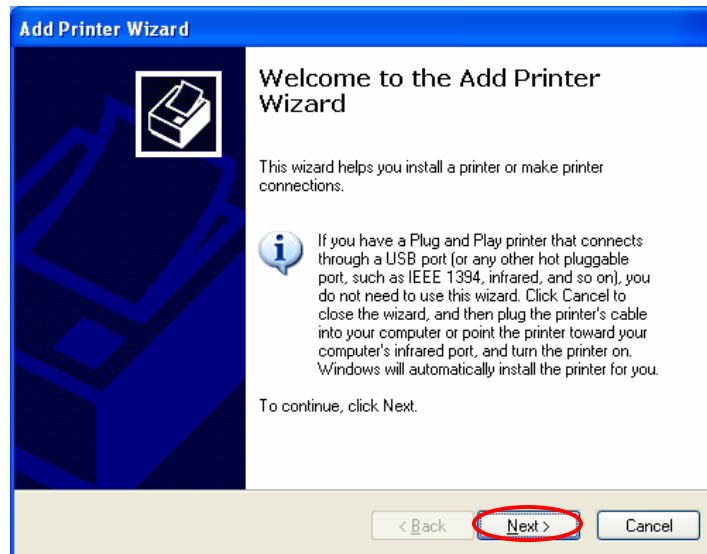
### 10.2.2 Client Side

You only need to perform Window's standard **Add New Printer** procedure.

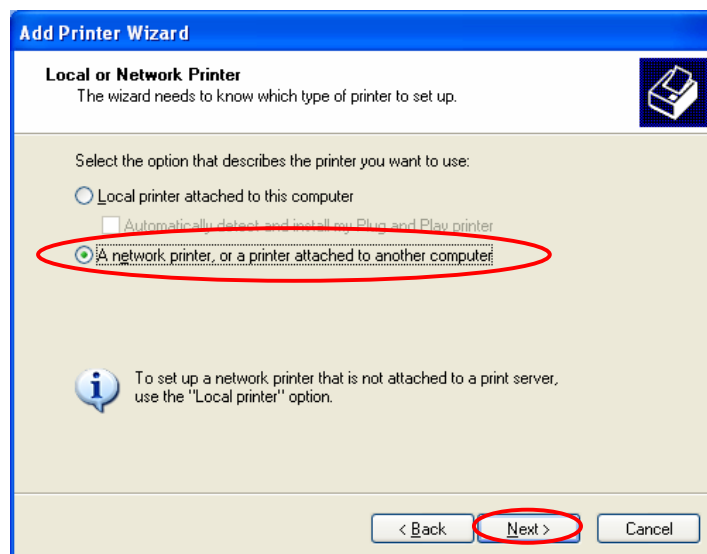
Step1. Click "Start", choose "Settings" and select "Printers and Faxes".

Step2. Click "Add a Printer".

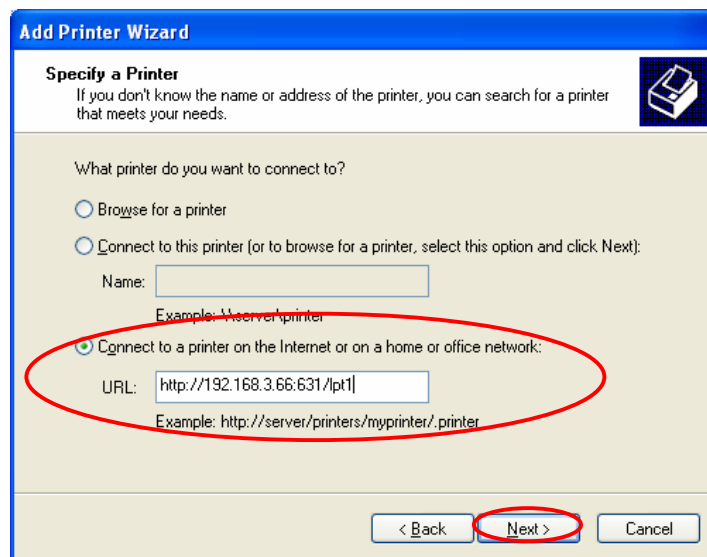
Step3. The "Add Printer Wizard" is displayed. Click "Next".



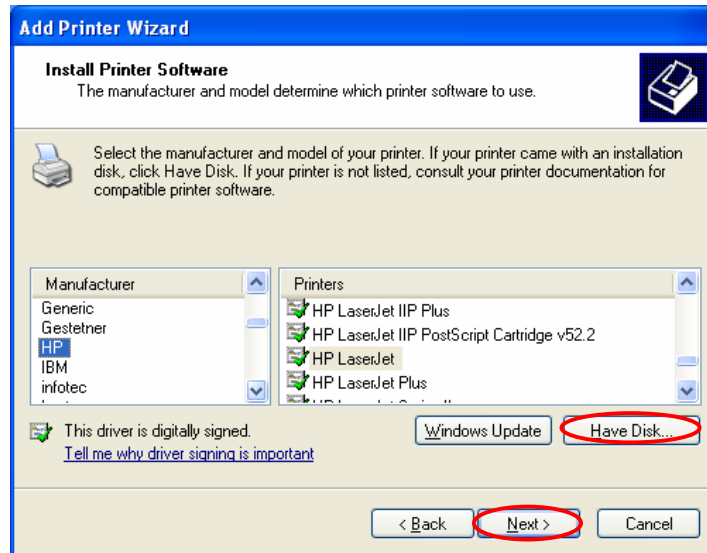
Step4. Select "A network printer, or a printer attached to another computer". Click "Next".



