

User's ▶▶▶▶▶ Manual

**1 Parallel Port + 2 USB
10/100M Internet Print Server**

HPS12U



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1.1 Product Introduction

Congratulations on purchasing Hawking's HPS12U 2 USB + 1 Parallel Port 10/100M Internet Print Server. The Hawking HPS12U is a powerful and convenient network printing solution that will connect your USB and parallel printer(s) to a network. The HPS12U has a 10/100Mbps auto-sensing port, allowing you to attach it to a 10Base-T or 100Base-TX network without the need for a dedicated PC print server. The HPS12U also supports multiple servers and multiple protocols, providing you with the capability to print from anywhere, from any computer and from any application.

The HPS12U print server supports IPX, TCP/IP, and AppleTalk protocols. It also supports the most common network operating systems and protocols including Windows 95/98/Me, Peer-to-Peer Printing, Windows NT/2000/XP, NetWare, Unix/Linux, MAC OS X, etc.

With the HPS12U Installation Wizard for Windows, you can easily and instantly adjust the HPS12U's settings for your printing environment, and start enjoying the fantastic features provided by this print 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 print server quickly, please refer to the Quick Installation Guide that comes along with this print server.

1.2 Product Package

Package Contents

The following items are packaged with your HPS12U 2 USB + 1 Parallel Port 10/100M Internet print server:



HPS12U Print Server



One CD-ROM



Quick Installation Guide



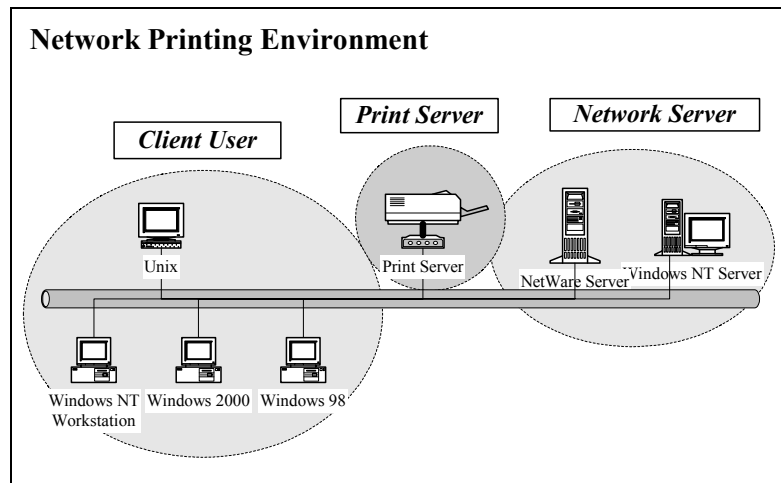
One power adapter

1.3 Network Printing Architecture

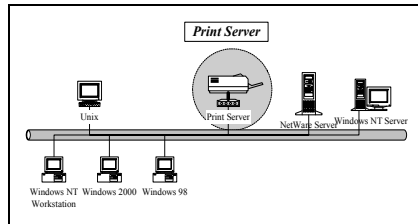
This section illustrates how a print server functions over a network environment. Before you install and use the HPS12U print server, it is strongly suggested that you read this section completely and select only the chapters that pertain to your specific operating system.

Below is a diagram of a typical network with a print server installed. There is a main server, several client computers, print server, along with an optional network server. Below are the three components of this diagram:

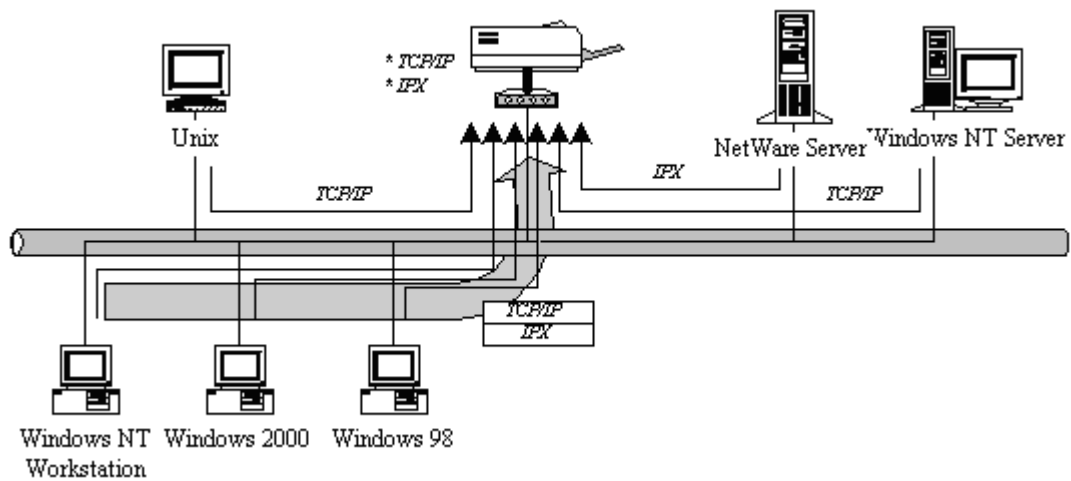
- Print Server
- Client User
- Network Server (optional)



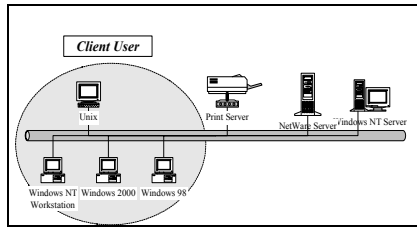
1.3.1 Print Server Network Functions



Because the HPS12U print server supports IPX, TCP/IP, and AppleTalk protocols, any networked computer can print directly through the print server from any of the installed protocols.

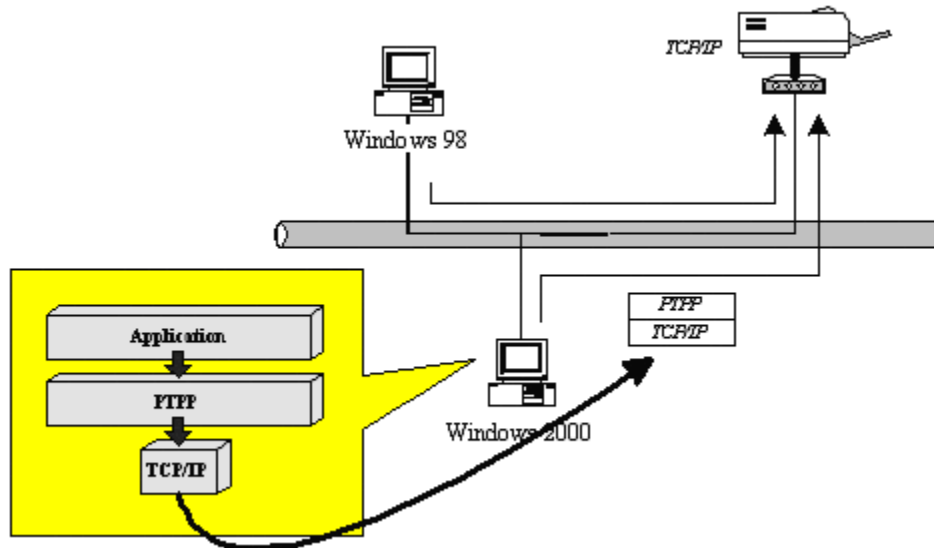


1.3.2 Network Printing Functions for Clients



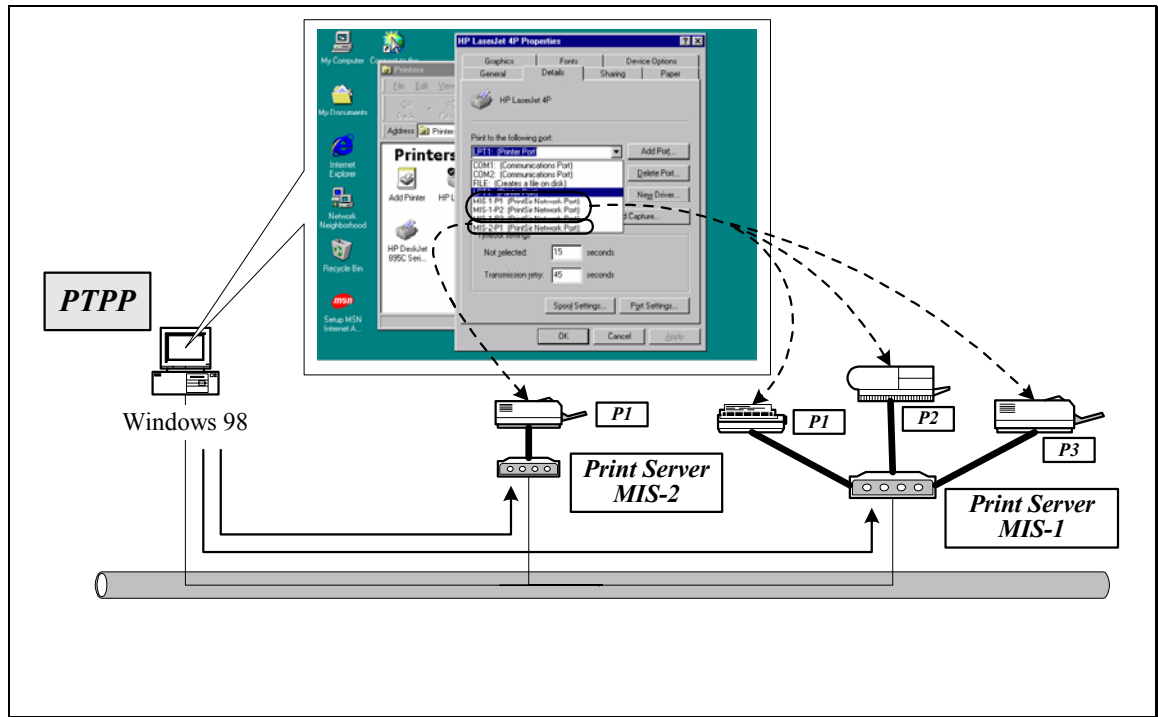
Windows 95/98/Me/NT/2000/XP

The HPS12U provides a PTPP (Peer-to-Peer Printing) driver and utilities for Windows 95/98/NT/2000/XP users. The PTPP (Peer-to-Peer Printing) supports the TCP/IP protocol.



In the client installation procedure, after the PTPP (Peer-to-Peer Printing Driver) is installed into Windows, the client or administrator system will automatically (manual configuration is also allowed) search through all of the print servers on your network and add your selected print

servers' printing port to your Windows printing port availability list. (see diagram below)



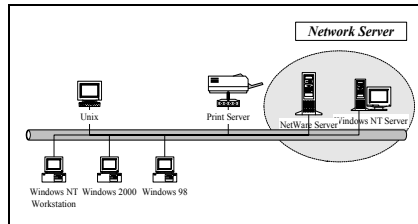
UNIX / Linux

UNIX (includes HP/UX, SCO Unix, SunOS, Solaris, Unixware DECUnix, IBM AIX and others) and Linux use the system-standard LPR to print to your HPS12U.

MAC OS

The MAC OS can use the system-standard AppleTalk network to print through your HPS12U.

1.3.3 Network Printing Functions for a Network Server



Common network servers use the following operating systems:

Windows NT/2000

The HPS12U provides a PTPP (Peer-to-Peer Printing) driver with utilities for Windows NT and Windows 2000. After PTPP is installed, the server can directly print to the HPS12U print server. Adding this printing function into your Windows NT/2000 Server allows for print queuing, user authority management, and many other advanced features.

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

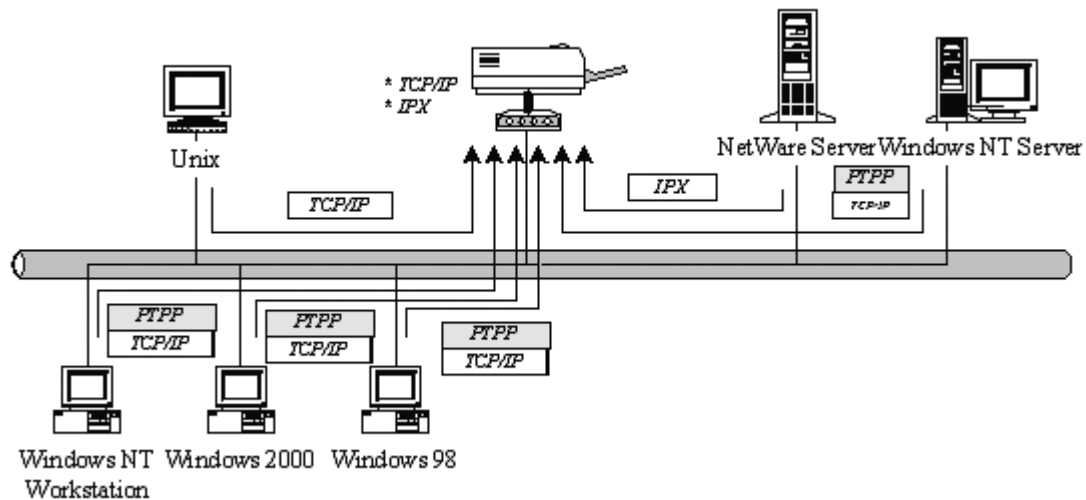
In a NetWare environment, the HPS12U offers various printing modes including print queue, remote printer, etc.

1.4 Network Printing Environment

Common network printing environments use the following:

Windows Peer-to-Peer Network

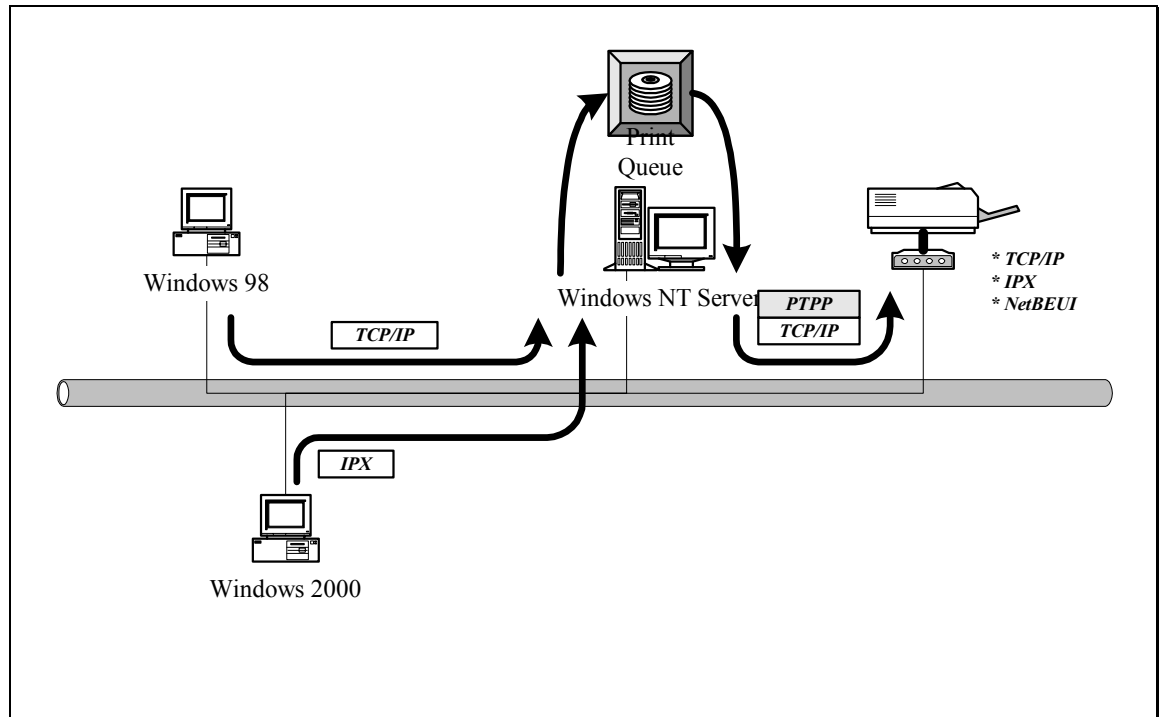
The client's PTPP driver will use TCP/IP protocol to print to the HPS12U.



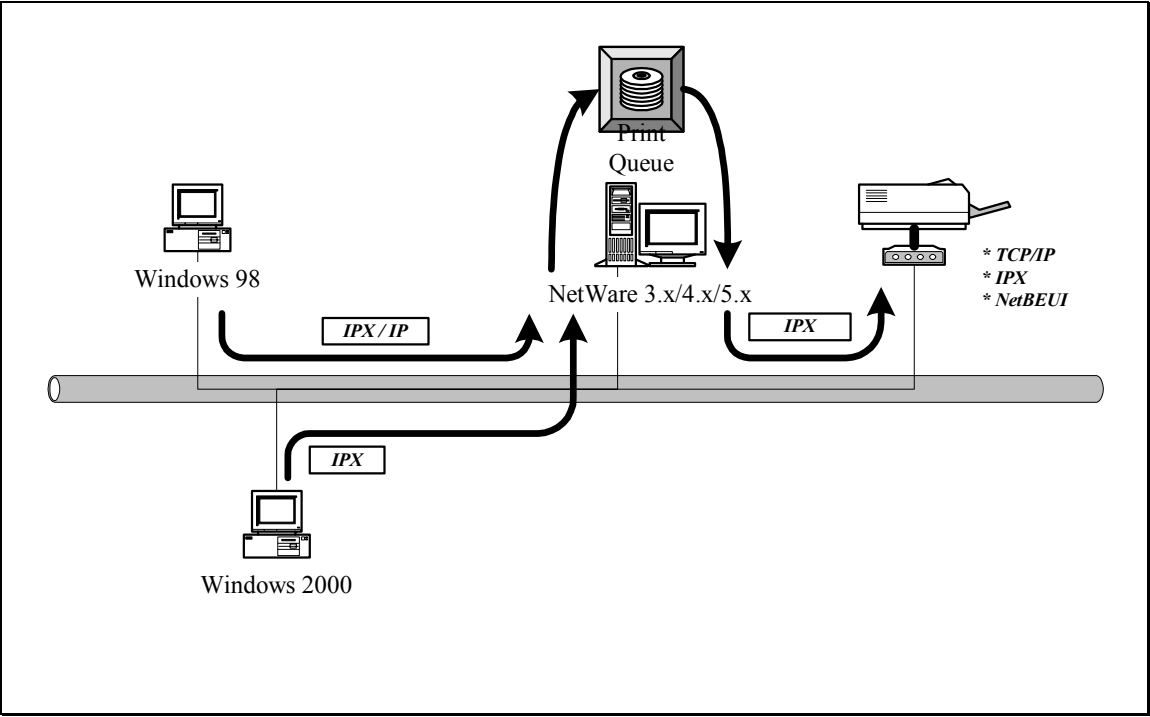
Windows NT/2000 Network

The network printing function will become available after the PTPP driver is installed into Windows NT/2000. Adding this printing function for your Windows NT/2000

Server enables print queuing, user authority management, and many other advanced features.