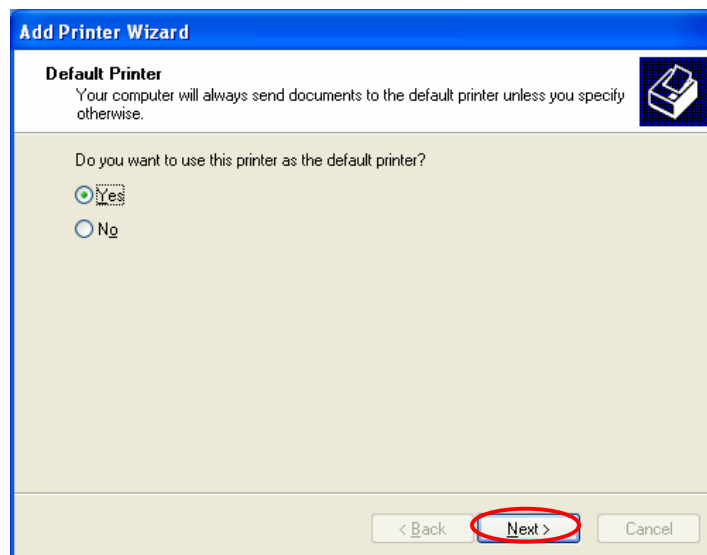
Step5. Select “Connect to a printer on the Internet or on a home or office network” and enter the URL of printer server. The URL format is “http://IP:631/Port Name”. The IP should be the printer server’s IP. The number 631 is IPP standard port number. Port Name is the port name of printer server that your printer is connected to. The default port name is “lpt1”. One example of the URL is http://192.168.3.66:631/lpt1. After entering the URL of printer server, click “Next”.



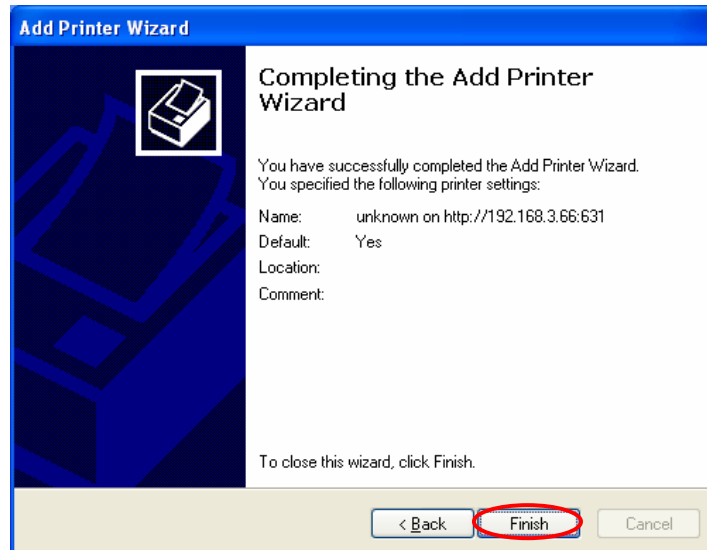
Step6. Select a suitable printer manufacturer and the printer model and click “Next”. If your printer is not in the list, click “Have Disk...” to install the driver of the printer. After installation, the printer model will be added to the list.



Step7. Choose to set the print whether as a default printer or not. Click “Next”.



Step8. You have added the network printer to the PC successfully. The information of the printer is displayed in the windows. Click "Finish".

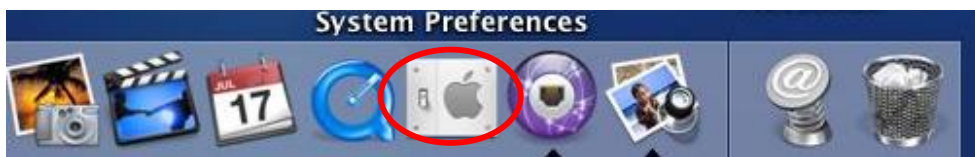


## 11. LPR Setting in MAC OS

LPR Printing (Line Printer Remote technology) allows Macintosh computers to connect to printers via TCP/IP. LPR Printing can be set up on any Macintosh with version 9.x above.

To enable LPR Printing in Macintosh, please follow the procedures below.

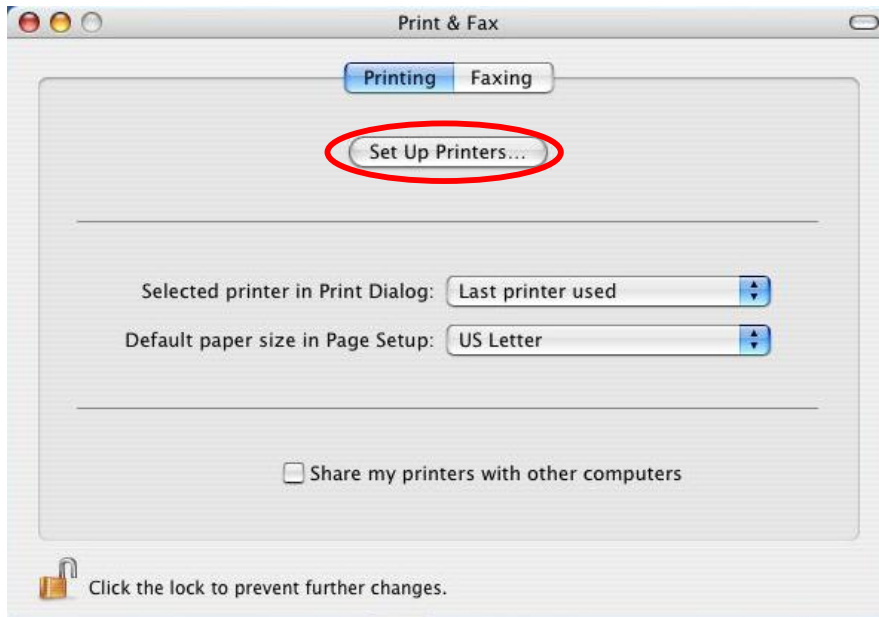
Step1. In the Desktop, click "System Preferences".



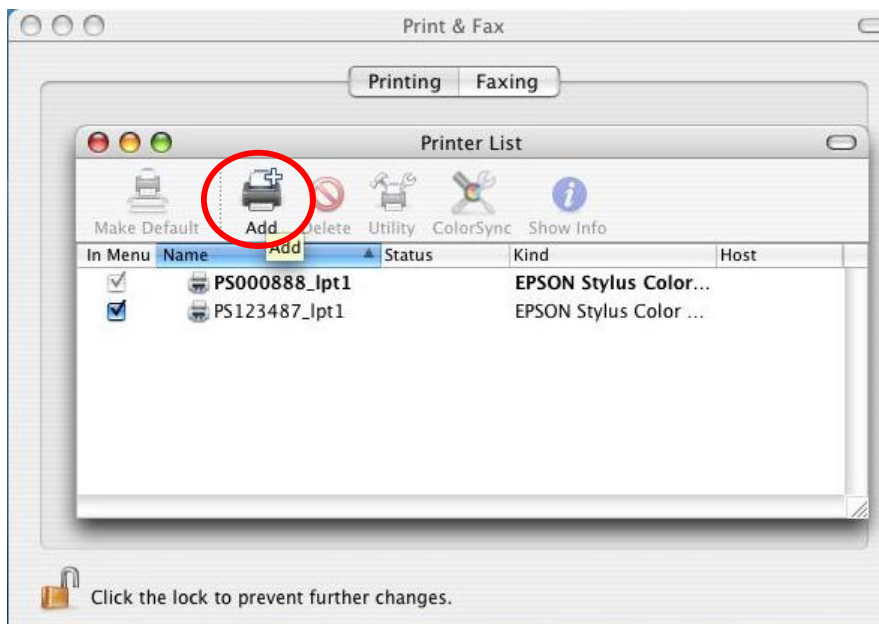
Step2. Click "Print & Fax".



Step3. From the "Print & Fax" screen, click "Set Up Printers...".



Step4. Click "Add" to add the new Printer server through TCP/IP.



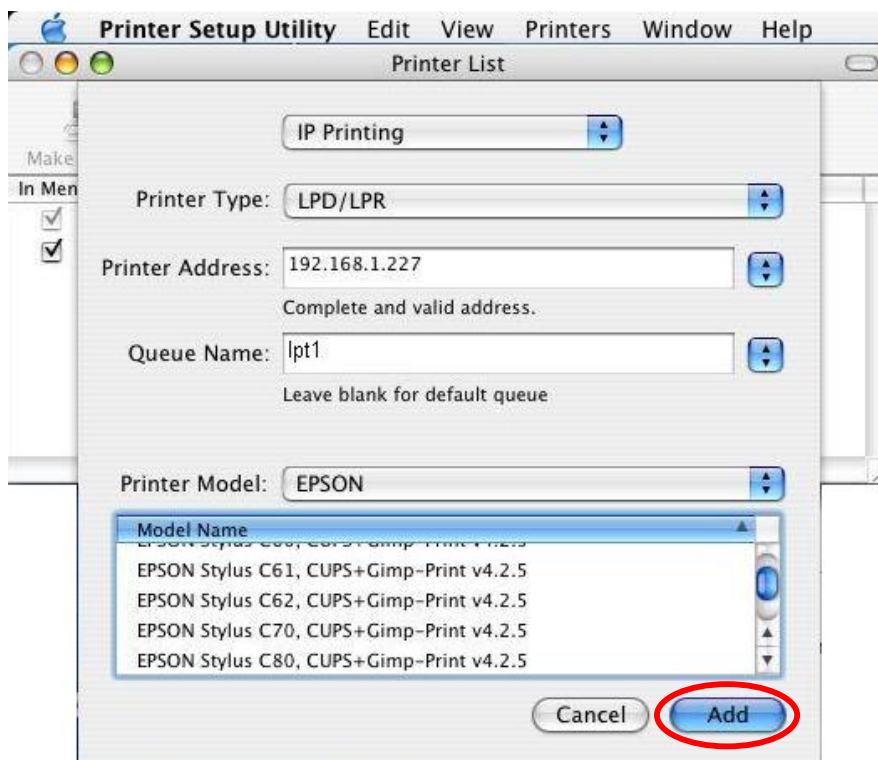
Step5. Enter the “Printer Type”, “Printer Address” and “Queue Name” and select the “Printer Model” to setup the Printer server. Click “Add” to continue.

Printer Type: LPD/LPR

Printer Address: Input the IP Address of the Printer server

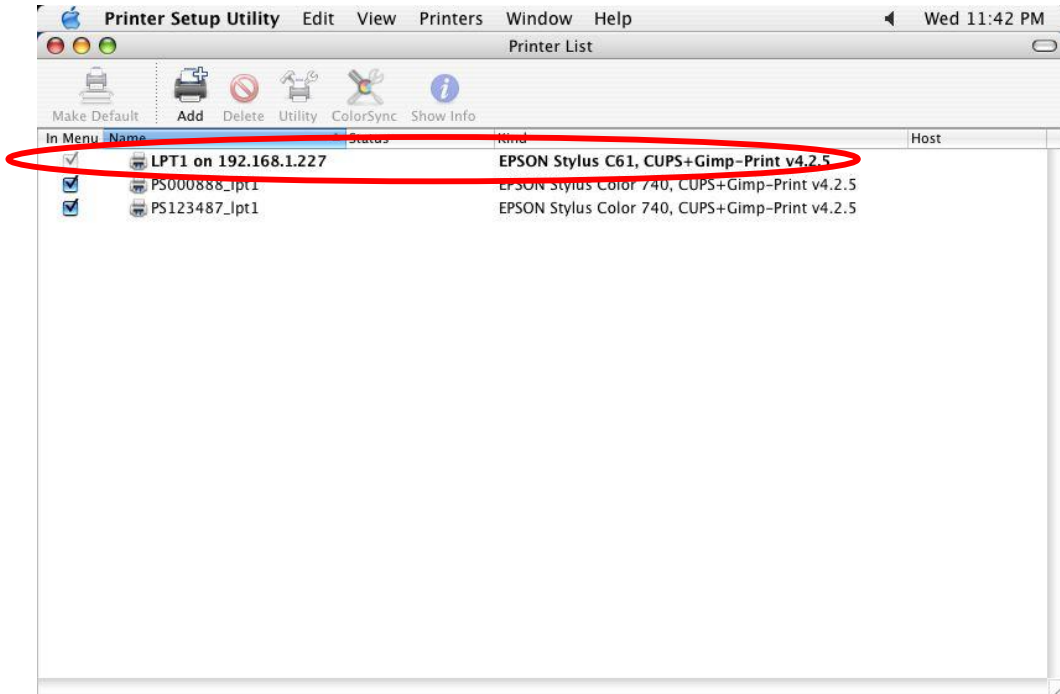
Queue Name: The queue name of the Printer server is “lpt1”

Printer Model: Select the Printer Model that is attached to the Printer server.