NetWare Network (see below)



1.5 Contents of the User's Manual

Chapter 2 explains the HPS12U's hardware installation and configuration.

The following chapters 3, 4, 5, and 6 introduce configuration features for each of the following operating system networks:

Chapter 3. Windows Peer-to-Peer Network

Chapter 4. Windows NT/2000 Server-Based Network

Chapter 5. NetWare Network

Chapter 6. UNIX System Network

You may select the appropriate chapters and sections to read depending on your networks printing requirements.

Chapter 7 and chapter 8 introduce the HPS12U's management and configuration utilities for Windows.

Chapter 9 introduces the HPS12U's IPP Printing functions and setup procedure. IPP Printing provides a convenient way to print documents across the Internet through the use of Windows NT/2000/and XP native IPP protocol.

1.6 Firmware & Printing Function

The print 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

2. Hardware Installation

1. Unpack the HPS12U's packaging and check all the items listed in section 1.2.
2. Connect the HPS12U to the printer you want to share on your network.
3. Connect the power adapter to the print server.
4. The print server will perform the Power-On-Self-Test (POST) after it is powered on. The Status LED will flash for up to one minute to indicate that the print server is ready.

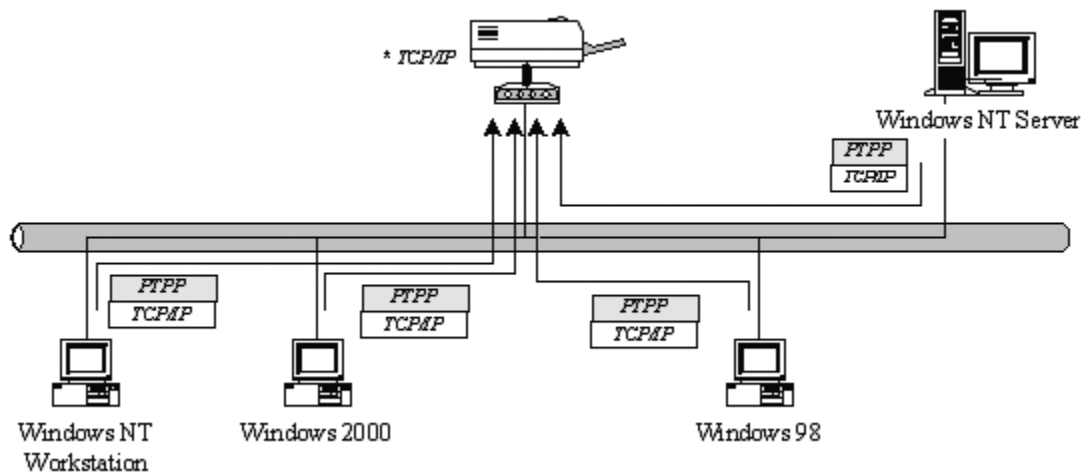
NOTE1 : You MUST use the power adapter shipped with the HPS12U print server, do NOT use any other power adapter from any other sources.

NOTE2: To prevent any compatibility problems between the HPS12U and other printers, it is recommend that you power on the print server before the printer.

3. Windows Peer-to-Peer Network

3.1 System Architecture

The HPS12U supports Windows Peer-to-Peer network printing mode, which is suitable for most medium and small network environments. Through Hawking's quick and simple installation procedure, users can immediately enjoy the convenience of network printing.



The installation procedure is separated into the following two parts:

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

System administrators must :

- a) Install the administrator's utilities into his/her computer.
- b) Configure the print server from the administrator's configuration utility.

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

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

In addition, after PTPP is installed, the system will automatically search for all print servers on the network, and add all printing ports (P 1/P 2/P 3) of the print server into Windows' available printing port list (refer to Network Printing Architecture in section 1.4 for more detailed information).

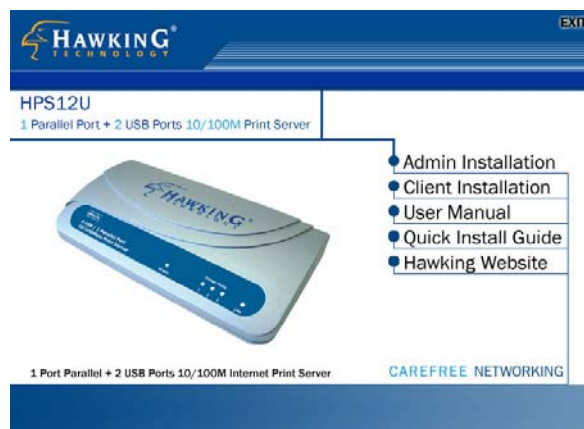
3.2 Administrator Installation and Setup

WINDOWS 95/98/Me/NT/2000/XP

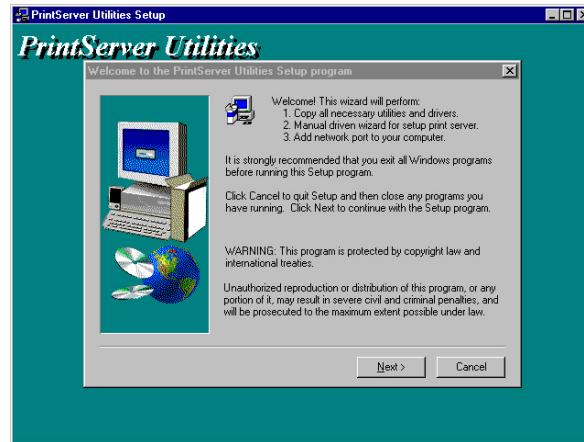
- 1) **POWER ON:** After you have correctly connected your print server to your PC and router, please power on all units.
- 2) Before the installation, please verify that your network protocols are installed on your PC (TCP/IP and/or IPX). If they are not installed, please consult your operating systems manual for instructions on how to do so.
- 3) **INSTALL the Administrator Installation Program:** To install your Print Server administration software, please follow the directions listed below.

1. Insert the **Windows 95/98/Me/NT/2000/XP Setup CD** into your CD-ROM.
(Windows should execute the **Autorun.exe** program automatically. If not, run **Autorun.exe** manually from your CD-ROM drive's root directory).

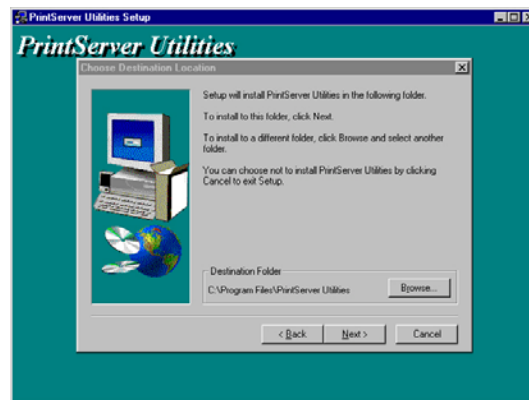
2. The Hawking Installation windows manager will pop up on your screen as follows:



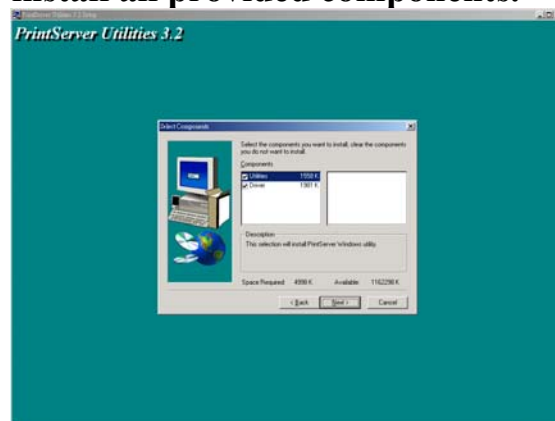
3. Click on “*Admin Installation*” and the “*Utilities Setup*” window will be displayed.



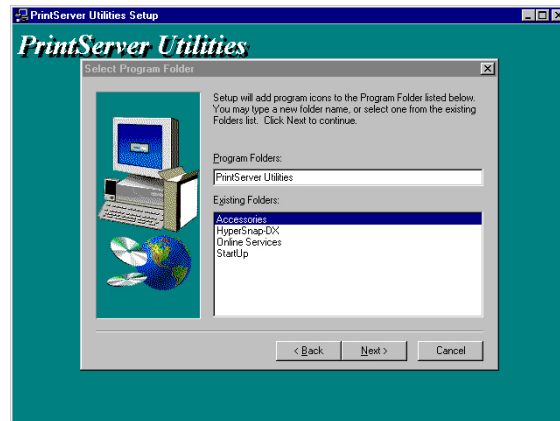
1. Click “Next,” and specify the destination folder where the *HPS12U* utility files will be installed.



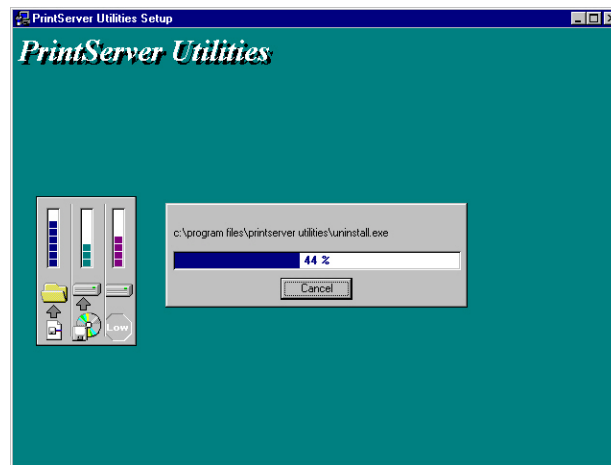
2. Click “Next,” and select the components you want to install. **It is highly recommended to install all provided components.**



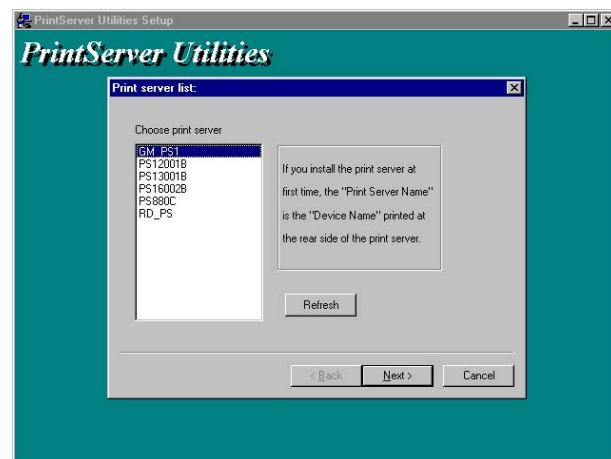
3. Click “Next,” and specify the program folder where the program icons will be added.



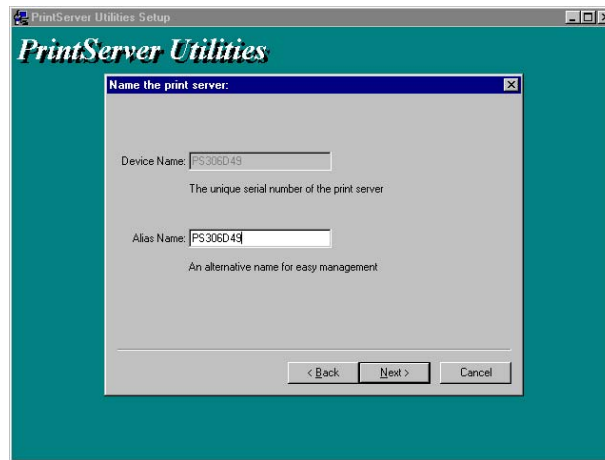
4. Click “Next” to start the utility file installation.



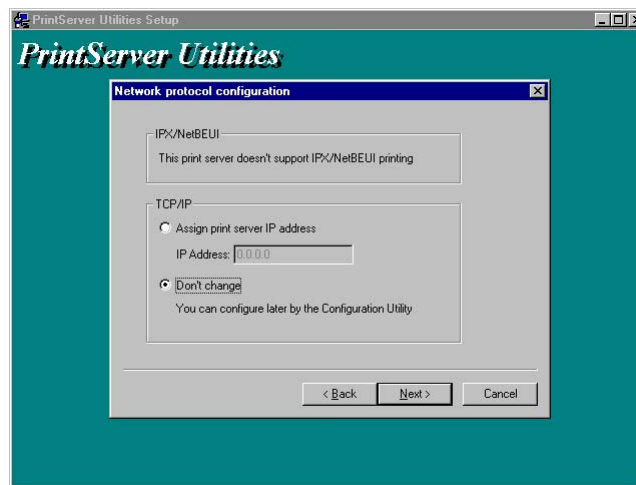
5. The “Print Server Utilities” program will finish installing. **After this installation is complete, the next step will involve configuring your HPS12U.** Click “Next,” and the “Choose Print Server” dialog box will be displayed as follows.



- Click “Next” and a dialog box will prompt you to name your print server. (Please make sure to write down the name you assign to your print server for future use).



- Click “Next” to configure your print server’s network communication protocol.

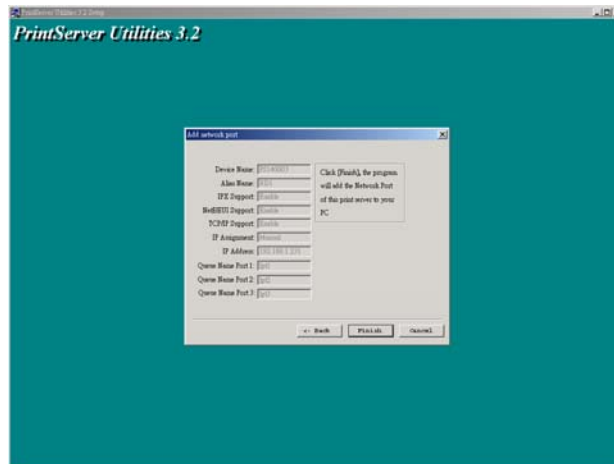


As a system default setting, IPX and NetBEUI protocols are enabled and do not need to be configured.

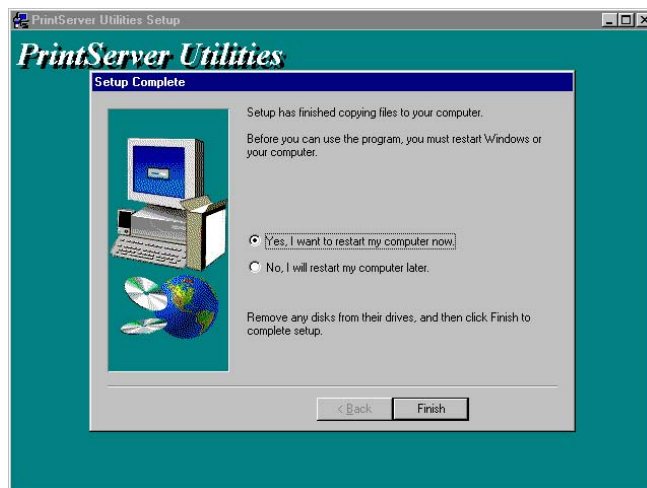
With the TCP/IP protocol, you can either (1) assign a dedicated IP address for your print server or (2) configure it later through the configuration utility software. **(If you choose “Do not change IP – configure later,” there is no effect on your network settings. It is suitable for both Non-IP and IP-enabled networks).**

- Click “Next” and the configuration summary will be displayed in the setup window. You have completed the “Print Server Setup” process and are ready to setup your print server to work with your printer. Please

click “Next” and your system will add the HPS12U’s network port to your PC.



9. The “Installation complete” window will be displayed to indicate that the Administrator Installation procedure is finished.



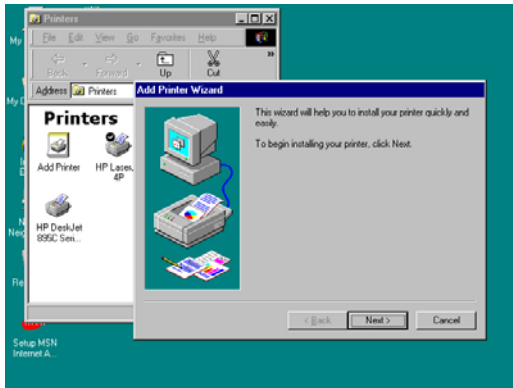
(Please restart your computer for your setup to complete its installation)

Now that you have completed the administrator’s setup, you can perform the “Client Installation” procedure on all client computers in your network.

To set up printing from this administrator’s PC to the print server, please follow the standard “Add Printer” procedure as described in the steps below. Please choose your appropriate operating system and follow the directions to add your printer through your OS.

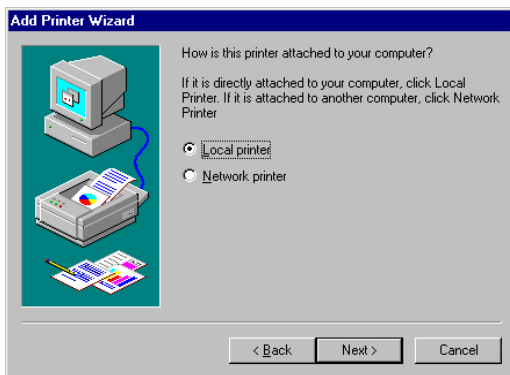
WINDOWS 98/NT/Me/2000

Step1. Click the *Start* button, choose *Setting* ➔ *Printers*

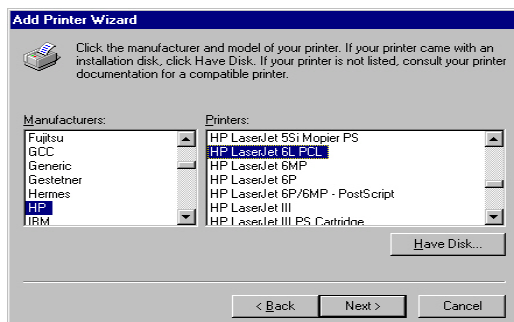


Step2. Double click on *Add Printer*

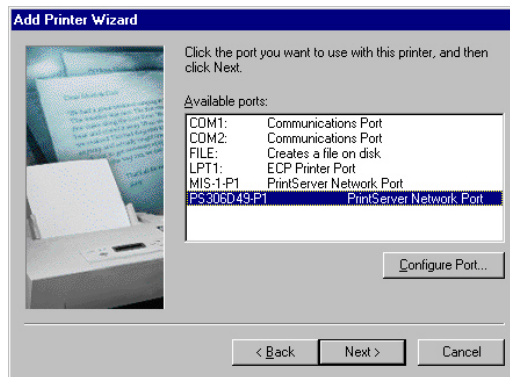
Step3. Select *Local printer* ➔ click *Next*.