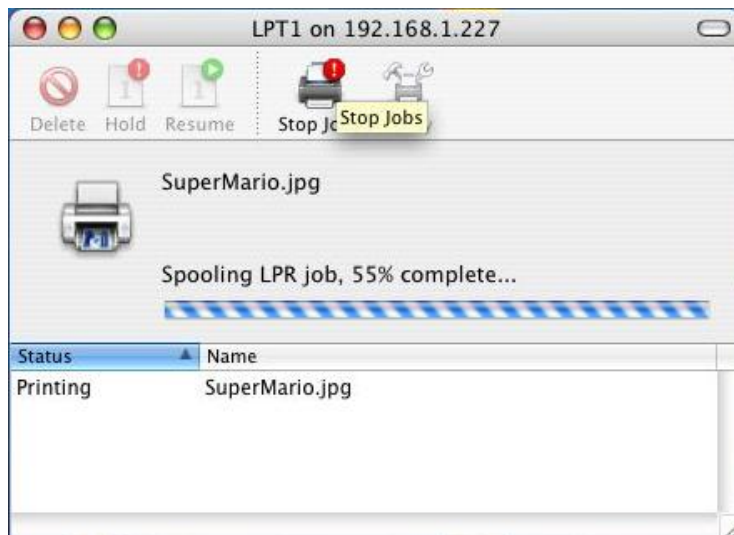




Step6. The Printer server is installed completely. You can see it in the "Printer List".

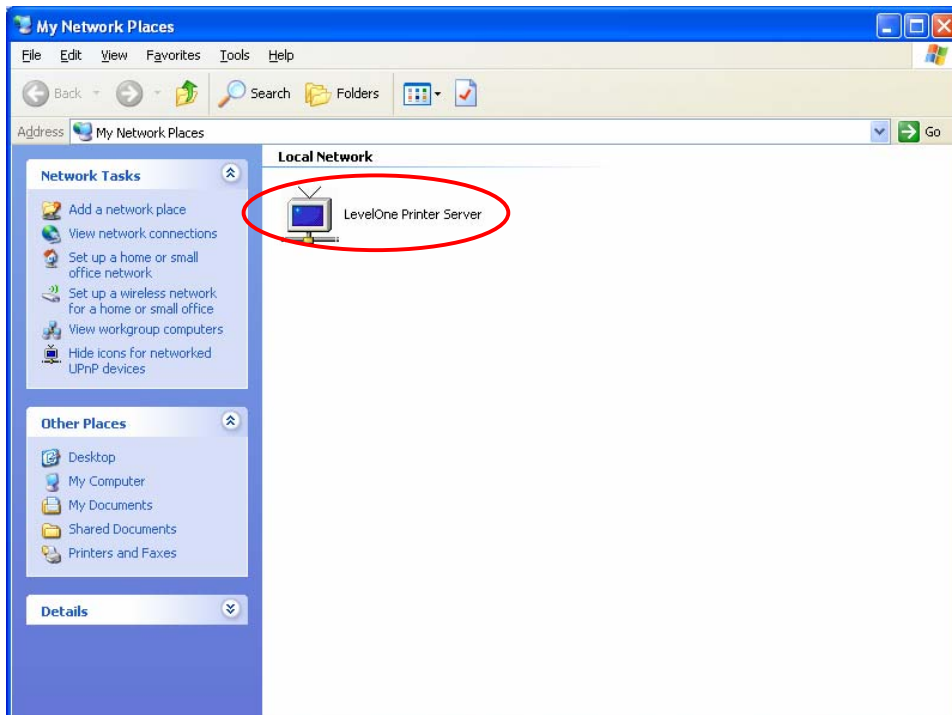


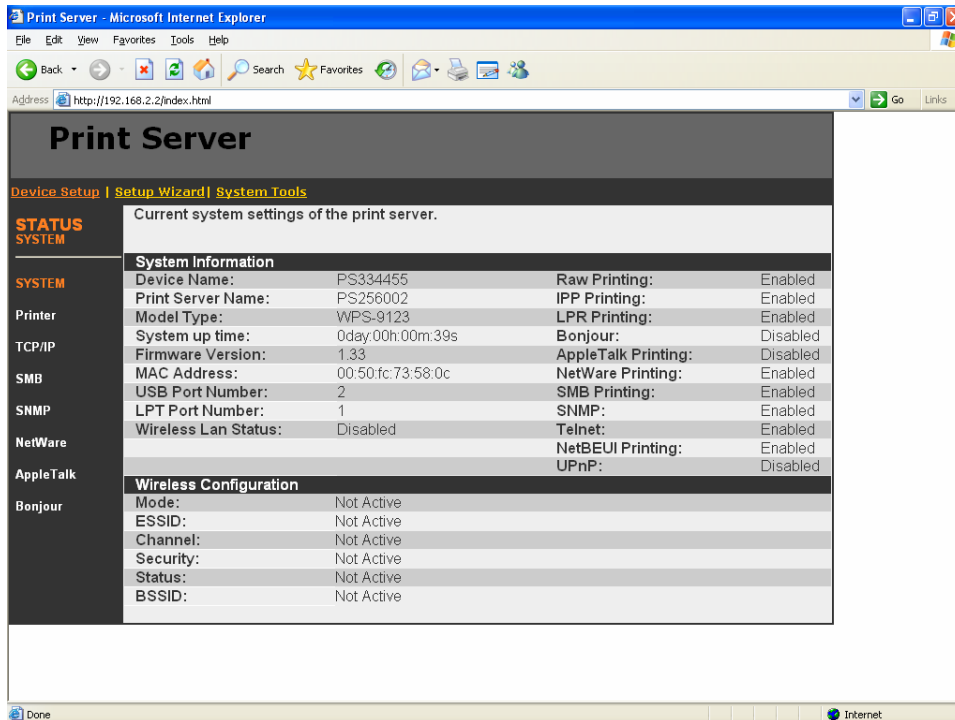
Step7. You can print a file to check whether the Printer server is installed successfully.



## 12. UPnP Setup

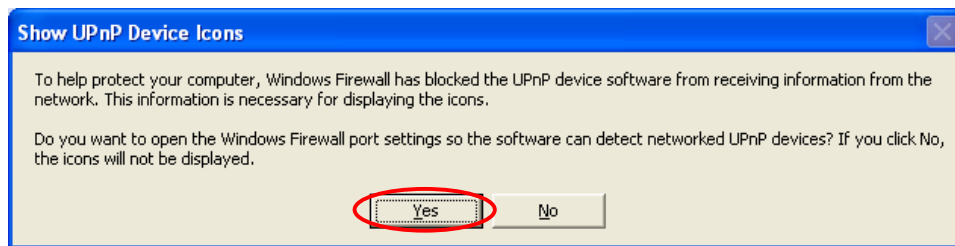
When the UPnP function is enabled, the printer server can be detected by UPnP compliant system such as Windows XP. The printer server will be displayed in the Neighborhood of Windows XP, so you can directly double click the printer server or right click the printer server and select "Invoke" to directly get into the web page of the printer server for configuration.





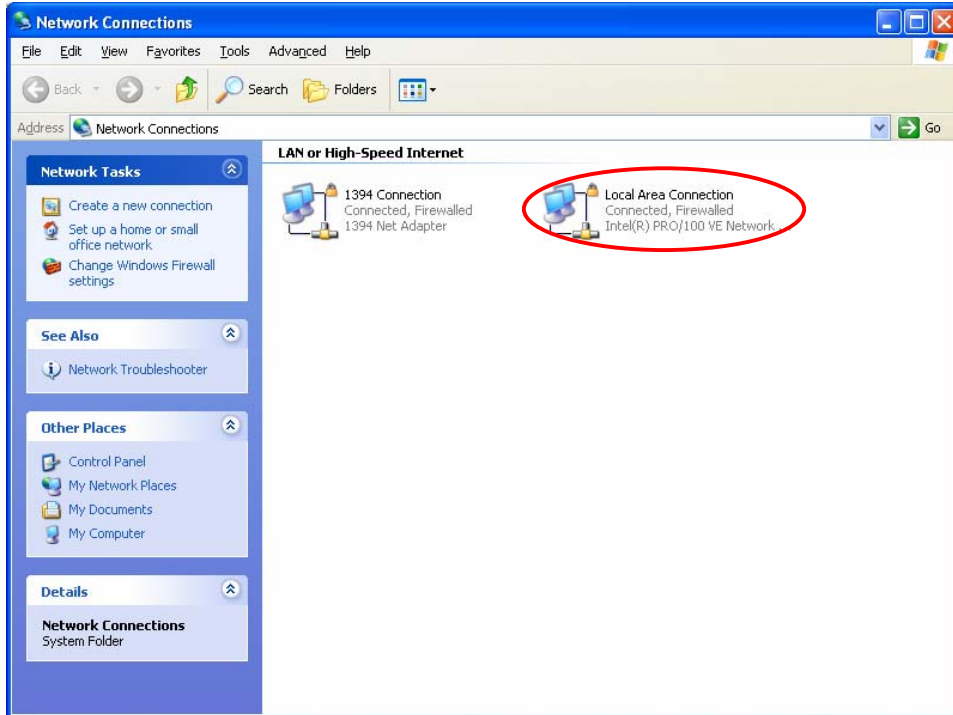
## Enable UPnP in Windows XP SP2

If you can't find the printer server in the Neighborhood of Windows XP SP2 or you have seen the following message when you double click the printer server. You have to check if UPnP function is blocked by the firewall. Please follow the steps below to enable it.

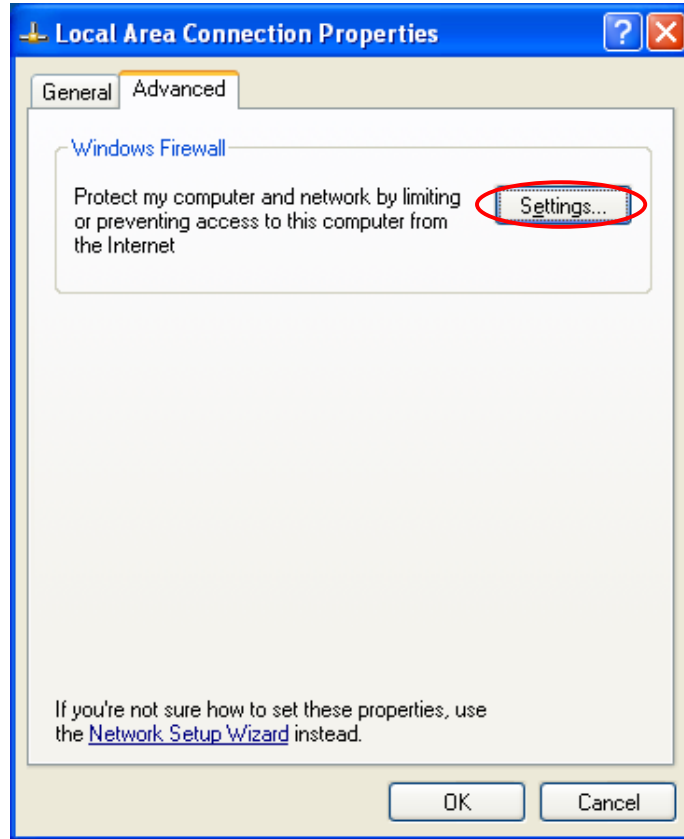


Step1. Click "Yes" on the above message or click "Start", choose "Settings" and select "Network Connections" to enable UPnP manually.