Step4. Select your printer manufacturer and model, and then click *Next*.



Step5. Choose the *Print Server's Network Port*, which was created by the administrator or client installation process, and click *Next*.

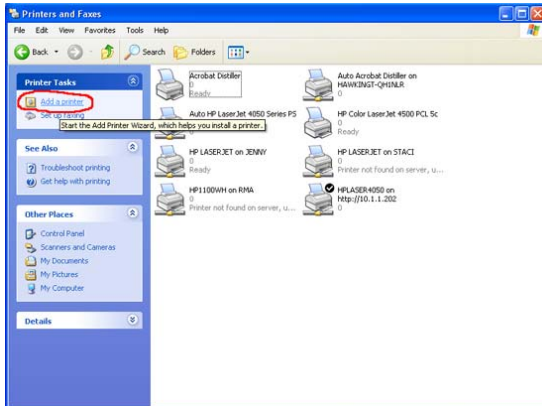


Step6. Complete the rest of the questions to finish the network printer setup.

WINDOWS XP Setup

Step1. Click the **Start** button; choose Control Panel ➔ *Printers and Faxes*

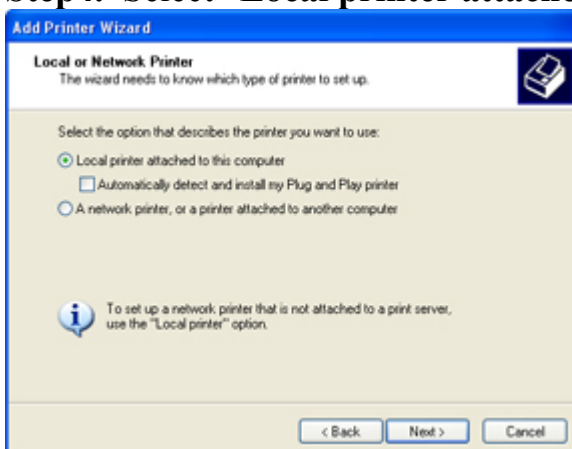
Step2. Click on *Add a Printer*



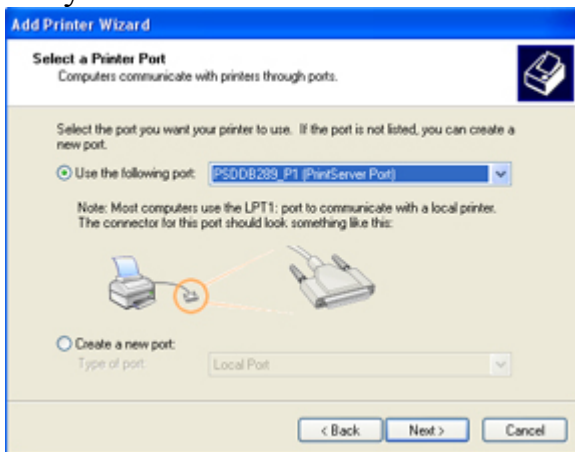
Step3. The **Add Printer Wizard** will appear ➔ Press *Next*.



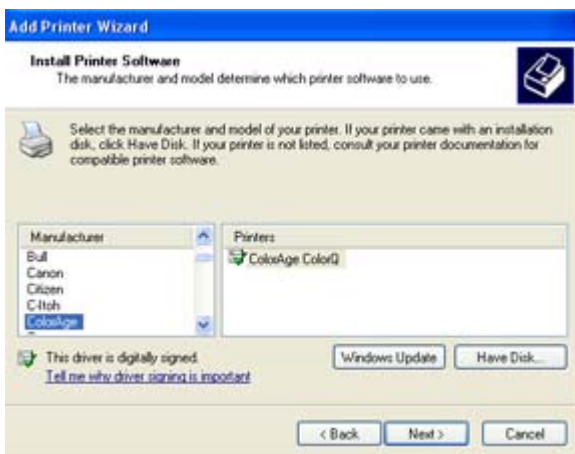
Step4. Select “**Local printer attached to this computer**” ➔ Press *Next*.



Step5. In the “**Select a Printer Port**” window select “**Use the following port**” and drag the selection bar down to your newly created print server entry → Press *Next*.



Step6. Select a suitable printer manufacturer and model, and then click *Next*.



Step7. Please continue through the next couple of installation steps by pressing *Next* until your new printer is added to your computer. Press the finish button to finalize your configuration.

Please repeat “add Printer” steps for every printer attached to the HPS12U.

3.3 Administrator Utilities

After the Administrator Installation is completed, there will be six utilities in print server's Program folder.

Network Ports Quick Setup

- Local printer port management tool (see section 3.5).

Remote Ports

- Remote printer port management tool (see section 3.5).

NetWare Quick Setup

- NetWare quick installation software (see chapter 5).

Print Server Configuration

Uninstall

3.4 Client Installation and Setup

1. Insert the CD shipped along with the HPS12U into your CD-ROM drive. The Autorun.exe program will execute automatically. If it does not start automatically, run Autorun.exe manually from your CD-ROM drive's root directory.
2. The *"Installation Manager"* will be displayed on the screen as follows.



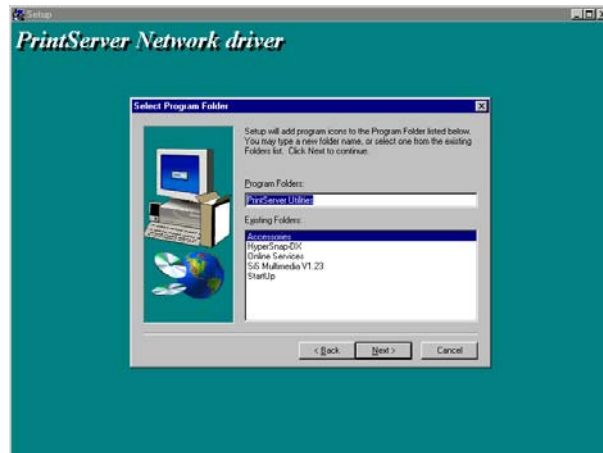
3. Click *"Client Installation"* and the *"Utilities Setup"* window will be displayed.



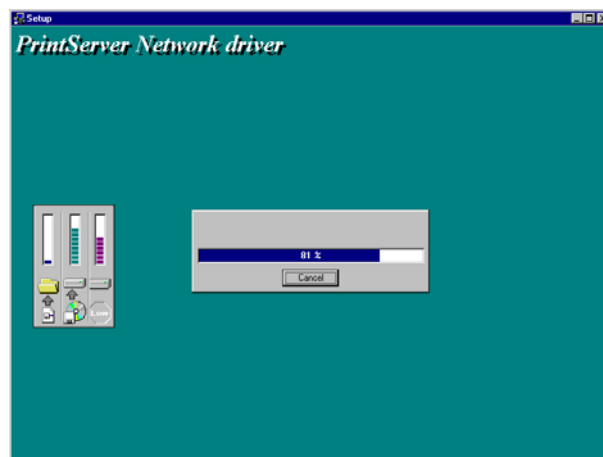
4. Click *"Next"* and specify the destination folder where the utilities will be installed.



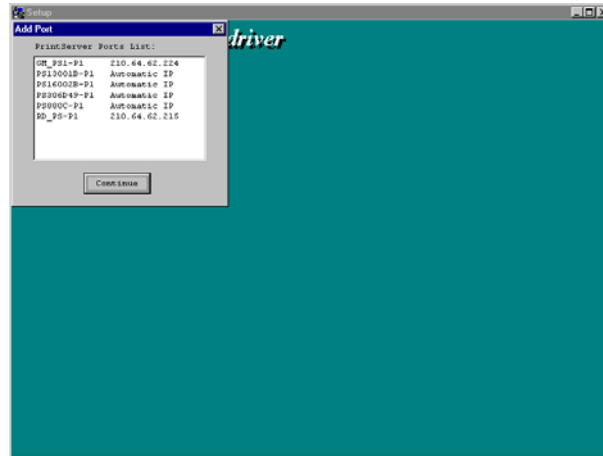
5. Click “*Next*” and specify the program folder where the program icons will be added.



6. Click “*Next*” to start the installation.



7. You have completed the software installation process. Click “*Continue*” and the HPS12U’s network port will be detected on the network and will be added to your PC.



8. The “Installation complete” window will be displayed to indicate that the Client Installation procedure is finished.



You must then perform the Windows standard “Add Printer” procedure, as described below, to add a network printer to your PC.

Step1. Click the *Start* button, choose *Setting* ➔ *Printers*

Step2. Double click the *Add New Printer* ➔ select *Local printer* ➔ click *Next*.

Step3. Select a suitable printer manufacturer and model, and then click *Next*.

Step4. Choose the *HPS12U's Network Port* that was created in the client installation process and click *Next*.

Step5. Complete the rest of the questions by hitting *Next* to finish the network printer setup.

Please make sure to repeat the “add Printer” steps for every printer attached to the HPS12U.

3.5 Client Utilities

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

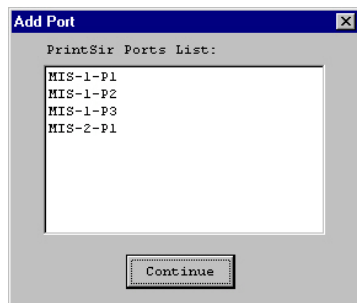
- 1) Network Ports Quick Setup
- 2) Remote Ports
- 3) Uninstall Network Driver

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

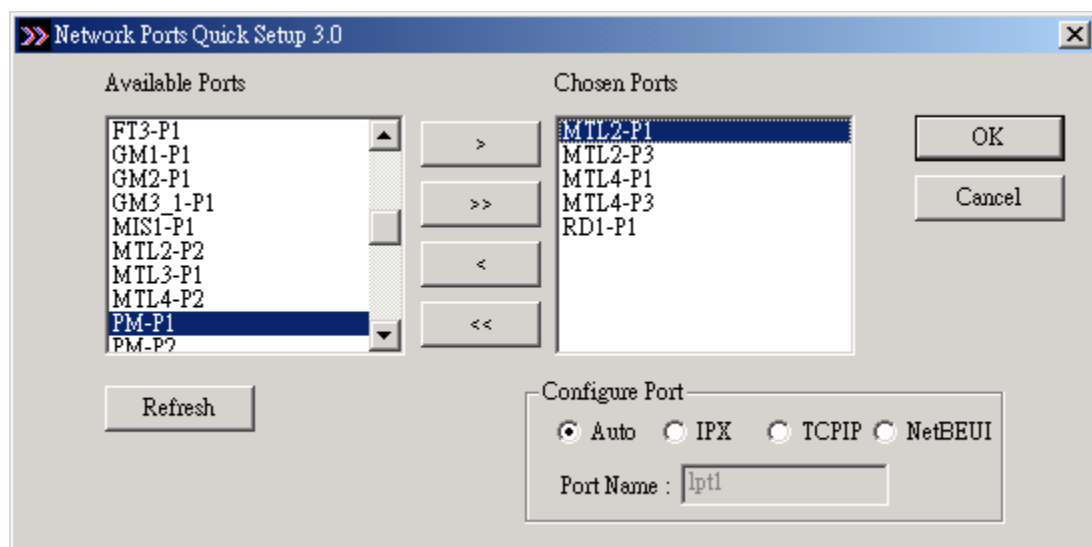
3.5.1 Network Ports Quick Setup

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

During the client's installation procedure, the system will automatically search for all print 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 print server on your network, you must run this program first. This program will search for new print servers and allow you to add the new network printer port into the client's computer. Perform the standard Add Printer procedure, and you will be able to print directly to the printer through the newly installed print server port.



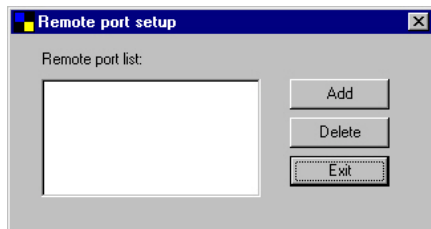
Please be aware that Network Ports Quick Setup Utility can only detect and configure all print servers on the same network; it cannot search and configure print servers on other subnets across network segments. You must use the Remote Ports Utility described in the next section to manage remote (across network segments) print servers.

3.5.2 Remote Ports (Utility)

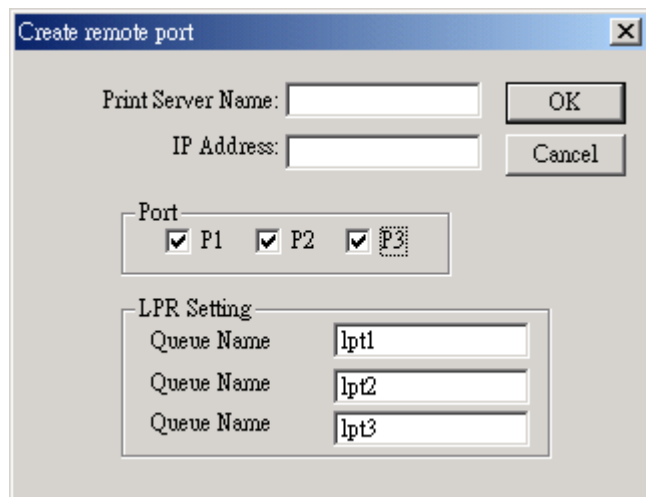
The Remote Ports Utility is a convenient tool for you to manage and add printer ports of a remote print server. From the utility assistant panel, you can print to other print servers outside of your subnet and across your network segments. Please note that this function only supports the TCP/IP network protocol.

Please follow the procedures described below:

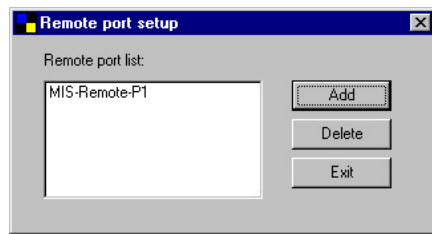
Step1. Run the Remote Ports Utility



Step2. Press Add, then enter the print server's name, IP address, select used ports, and enter the LPR queue name of each port.



Step3. Press OK to add the remote printer port into your computer's printer ports.

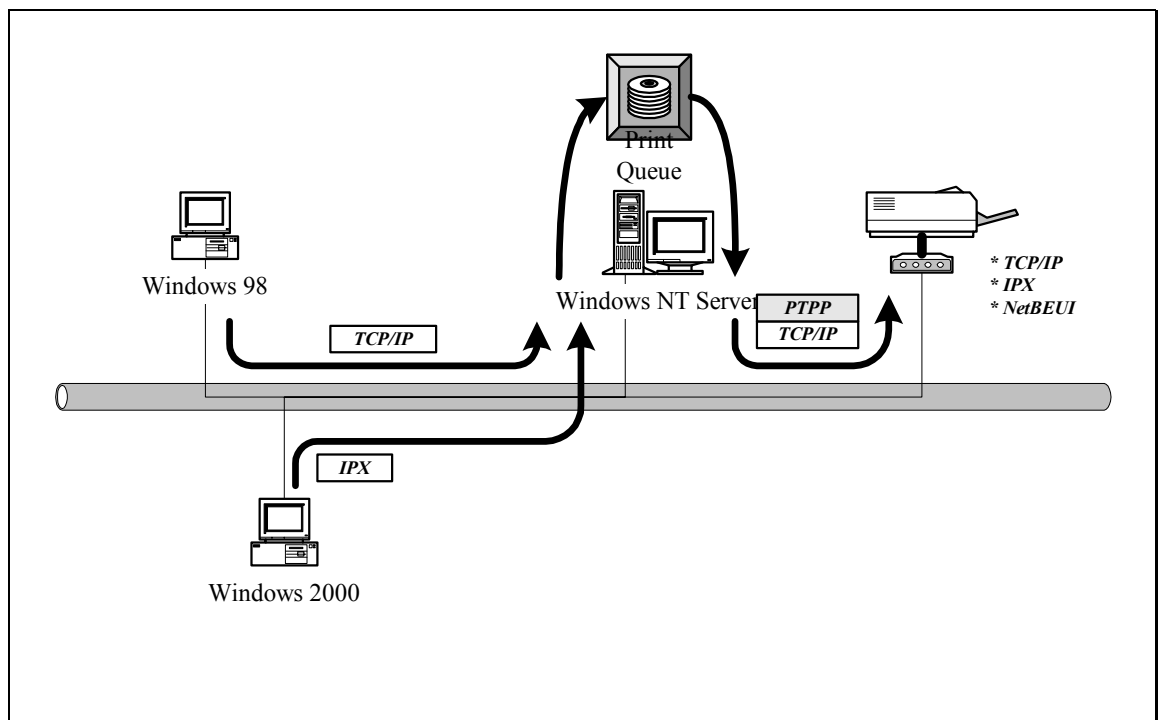


In order to use the remote printing function, you will have to proceed with the normal Add Printer procedure and select your printer port as the newly added remote printer port.

4. Windows NT/2000 Network

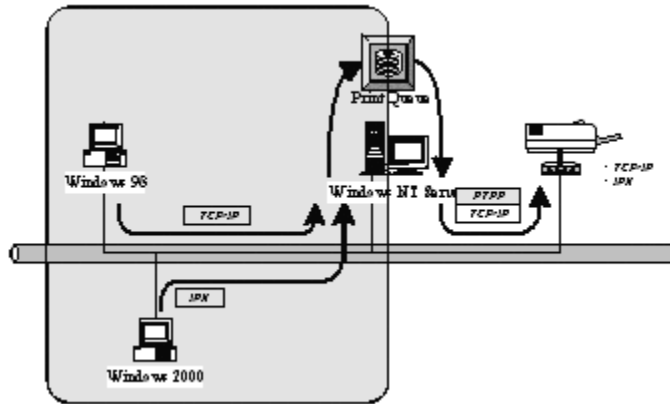
4.1 System Architecture

Peer-to-Peer network printing and Server-Based Printing is available for machines using the Windows NT/2000 server. Only one Windows NT/2000 is required to have the Windows PTPP (Peer-to-Peer Printing) driver installed to 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 NT/2000 Server Installation and Setup

Please follow the procedures described below for installation of a peer-to-peer connection (PTPP) between a Windows NT/2000 Server and the HPS12U.