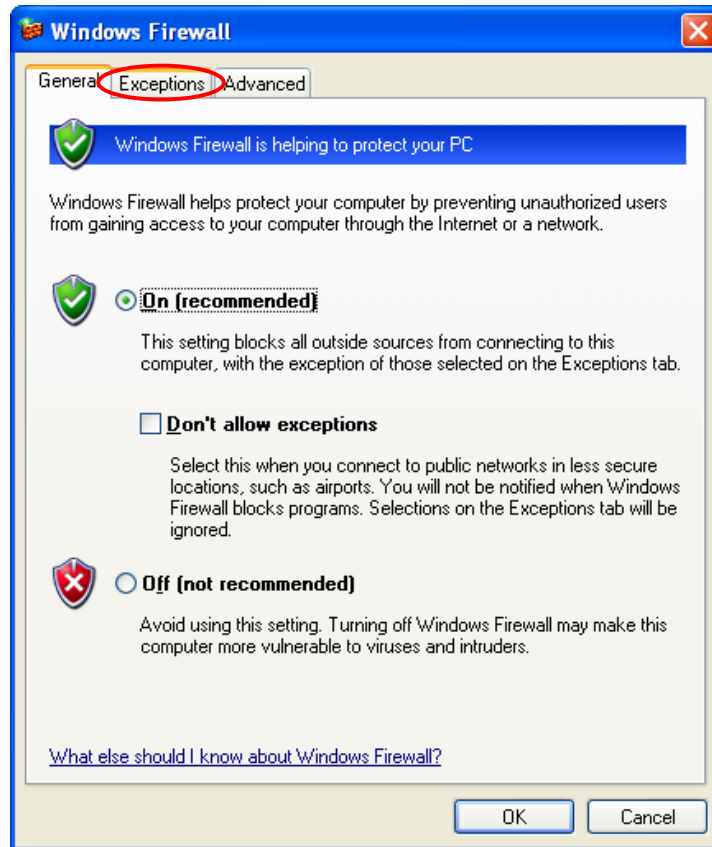
Step2. Right click the "Local Area Connection" and select "Properties".



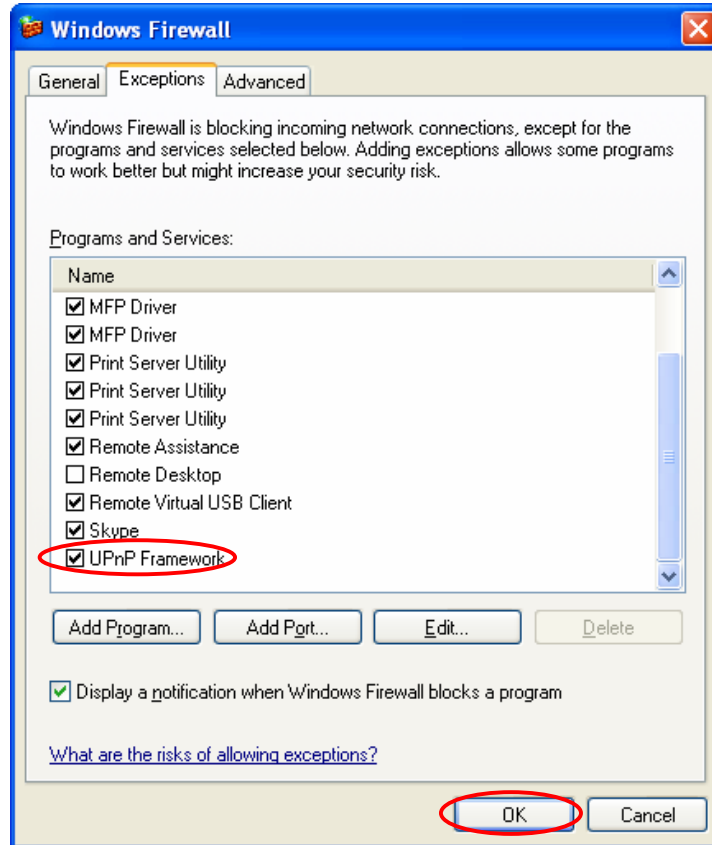
Step3. In the “Local Area Connection Properties”, select “Advanced” option menu and click “Settings”.



Step4. The “Windows Firewall” screen will be popped up, select “Exceptions” option menu.



Step5. Enable “UPnP Framework” from the “Programs and Services list” and click “Ok”.



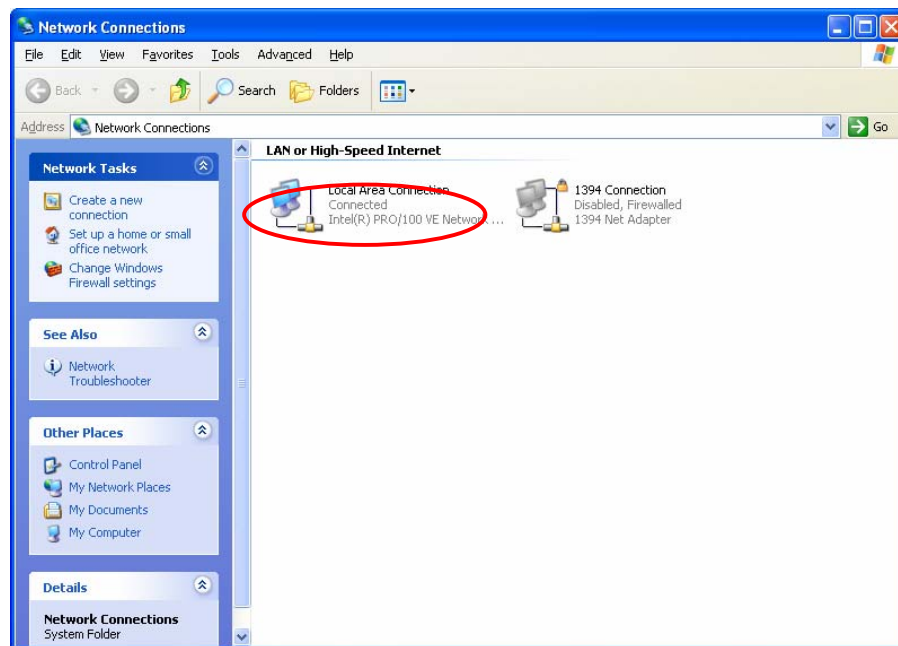
## 13. Windows XP SP2 Setup

In Windows XP SP2, XP SP2's firewall would block the unknown communications. This printer server has allowed the communications data passed through the XP SP2's firewall.