Step1.

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

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

Step2.

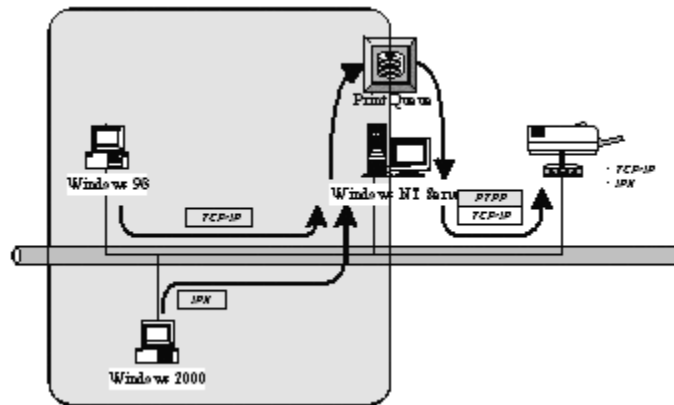
Please add/configure Peer-to-Peer Printing on your Windows NT/2000 network printer and verify that you

can print from Windows NT/2000 to the print server through the installed PTPP driver.

Step3.

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

4.3 User Installation and Setup



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

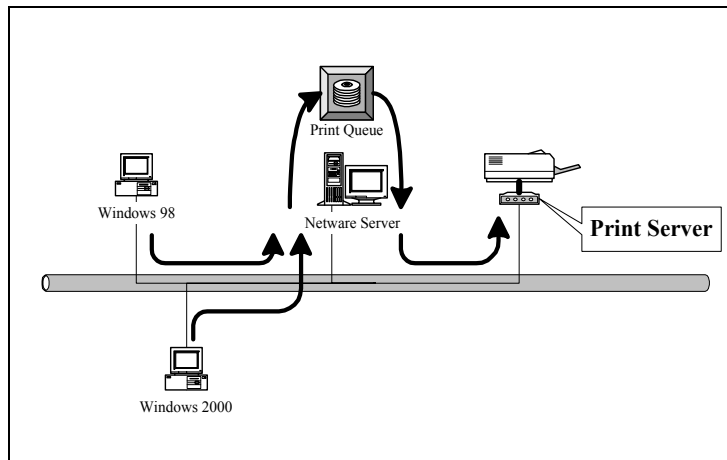


5. NetWare Network

5.1 System Architecture

We implemented the NetWare printer sharing functionality into the HPS12U, to allow one or more printers attached to the print server to be connected to your network. The HPS12U can support NetWare print server functions:

- The embedded print server, which emulates the “queue management functionality” of the NetWare print server, is the 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 then stores the job in a print queue and the print server gets the print job from the queue to the printer on your network.



The advantages of embedding the NetWare network printing functionality in the print server include:

Quick and easy installation.

Easy network management.

Enhanced printing performance.

Relief of NetWare's file server burden.

Each print server should log into a NetWare server before servicing the print jobs. Each print 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 print server is connected to your Ethernet network, you can set it up for use with your networking software. There are two methods you can use to do this easily:

Please note that, you need install the IPX protocol before continuing to install the print server.

1. In a DOS environment or DOS Windows, use the “*INSTALL*” quick-installation program found on the <CD-ROM Drive>\DOSUTIL of CD-ROM included with the print server.
2. In a DOS environment or DOS Windows box, use the “*PSETUP*” configuration program found on the included <CD-ROM Drive>\DOSUTIL; configure the print server to use a particular file server. Then, use NetWare’s PCONSOLE program to create a NetWare print server and print queue with the appropriate names.

5.2. Installation Using PSETUP

5.2.1.1 Configuring in Print Server Mode

For more complex setup needs, you can use the PSETUP program in conjunction with the NetWare PCONSOLE program.

The installation procedure is as follows:

1. From a workstation, log in to your NetWare server as SUPERVISOR.

2. Run the PSETUP program included on the CD-ROM.
(Ex. e:\dosutil\psetup.exe)
3. Select your new print server from the list provided.



4. Choose NetWare Configuration from the menu.

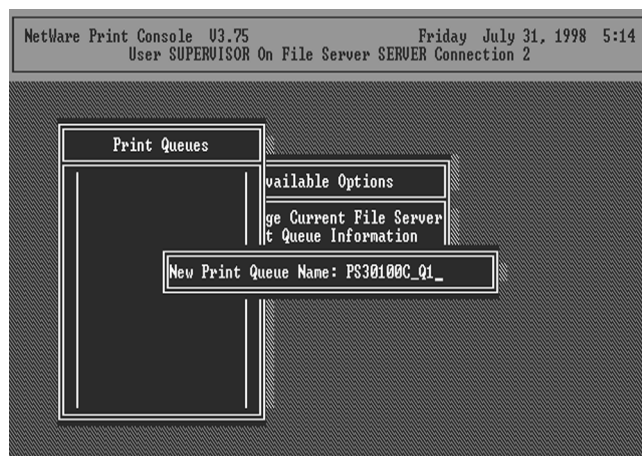


5. Select the Print server in the Printing mode field.
6. Change the Alias of the print server if you wish.
7. Set the Primary File Server to be the file server where the print server's queue will be located.

8. Press Escape to exit the Print Server Configuration screen, confirm that the changes should be saved, and exit PSETUP.

At this point the print server setup is complete. You can now begin setting up the NetWare print server and print queue objects:

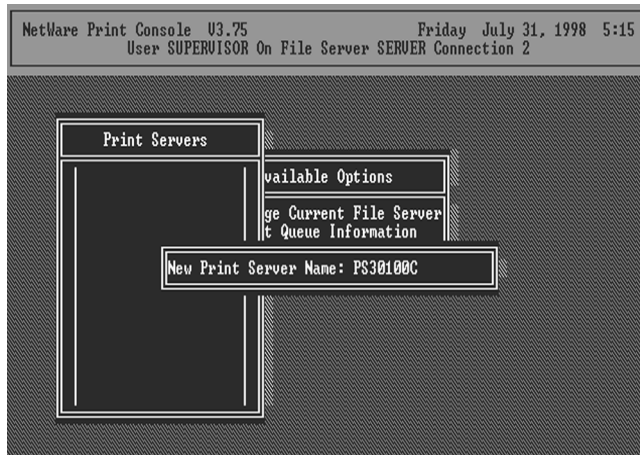
9. Run the NetWare PCONSOLE program.
10. Change the current file server, if necessary, using the Change Current File Server menu selection.
11. Choose the Print Queue Information menu selection.
12. Press the Insert key to add a new print queue.
13. Type in a print queue name, such as “PQ” or “Q1”.



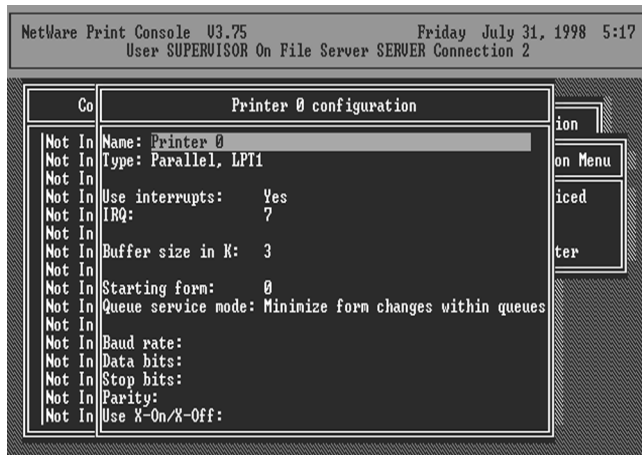
14. You have now successfully created the print queue that your print server will serve. Press the Escape key until the Available Options main menu is displayed.

15. Select “Print Server Information.”

16. Press the Insert key to add a new NetWare print server object. The print server name can be identical to the PSxxxxxx name printed on the label of the print server, or you can use an alias name you have assigned using PSETUP.



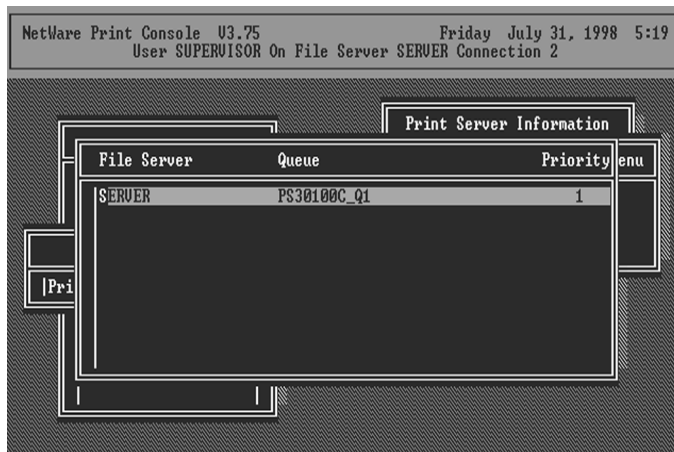
17. Press Enter to select the newly created print server.
18. Select "Print Server Configuration."
19. Select "Printer Configuration."
20. Select Printer 0 (or Printer 1, Printer 2), and press Enter, then select Parallel LPT1 (or LPT2, LPT3) in the Type field. If your print server has only one port, you do not need to configure this Type field.



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

22. Select Queues Serviced by Printer, then select Printer 0 (or Printer 1, Printer 2) and press Enter.

23. 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.



24. Repeatedly press Escape to exit the PCONSOLE program.

25. Reset the print server to have the changes take effect.

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

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

6. UNIX System Network

6.1 Introduction

The HPS12U can use TCP/IP printing through the Unix lpd (Line Printer Daemon) protocol. The lpd protocol is based on the BSD version of Unix and is supported under most versions of Unix.

This chapter explains how to configure the print server for TCP/IP operation, and how to modify configuration files on your Unix system to allow printing to the print 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 system.

To configure the print server for lpd printing, perform the following procedures below:

1. Enable the HPS12U's TCP/IP Support.
2. Set the HPS12U's IP address.
3. Verify the HPS12U's IP Address.
4. Configure remote lpd printing on the host.
5. Print a test page.

In the next section, we will describe these five procedures in depth.

6.2 Enable The HPS12U's TCP/IP Support

The default configuration of the HPS12U has TCP/IP support enabled. You can configure the HPS12U to enable TCP/IP support using the configuration program or PSETUP program included on the HPS12U CD-ROM.

6.3 Setup the HPS12U's IP Address

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

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

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

The print 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 the DHCP protocol and the procedures to configure the DHCP server database are different. This manual does not describe the DHCP server configuration on Unix systems. It is highly recommended that the DHCP server should be located on the same network as the HPS12U.

6.3.2 BOOTP

If you have the BOOTP daemon, `bootpd`, running on your UNIX and is accessible to the print server, you can use the BOOTP protocol to set up the IP address of the print server. We recommend that the BOOTP server should be located on the same subnet as the print 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 as the host of the BOOTP server with superuser (root) admin rights. Perform the following steps to add address entries:

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

```
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 the HPS12U; the ht=1 tag specifies that the hardware type is Ethernet. The ha= tag specifies that the Ethernet address of the HPS12U is the Node ID located on the print 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 print server.

For example, below is an example of a print server with the following configuration:

Node ID: 0000B4010101 (this implies Ethernet

address is 0000B4010101),

IP address: 203.66.191.12

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

```
PS010101:\
```

```
:ht=1:\
```

```
:ha=0000B4010101:\
```

```
:ip=203.66.191.12:
```

6.4 Verify the HPS12U's IP Address

To verify that your print server is responding to the newly assigned IP address, use a PING command to check the HPS12U's response:

```
ping ip-address
```

6.5 Configure Remote lpd Printing on the Host

You can use this procedure to configure your Unix host(s) to allow printing to your network. The procedure below can be used for Unix variants that are related to BSD Unix, like SunOS or Linux. For other versions of Unix, consult your system documentation, keeping in mind that:

1. The print server should be treated as a BSD networked print server host.
2. The host name should be the name (or IP address) that you have assigned to the print server.
3. The printer name (or queue name) on the remote host should be lpt1, lpt2 or lpt3, the name of the parallel port on the print 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 print server's IP address. You can add this address to the /etc/hosts file, by adding the following line:

```
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:\n\n:lp=:\n\n:rm=203.66.191.186:\n\n:rp=lpt1:\n\n:lf=/var/spool/lpd/pserverd.log:\n\n:sd=/var/spool/lpd/pserverd:\n\n: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 print server. You can also use a host name if you have one assigned 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 `lpt1`, `lpt2`, or `lpt3`, depending on which printer port your printer is attached to.

The HPS12U should now be available for printing from your Unix host.

7. Configuration Utility

7.1 Introduction

This chapter introduces the HPS12U's system configuration utility in a Windows environment. This utility is automatically installed during the Windows Administrator Utility installation procedure - refer to section 3.2 and 3.3.

This utility provides complete management and configuration functions for the print server. This utility only provides configuration functions for the HPS12U itself; it does not include configuration functions for client side or other file server or NetWare server in the network environment.

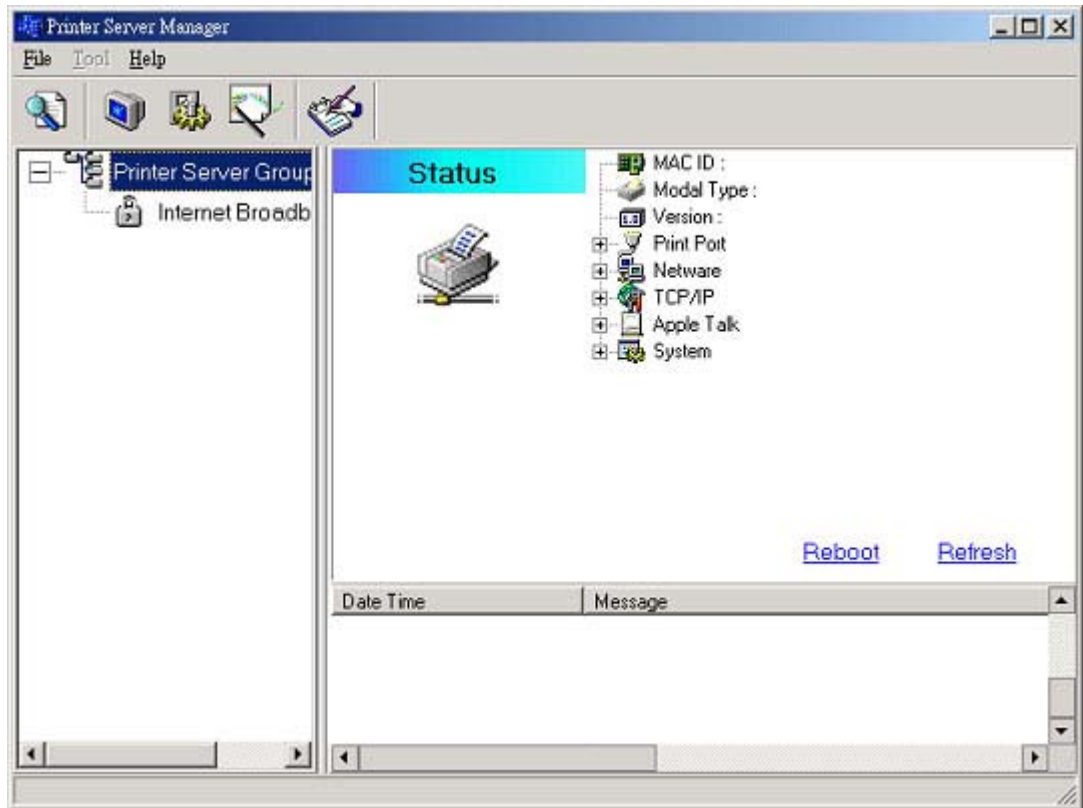
The Configuration Utility provides the following configuration and management functions:


- ☐ **Search Print Server:** Search All Available Printer Servers on the Network
- ☐ **Print Server Status:** Print Server Network Status
- ☐ **AppleTalk Configuration:** AppleTalk Protocol Setting
- ☐ **General Configuration:** General Information of print server
- ☐ **NetWare Configuration:** NetWare Printing Configuration

- ❑ **System Configuration:** Print Server Network Ability Setting and Firmware Upgrade
- ❑ **TCP/IP Configuration:** IP Address and DHCP Server Configuration
- ❑ **Setup Wizard:** Guide You Through All the Settings
- ❑ **Report:** List the Status of All Available Print Servers on the Network

We will explain each function separately in the following section.

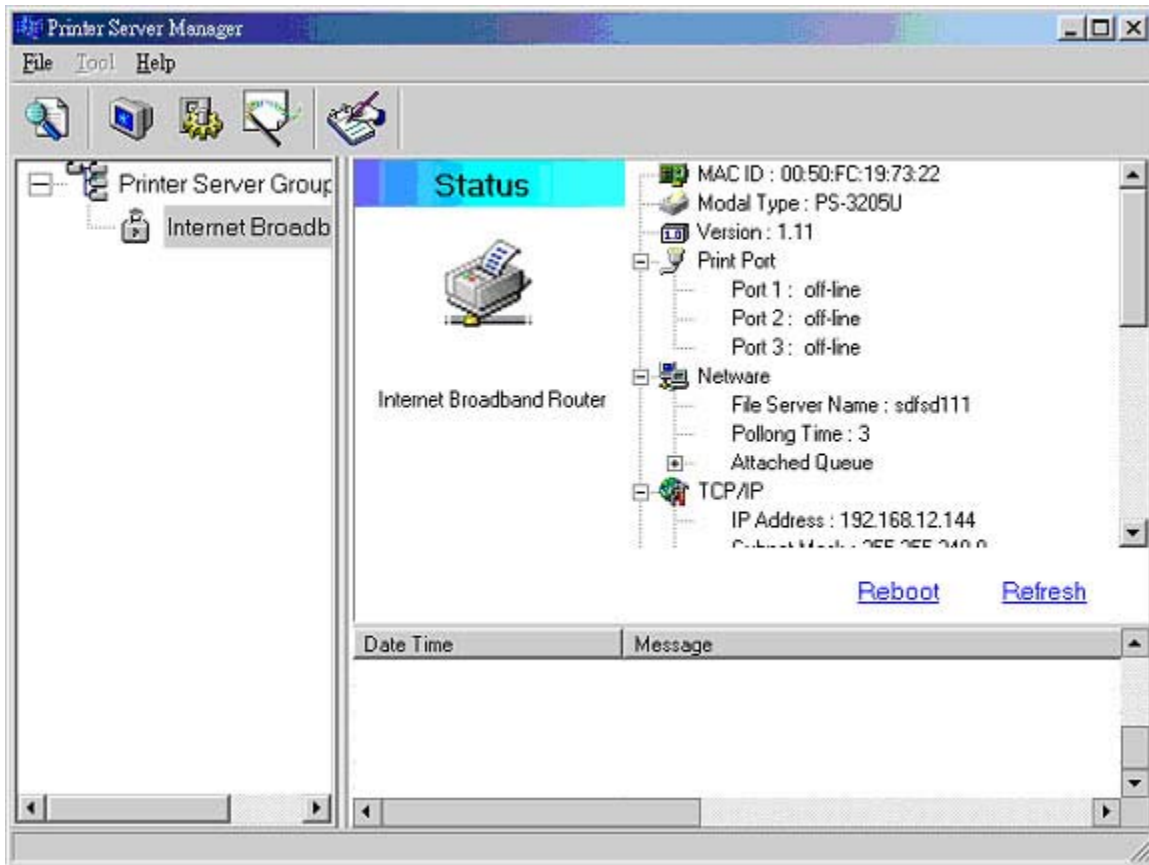
7.2 Search – Search for All Available Print Servers




After you start up Hawking's HPS12U configuration utility, click the "Search" icon  on the tool bar. The configuration utility will delay for several seconds to search for all print servers on the network. All available print servers will be listed under the "Print Server Group" window on the left side of your screen.

You must select the print server you would like to configure from the list. The configuration utility will display the selected print server's status on the right side of the window.

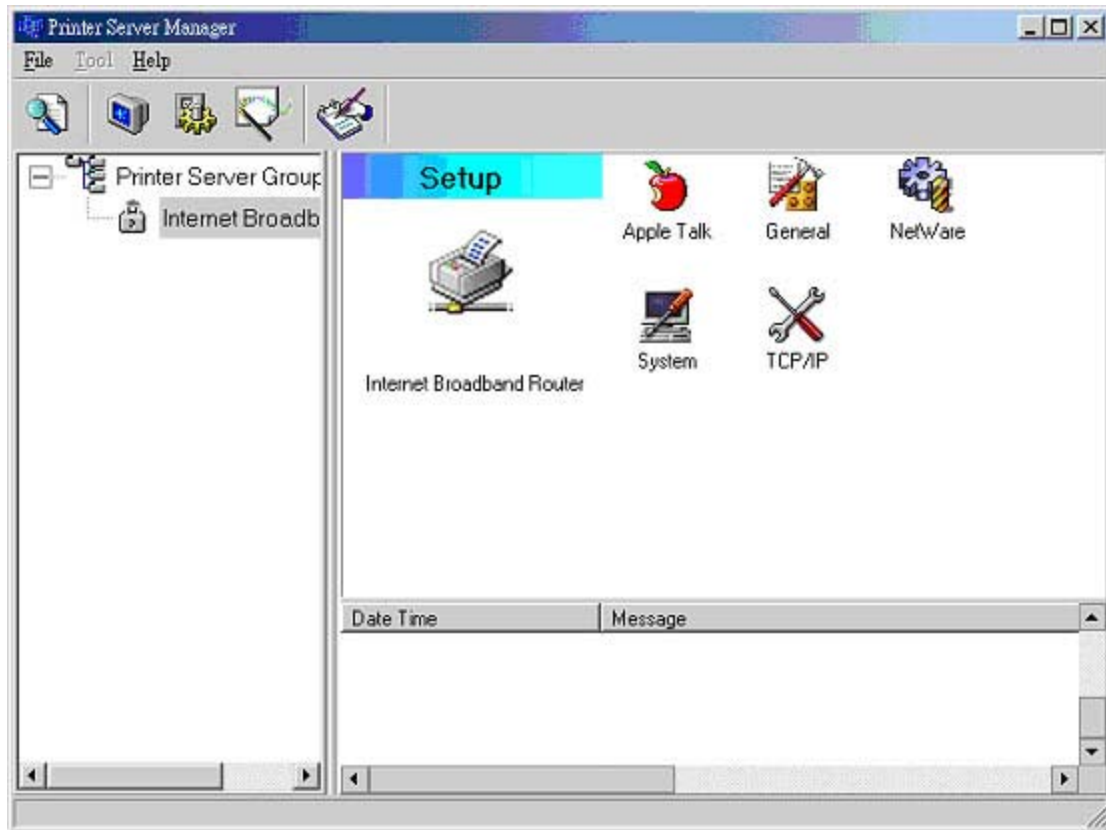
7.3 Status - Print Server Status




- Click the “Status” icon  on the tool bar to view the current status of the selected print server.
- Information about the selected print server is displayed including the 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 print server printing ability...etc.

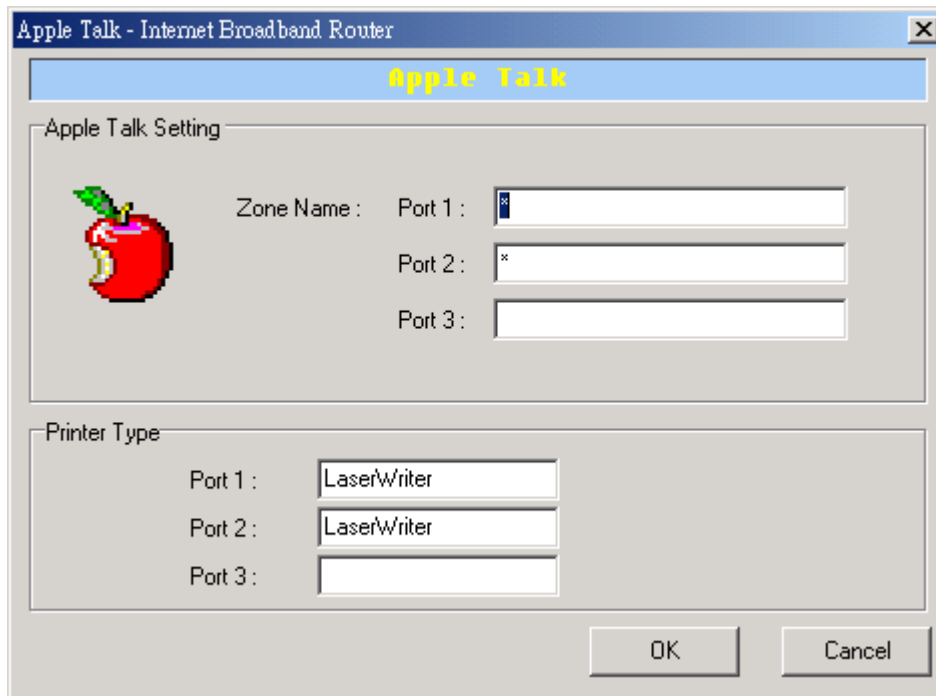
- You can refresh the print server's status by pressing the “*Refresh*” button.
- You can restart the print server by pressing the “Reboot” button.

7.4 Setting up the Print Server



- Click the “Setup” icon  on the tool bar and the setup items of the current selected print server will be displayed on the right side of the window.
- You can modify the HPS12U’s settings here.

7.5 AppleTalk Configuration

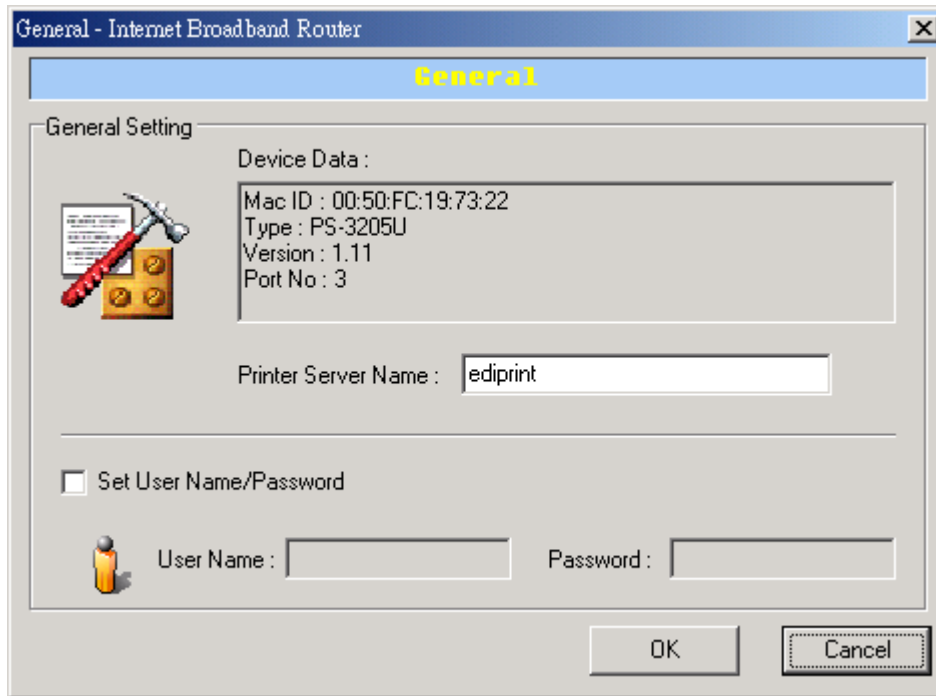


- Double Click on the “AppleTalk” icon and the AppleTalk configuration window will appear.
- AppleTalk is a data communication protocol often used by Macintosh computers. The HPS12U can use this protocol to join the AppleTalk network and share your printer to other AppleTalk workstations. You will have to setup the “Zone Name” and “Printer Type” for each printer port of the HPS12U.
- **Zone Name:** Enter the HPS12U AppleTalk zone that your AppleTalk network uses. The selected zone must be active before other AppleTalk workstations can share your HPS12U. Only workstations in the same zone can share your

printer. If you want to share your printer with every workstation in every Zone, you should enter an “*” in the “Zone Name” field.

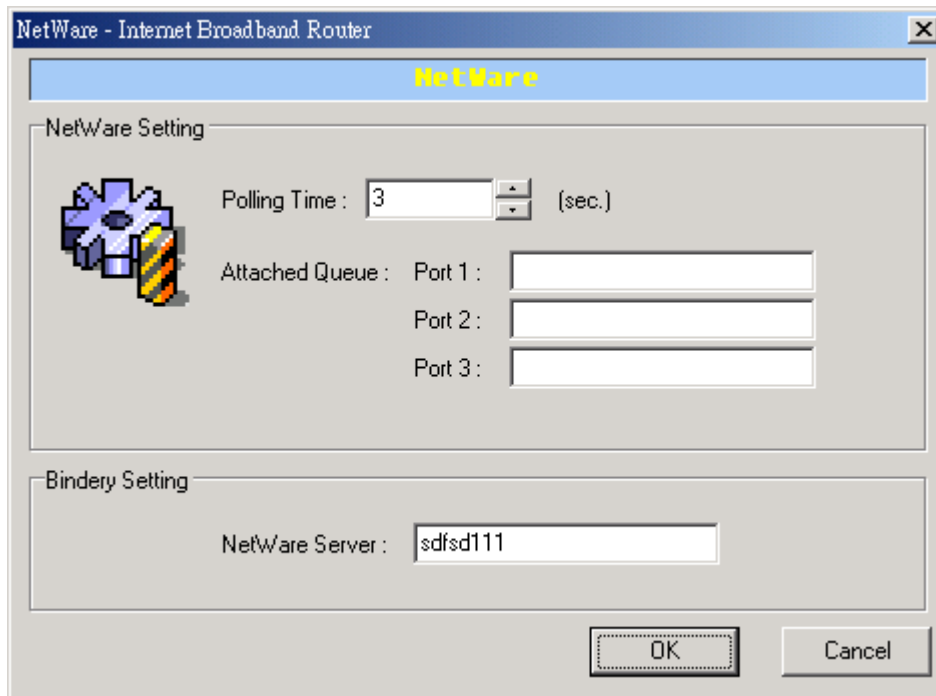
- **Printer Type:** This is the type of printer attached to each printer port. You can get the printer type information from the manufacturer of your attached printer.

7.6 General Configuration



- Double Click the “General” icon and the General configuration window will be displayed.
- You can see basic print server information in this window. You also can configure the “Print Server Name,” “User Name,” and “Password” here.
- **Print Server Name:** This is the name of your HPS12U. You can use this name to identify the HPS12U when you are searching for your print server through the administration and client utilities.
- **User Name / Password** is used to authenticate the administrator through the Web administration tool.

7.7 Netware Print Server Configuration

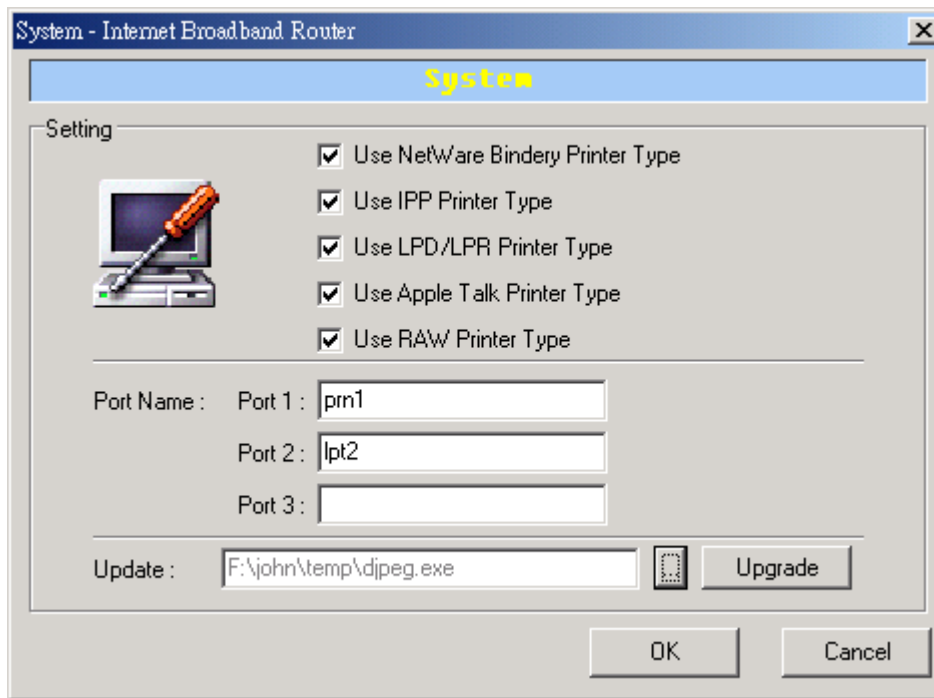



- Double Click on the “NetWare” icon and the NetWare configuration window will be displayed.
- The HPS12U supports the NetWare Bindery Printing method and periodically polls the NetWare server printer queues for printing jobs. You will have to assign the NetWare server name, print server polling interval, and the name of queue on the NetWare server for each printer port.
- **Polling Time** is the polling interval time that the HPS12U waits before printing jobs on the NetWare server.
- **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 the HPS12U.

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

7.8 System Configuration



- Double Click “System” icon and the System configuration window will be displayed.
- From the System configuration page, you can select to enable/disable each printing protocol, assign name for each printer port, and upgrade to a new firmware version.
- **Port Name:** This is the name of your printer port. Each printer port needs to be assigned a name. The client utility uses this name to access the printer port.
- **Upgrade Firmware:** You can use the “Upgrade Firmware” tool to update to the newest firmware of the print server. Click the  button and select


the correct firmware version file. After selecting the firmware file, click the “Upgrade” button to finish the firmware update process.