In case that you do not find any printer server listed on the "Available Ports" in "Network Ports Quick Setup", please follow the steps below.

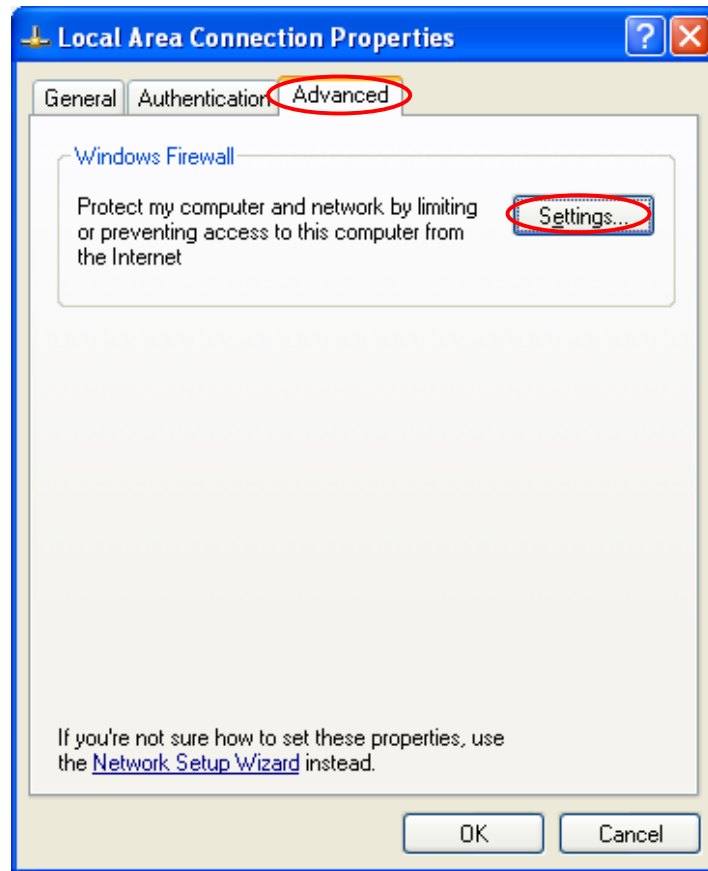
Step1. Click "Start", choose "Settings" and select "Network Connections".

Step2. Right click "Local Area Connection" and select "Properties".

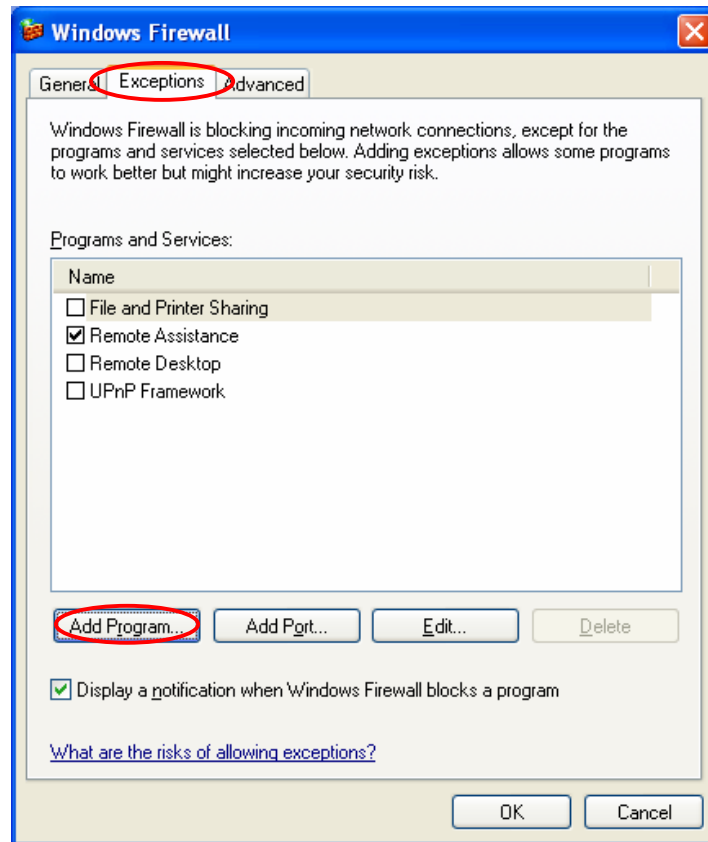




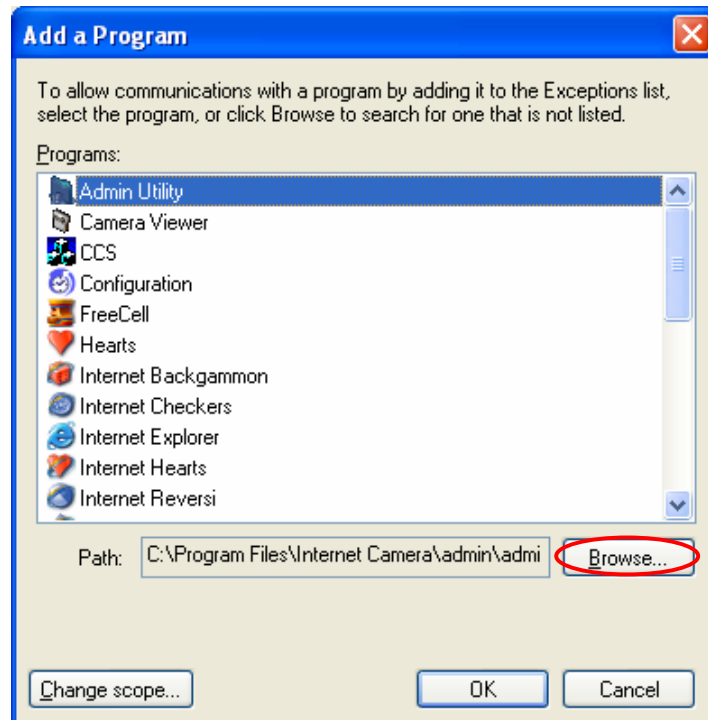
Step3. Select "Advanced" tab and click "Settings..."