7.9 TCP/IP Configuration

TCP/IP - Internet Broadband Router

TCP/IP

TCP/IP Setting



☐ IP ☐ DHCP

☐ Auto IP

☒ Specify IP

IP Address :

Subnet Mask :


Gateway :

OK Cancel

TCP/IP - Internet Broadband Router

TCP/IP

TCP/IP Setting



☐ IP ☐ DHCP

☐ Disable

☒ Enable

Start Address :

End Address :

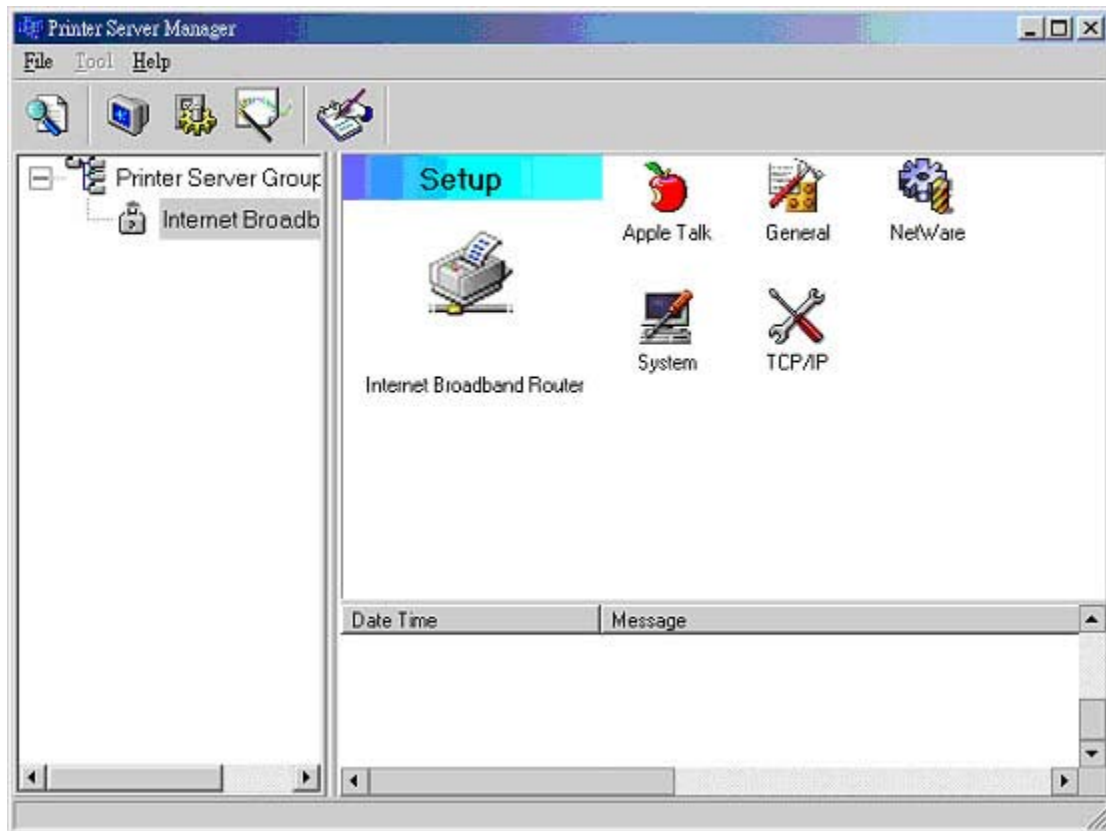
Gateway :


DNS :

OK Cancel

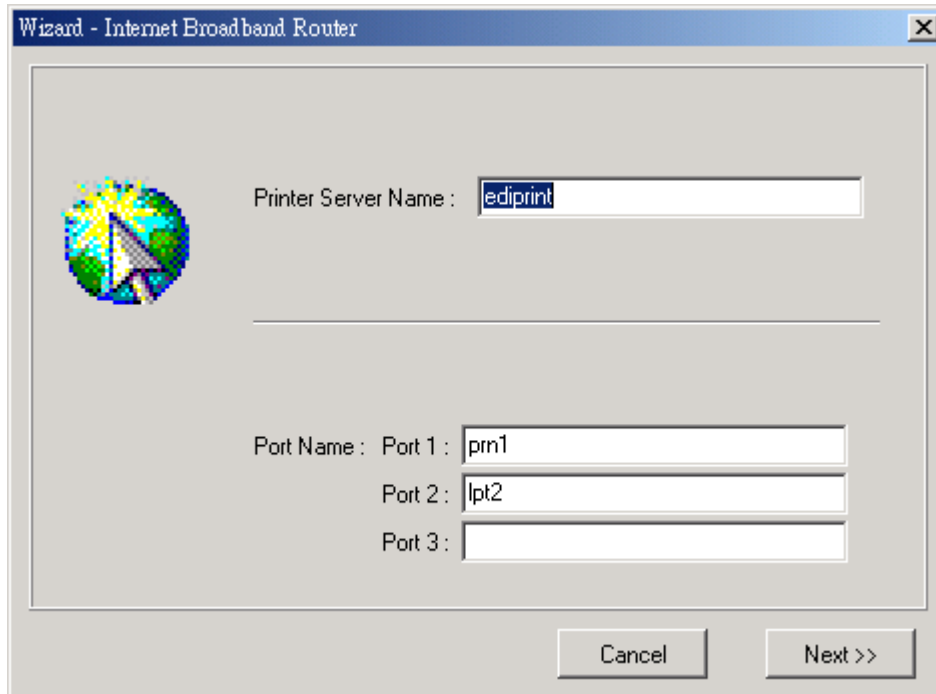
- Double Click the “TCP/IP” icon and the TCP/IP configuration window will appear.
- You can configure the print server to automatically get its IP address from your networks DHCP server or manually specify a static print server IP. The HPS12U also has a built-in DHCP server. You can enable this DHCP server and let it manage your print server IP addresses for you.
- Click the “IP” button to enter the IP setting page. If you need the print server to automatically get an IP from your networks DHCP server, select “Auto IP.” You also can select “Specify IP” to manually assign “IP Address,” “Subnet Mask,” and “Gateway” for the HPS12U.
- Click the “DHCP” button to enter the DHCP server setting page. You can enable/disable the DHCP server and assign a range of IP addresses here. The DHCP server is disabled by default. You will have to configure a “Start Address,” “End Address,” “Gateway,” and “DNS” for the HMPS12U. The print server will assign a unique IP address for each client.

7.10 Wizard



- Click the “Wizard” icon  on the tool bar and the setup wizard of the current selected print server will be shown on the right side of the information window.
- Double click the “Print Server Wizard” and the setup wizard will guide you through the setup process.

- Step 1: Setup the name of the print server and the name of each printer port. Please refer to section 7.6 and 7.8 for detailed information.

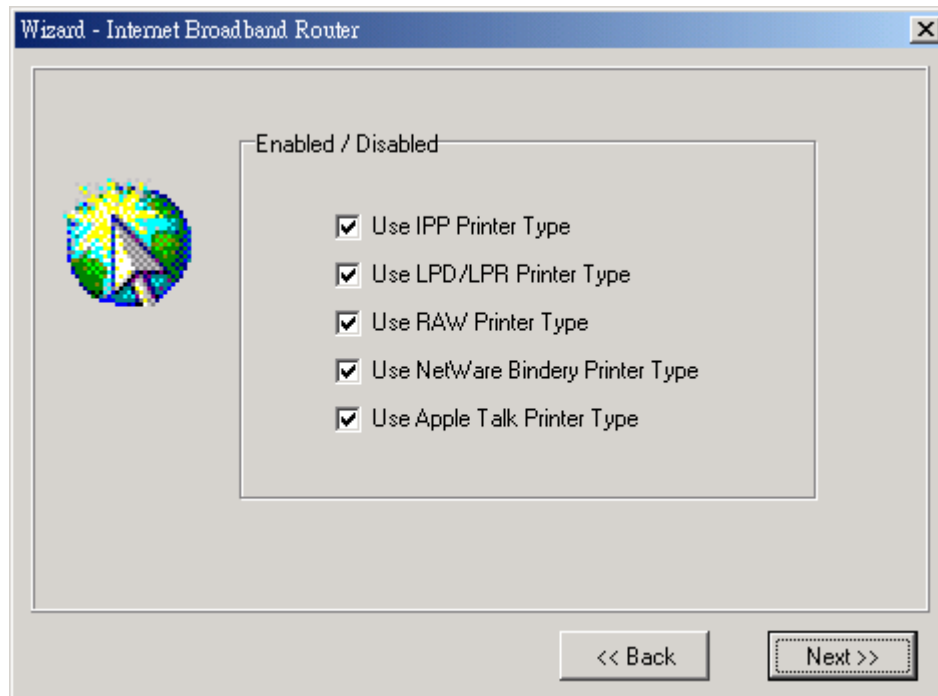


The screenshot shows a window titled "Wizard - Internet Broadband Router". On the left is a circular icon with a globe and a mouse cursor. The main area contains the following fields:

- "Printer Server Name :" followed by a text box containing "ediprint".
- A horizontal separator line.
- "Port Name : Port 1 :" followed by a text box containing "prn1".
- "Port 2 :" followed by a text box containing "lpt2".
- "Port 3 :" followed by an empty text box.

At the bottom right are two buttons: "Cancel" and "Next >>".

- Step 2: Select to enable the required printing protocol. Please refer to section 7.8 for detailed information.



- Step 3: Setup the IP address of the HPS12U and the DHCP server. Please refer to section 7.9 for detailed information.

Wizard - Internet Broadband Router

IP DHCP Server

☐ Auto IP

☒ Specify IP

IP Address : 192 168 12 144

Subnet Mask : 255 255 240 0

Gateway : 192 168 12 252

<< Back Next >>

- Step 4: Setup NetWare printing. Please refer to section 7.7 for detailed information.

Wizard - Internet Broadband Router

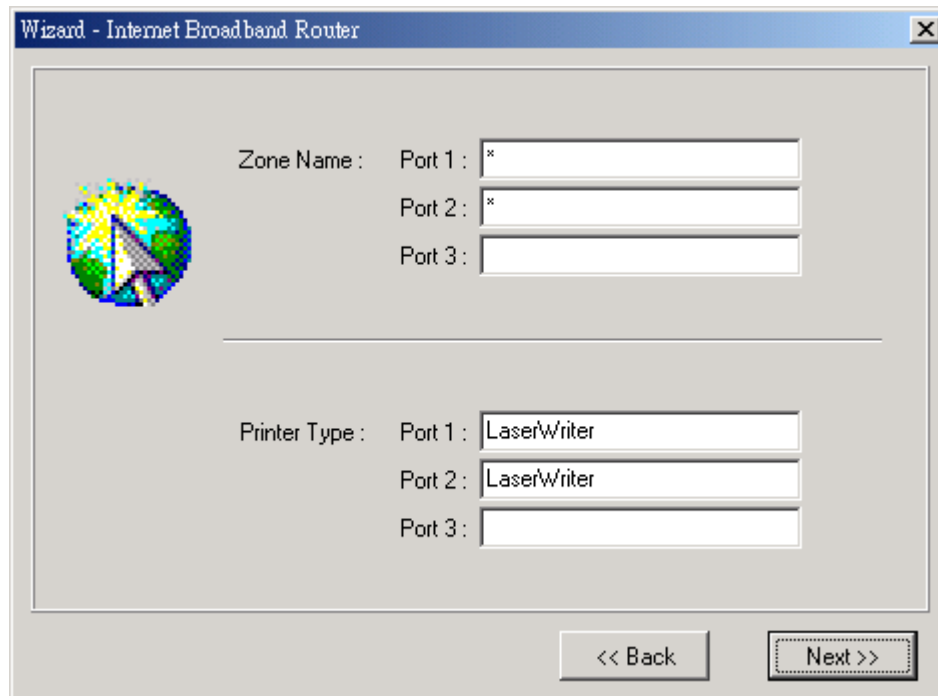
Polling Time : 3 (sec.)

Attached Queue : Port 1 :
Port 2 :
Port 3 :

NetWare Server : sdfsd111

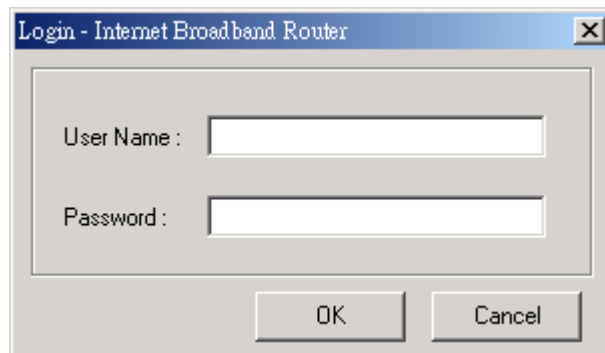
<< Back Next >>

- Step 5: Setup AppleTalk printing. Please refer to section 7.5 for detailed information.



The screenshot shows a window titled "Wizard - Internet Broadband Router". On the left is a globe icon with a mouse cursor. The main area contains two sections. The first section is labeled "Zone Name :" and has three input fields for "Port 1 :", "Port 2 :", and "Port 3 :". The "Port 1" and "Port 2" fields contain an asterisk (*). The second section is labeled "Printer Type :" and has three input fields for "Port 1 :", "Port 2 :", and "Port 3 :". The "Port 1" and "Port 2" fields contain the text "Laser/Writer". At the bottom right are two buttons: "<< Back" and "Next >>".


- Step 6: Setup the password. Please refer to section 7.6 for detailed information.



The screenshot shows a window titled "Login - Internet Broadband Router". It contains two input fields: "User Name :" and "Password :". At the bottom are two buttons: "OK" and "Cancel".

7.11 Report

[illegible]

- Click the “Report” icon  on the tool bar and the Report window will pop-up.
- The report lists basic information of all available print servers on the network. The information includes Device Name, MAC ID, Model Type, Firmware Version, and print server status.

8. Web Management

8.1 Introduction

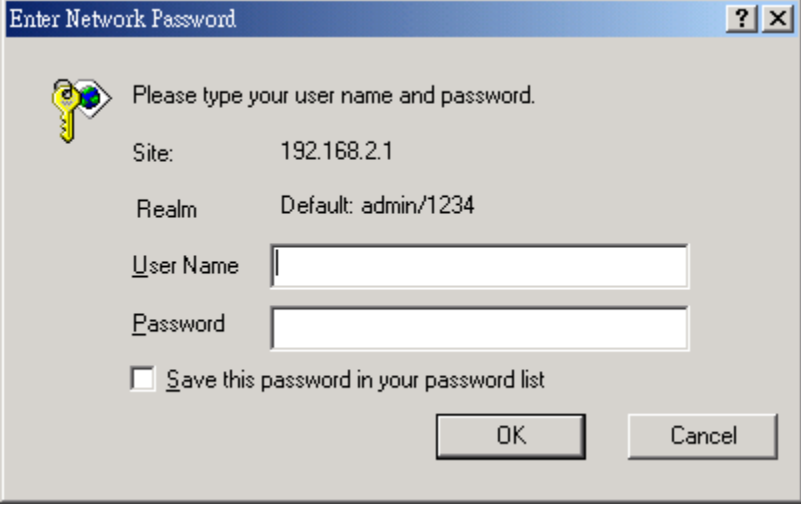
The HPS12U can be configured and managed via the Web. Through the Local Area Network, or even the Internet, an administrator can easily configure and manage the HPS12U's functions through a web browser. Simply enter the print server's IP address into your browser's URL field to manage the HPS12U through the print server's built-in Web Server.

8.2 Web Management of Print Server

8.2.1 Login

You can use any Web Browser to review the status or configure the settings of the HPS12U. After entering the IP address of the print server, a login page will be displayed. You have to enter correct “User Name” and “Password” before accessing the Web Management pages.

Note: Default User Name is “admin” and default password is “1234”.

A screenshot of a Windows-style dialog box titled "Enter Network Password". The dialog has a blue title bar with a question mark icon and a close button. The main area is light gray. On the left, there is a yellow key icon with a blue and green circle. To the right of the icon, the text "Please type your user name and password." is displayed. Below this, there are two labels: "Site:" followed by the value "192.168.2.1", and "Realm:" followed by the value "Default: admin/1234". Below these are two text input fields. The first is labeled "User Name" and the second is labeled "Password". At the bottom left, there is a checkbox labeled "Save this password in your password list". At the bottom right, there are two buttons: "OK" and "Cancel".

Enter Network Password

Please type your user name and password.

Site: 192.168.2.1

Realm Default: admin/1234

User Name

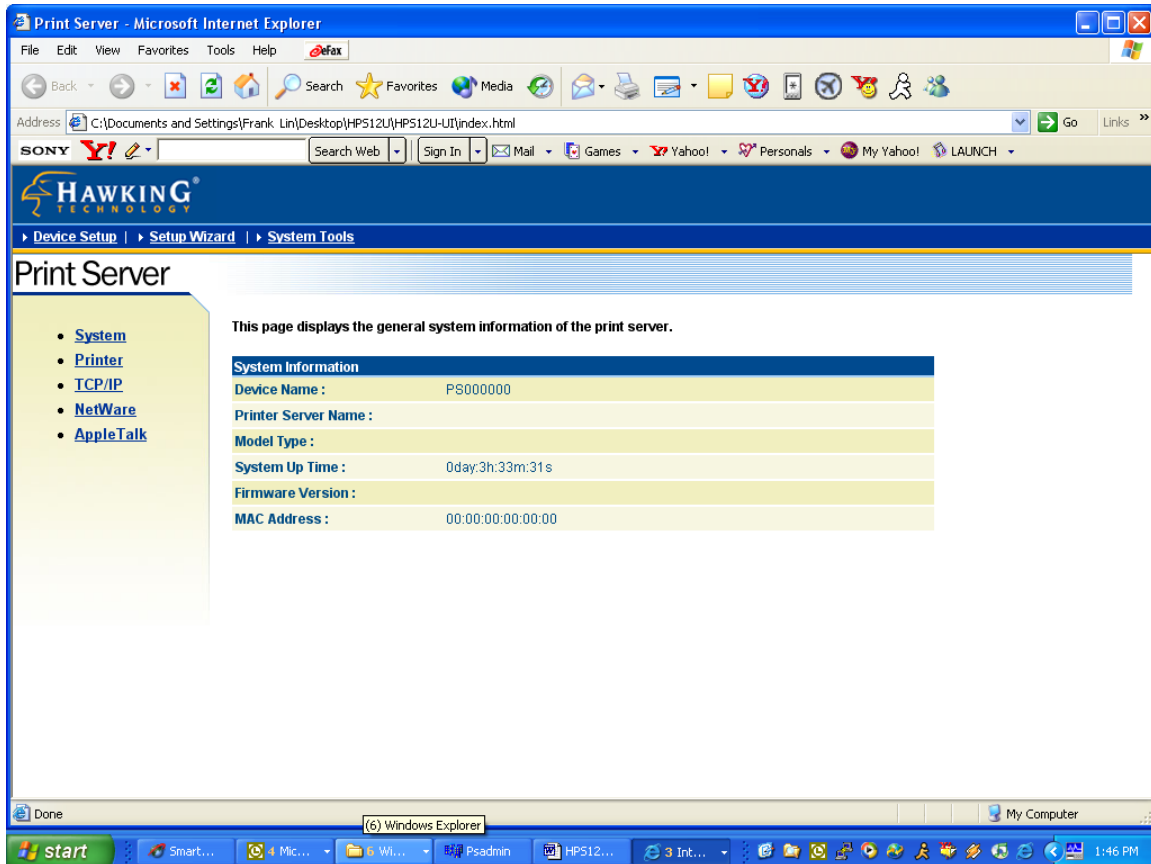
Password

☐ Save this password in your password list

OK Cancel

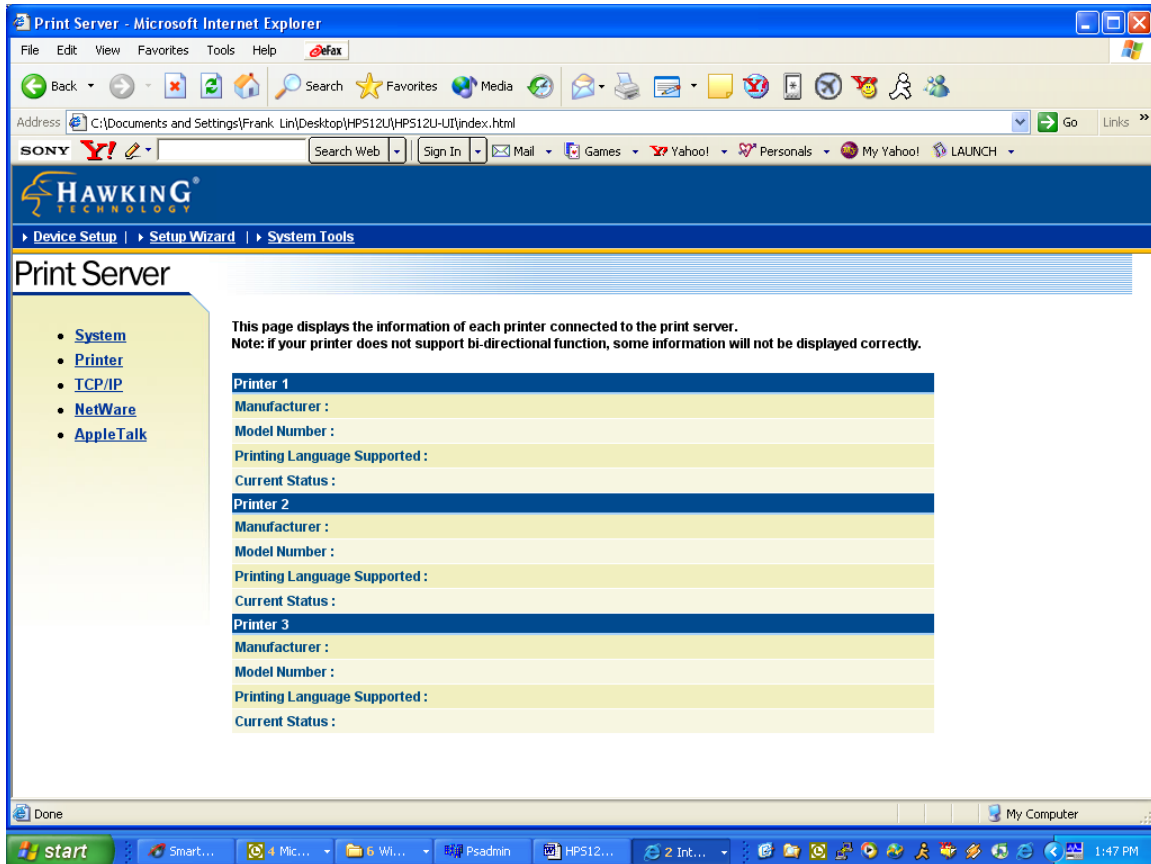
8.3 Device Status

8.3.1 System



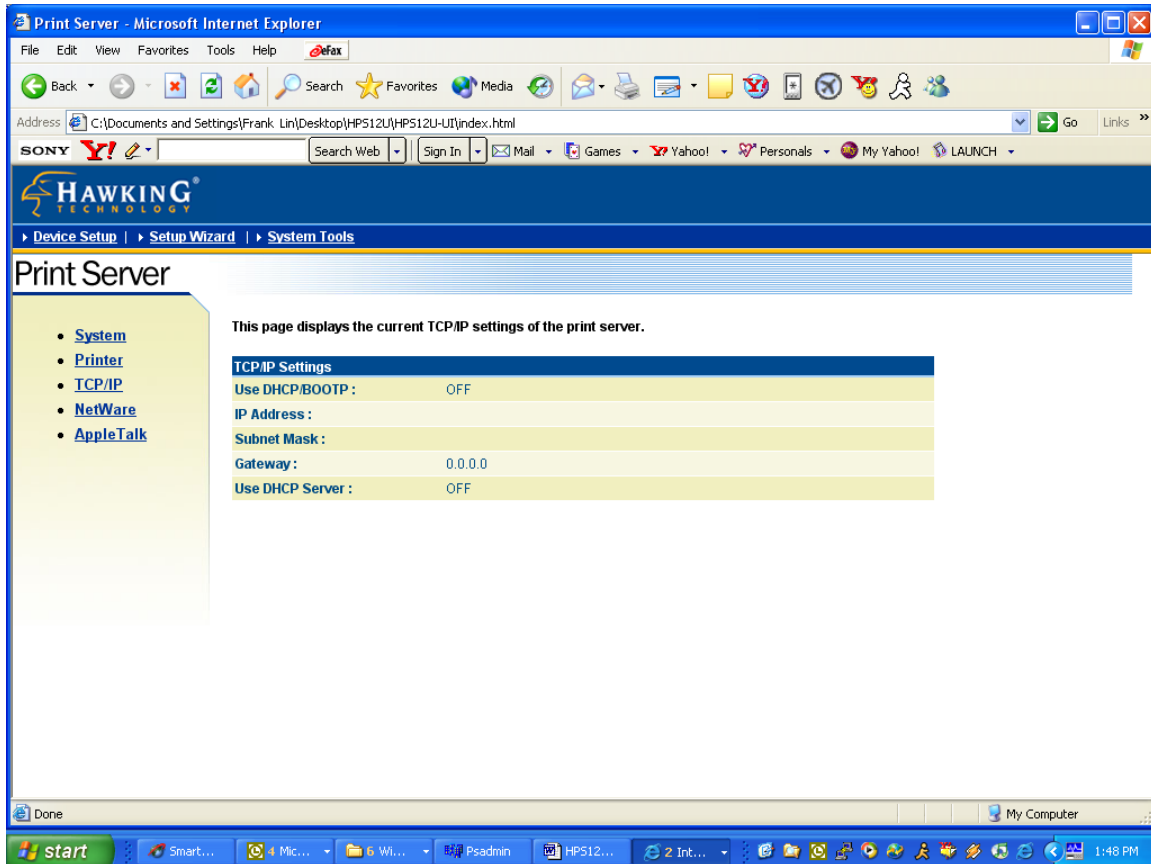
The System Information includes “Device Name,” “Print Server Name,” “Model Type,” “System Up Time,” “Firmware Version,” and “MAC Address.”

8.3.2 Printer



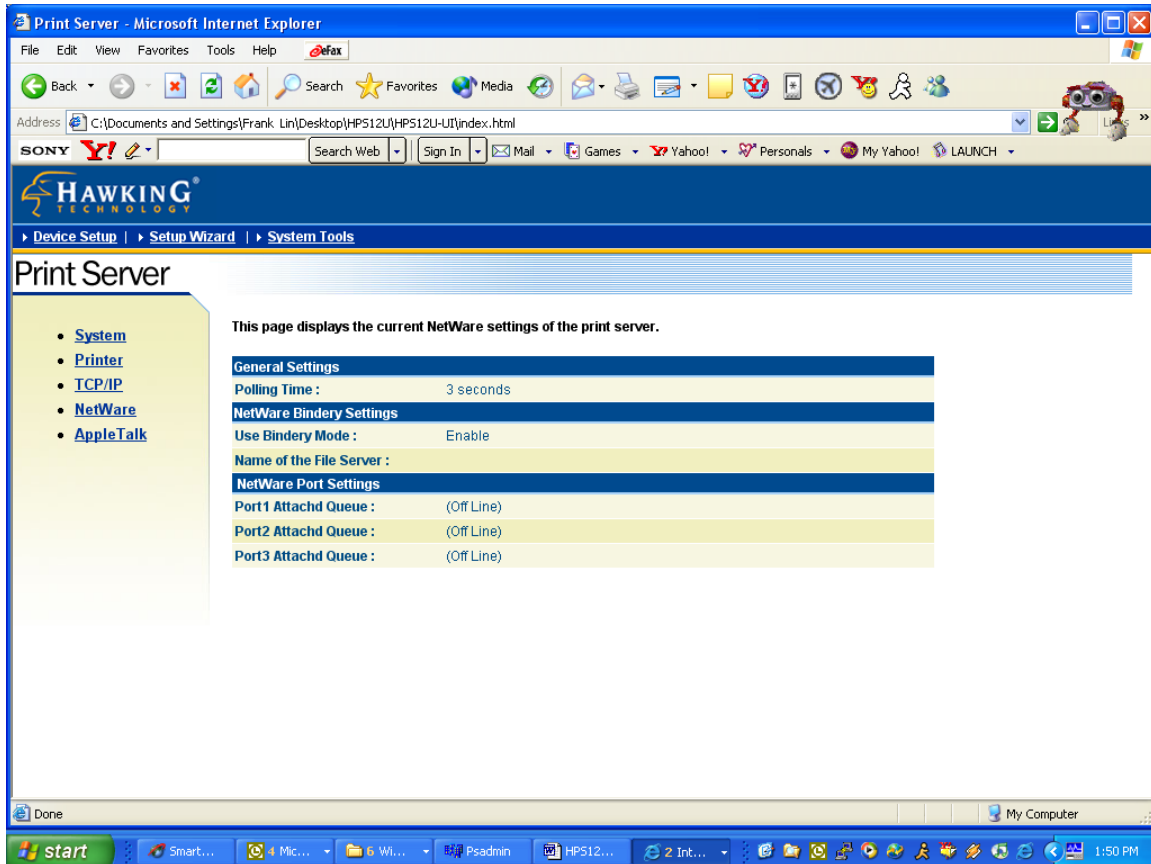
This page lists printer information for all printers connected to each of the HPS12U's ports.

8.3.3 TCP/IP



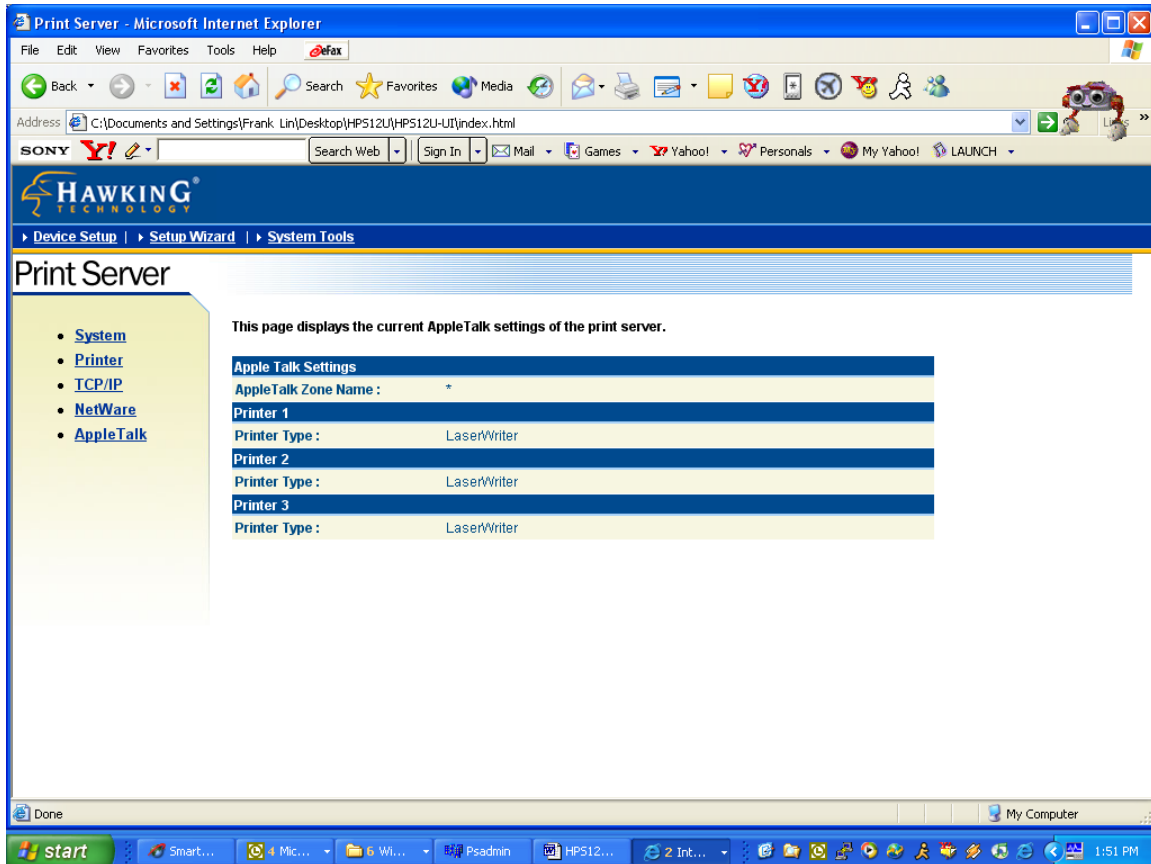
This page lists all TCP/IP settings which include your HPS1U's "IP Address," "Subnet Mask," and "Gateway." It also lists the HPS12U's DHCP server settings including your "Start IP," "End IP," and "Domain."

8.3.4 NetWare



This page lists the HPS12U's NetWare settings including "Polling Time," "Name of the File Server," and "Queue Name of each Port."

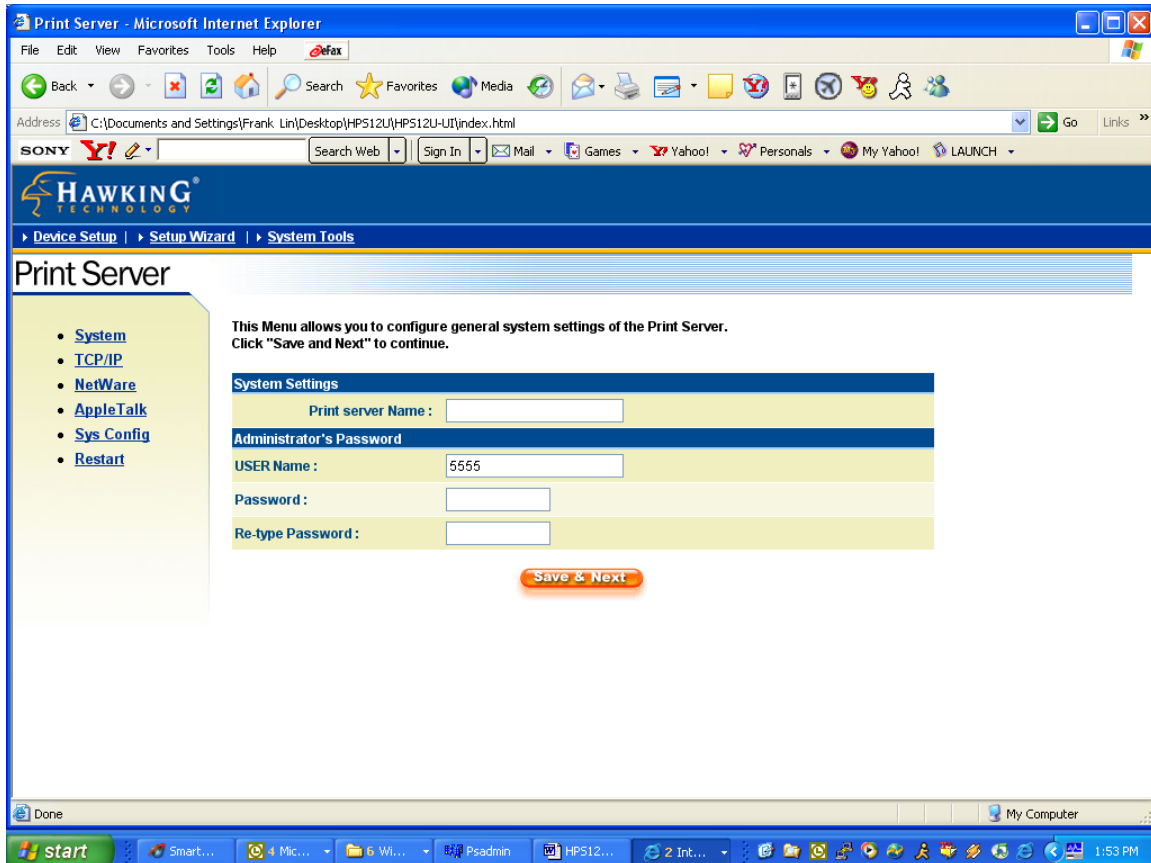
8.3.5 AppleTalk



This page lists the HPS12U's AppleTalk settings including "AppleTalk Zone Names" and your "Printer Type."

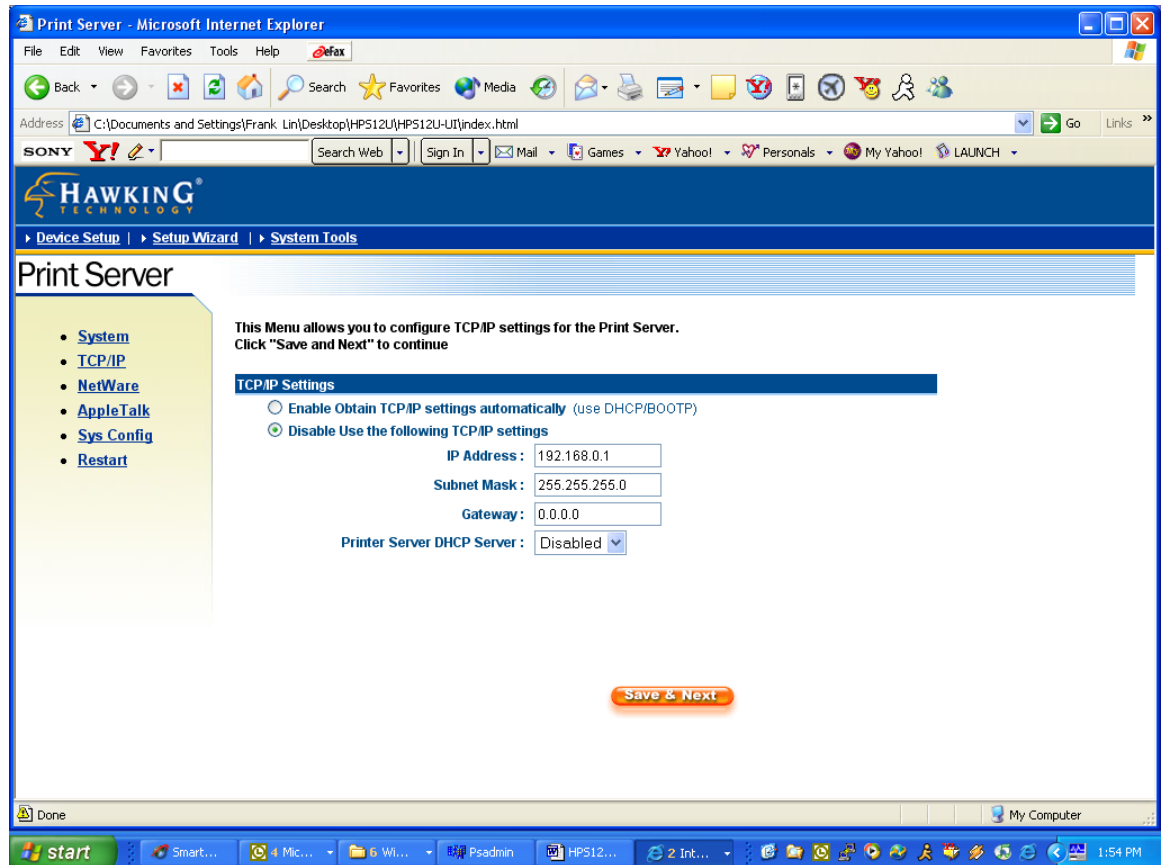
8.4 Setup Wizard

8.4.1 System



- You also can configure the “Print Server Name,” “User Name,” and “Password” here.
- **Printer Server Name:** This is the name of the print server. You can use this name to identify the HPS12U when you are searching for the print server through the administration and client utilities.
- **User Name / Password** is used to authenticate the administrator through the Web administration tool.