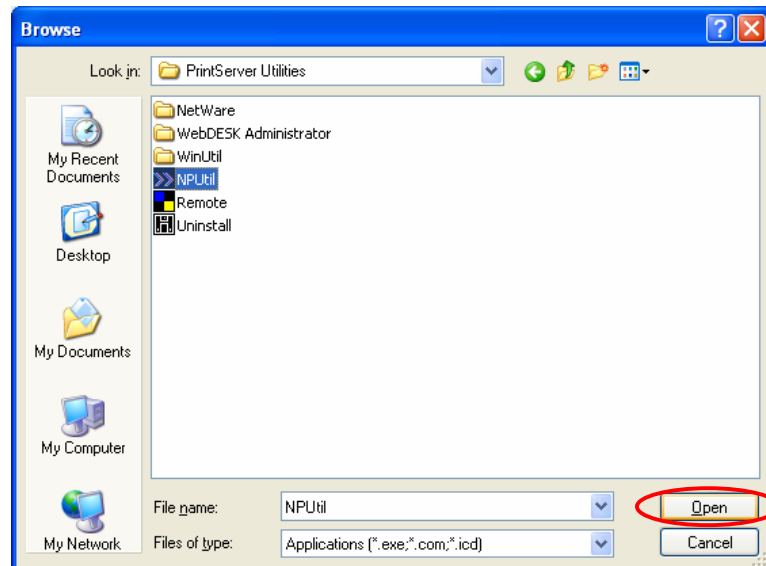
Step4. Select “Exceptions” tab and click “Add Program...”.



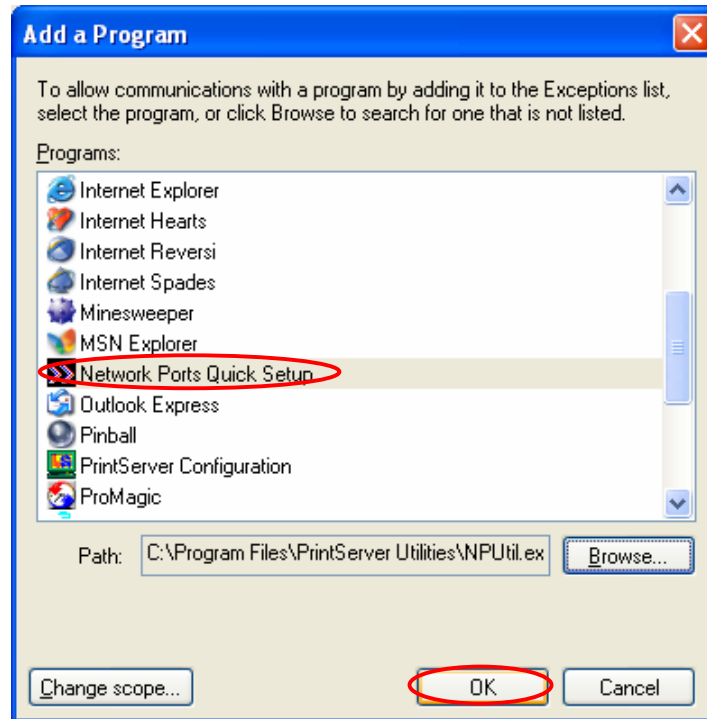
Step5. Click “Browse” to add a new program.



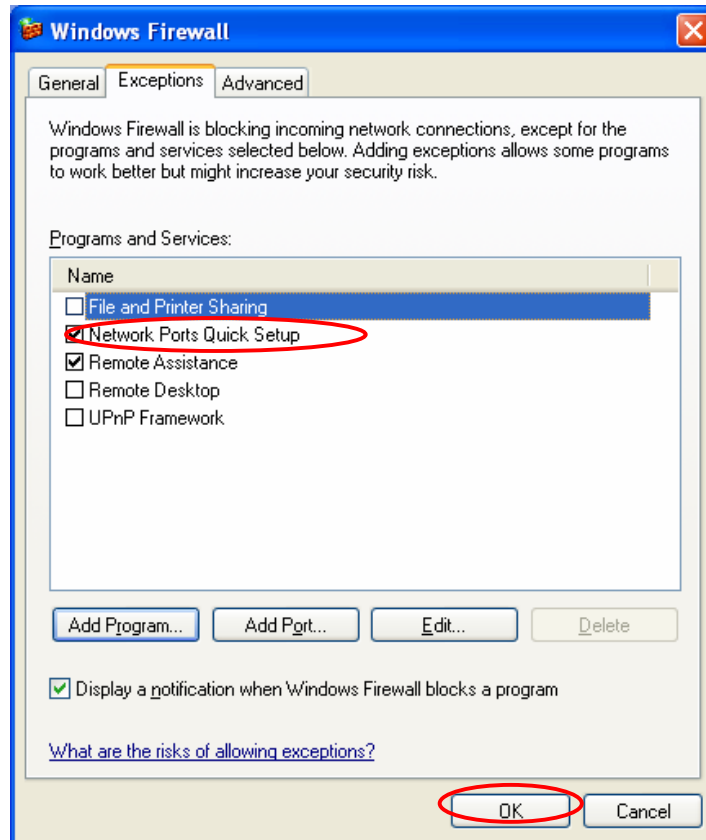
Step6. Open the “NPUtil” file from “C:\Program Files\PrintServer Utilities” (where C:\ is the system drive).



Step7. A new program "Network Ports Quick Setup" is displayed in the list, click "Ok".



Step8. Click "Ok". You have completed the setting. The Windows XP SP2 will allow the incoming network connections activated by the program.



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