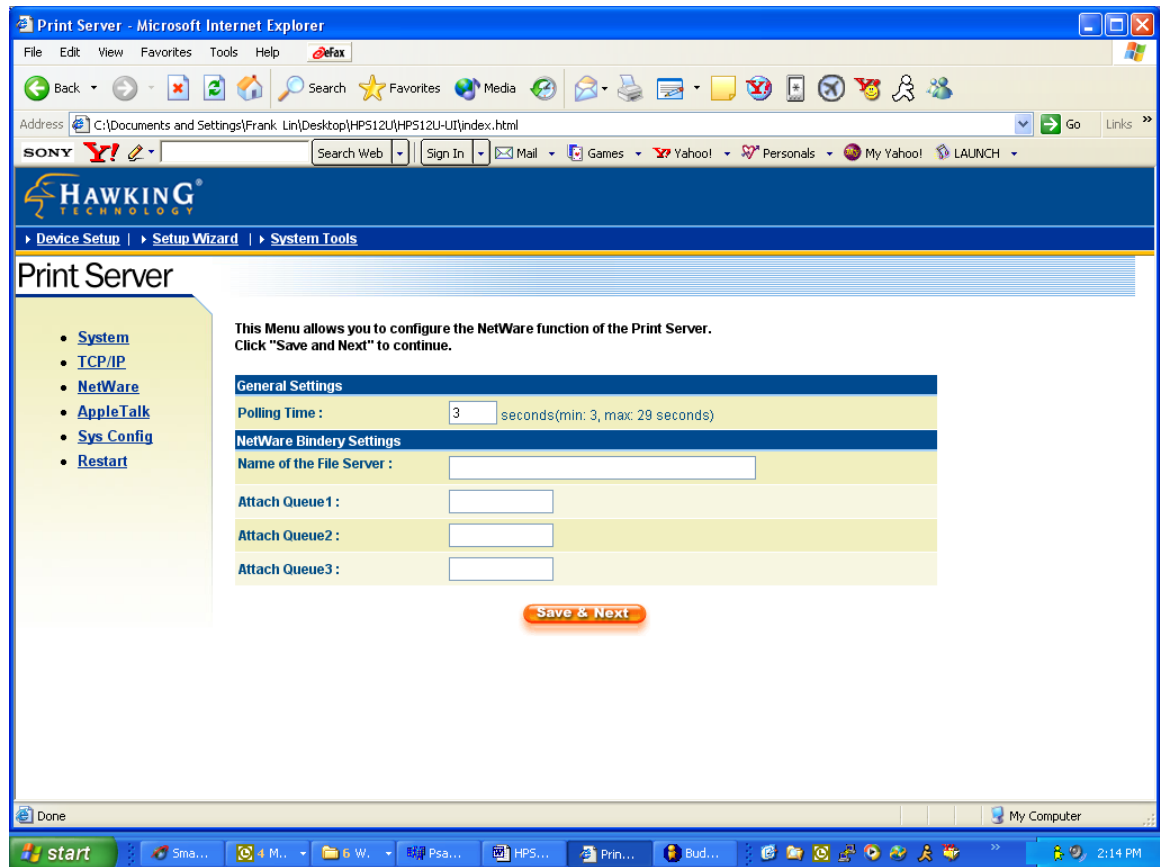
8.4.2 TCP/IP



- You can configure the print server to automatically get an IP from DHCP server or manually specify a static IP. The print server also has a built-in DHCP server. You can enable this DHCP server and let it manage your IP address for you.
- If you need the HPS12U to automatically get an IP address from the DHCP server, select “Auto IP.” You also can select “Specify IP” to manually assign an “IP Address,” “Subnet Mask,” and “Gateway” for the print server.

- You can enable/disable the DHCP server and assign a range of IP addresses here. The DHCP server is disabled by default. You have to configure your “Start Address,” “End Address,” “Gateway,” and “DNS.” The HPS12U will assign a unique IP address for each client.

8.4.3 NetWare

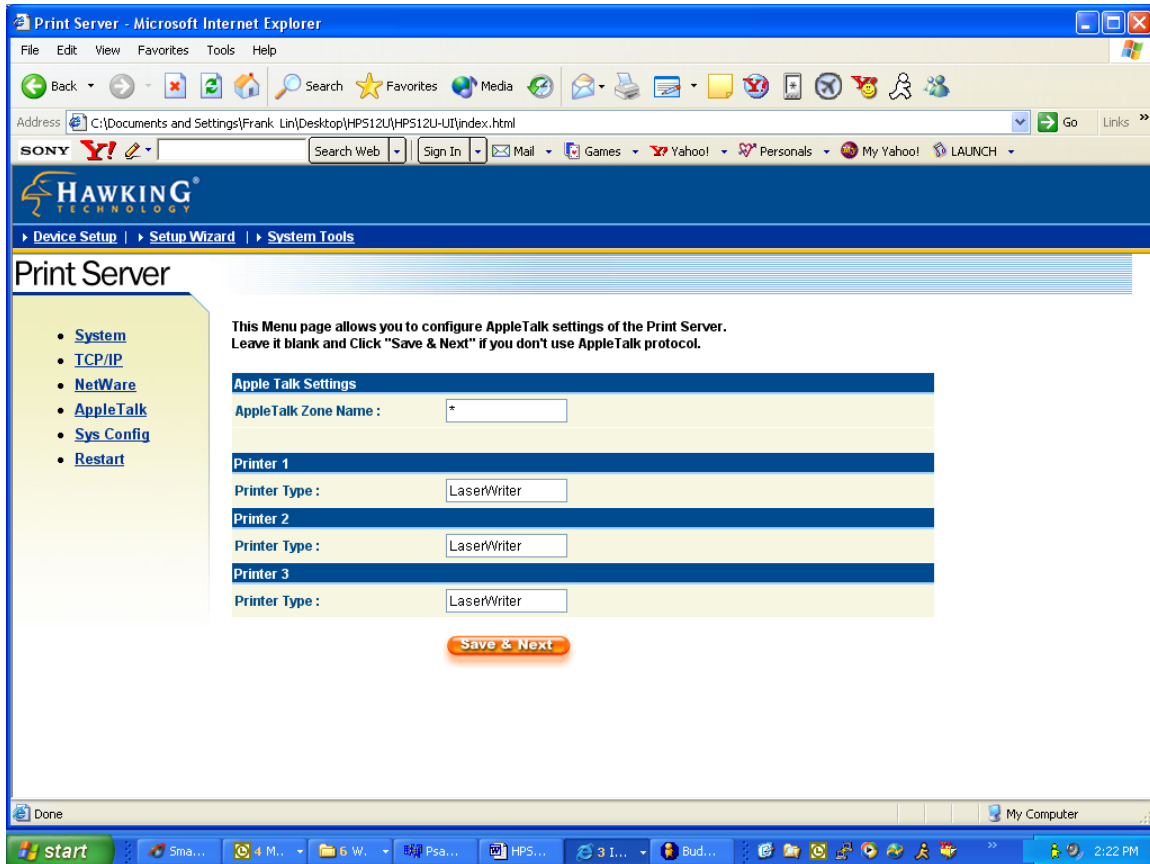


- The HPS12U supports the NetWare Bindery Printing method. The print server periodically polls the NetWare server printer queues for printing jobs. You have to assign the NetWare server name, print server polling interval, and the name of queue on the NetWare server for each printer port.
- **Polling Time** is the polling interval of the print server for queued printing jobs on the NetWare server.
- **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 print server.

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

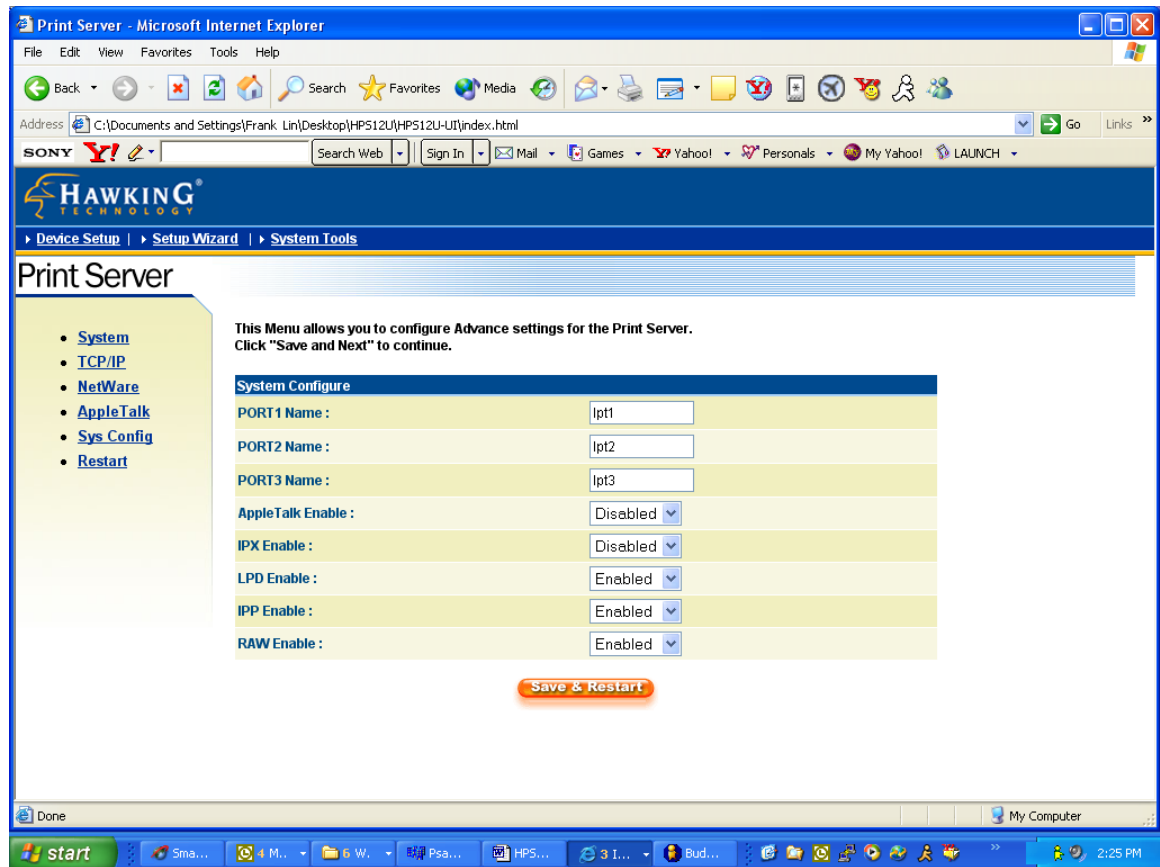
8.4.4 AppleTalk



- AppleTalk is a data communication protocol often used by Macintosh computers. The HPS12U can use these parameters to join the AppleTalk network and share printers with other AppleTalk workstations. You have to setup the “Zone Name” and “Printer Type” for each printer port of this print server.
- **Zone Name:** The HPS12U has to join an AppleTalk zone before it can be shared with 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 an “*” in the “Zone Name” field.

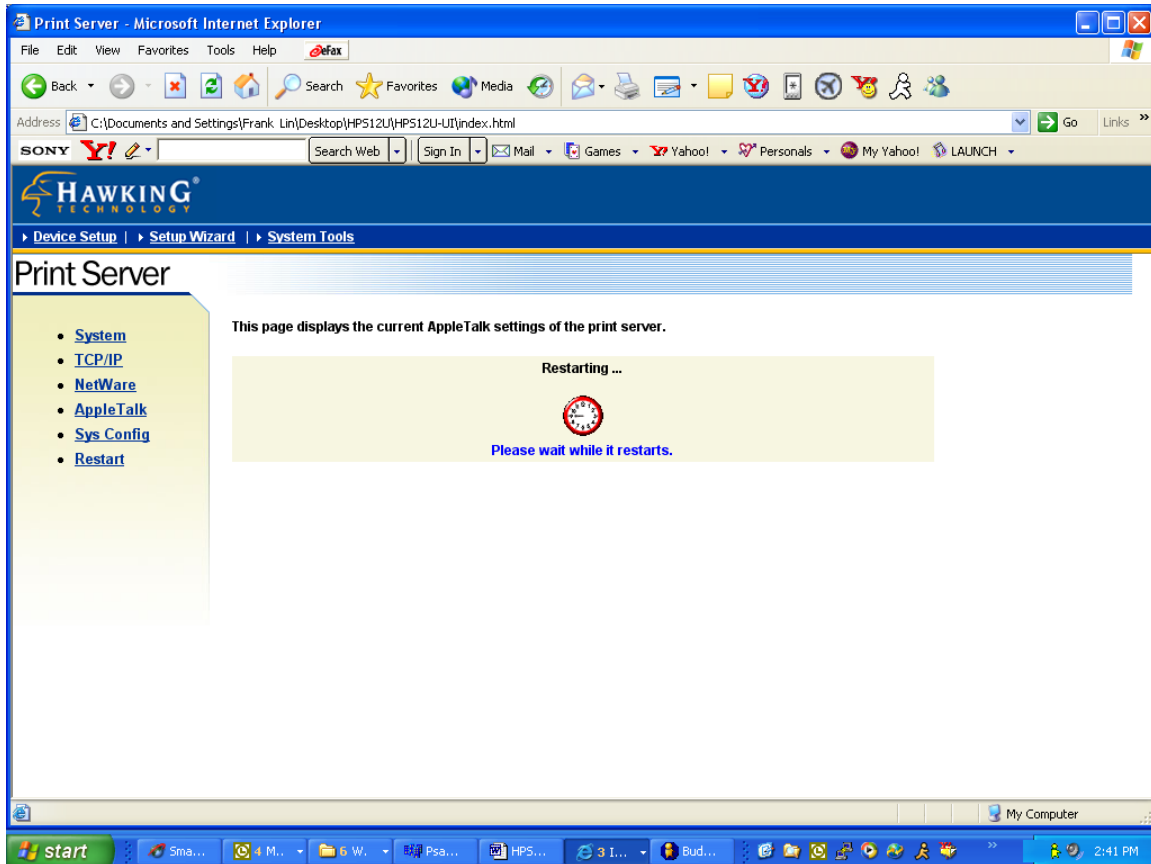
- **Printer Type:** This is the type of printer attached to each printer port. You can get the printer type from the manufacturer of the printer.

8.4.5 System Configuration



- From the System configuration page you can select to enable/disable each printing protocol and assign a name for each printer port of the HPS12U.
- **Port Name** is the name of the printer port. Each printer port has to be assigned a name. The client utility uses this name to access the printer port.

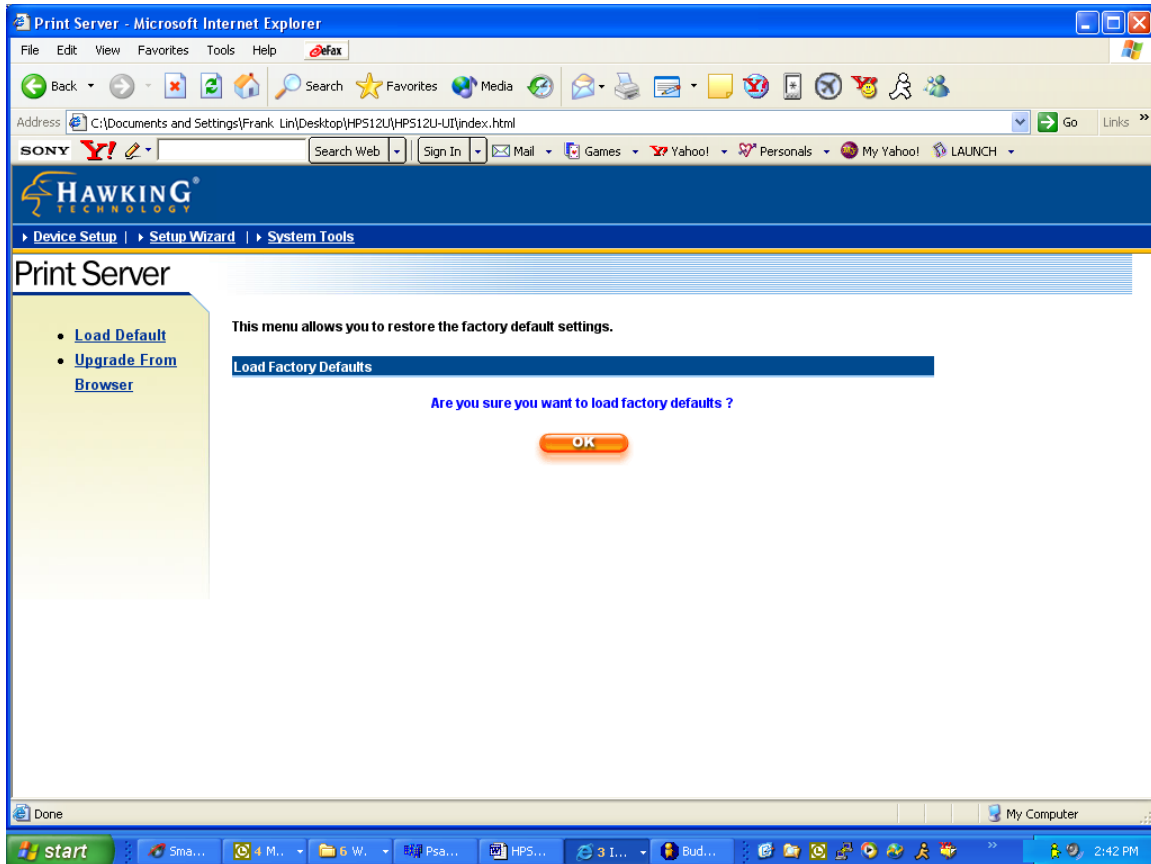
8.4.6 Restart



The “Restart” page will be displayed after you have finished and saved system configuration. You can click the “Restart” button to restart the system.

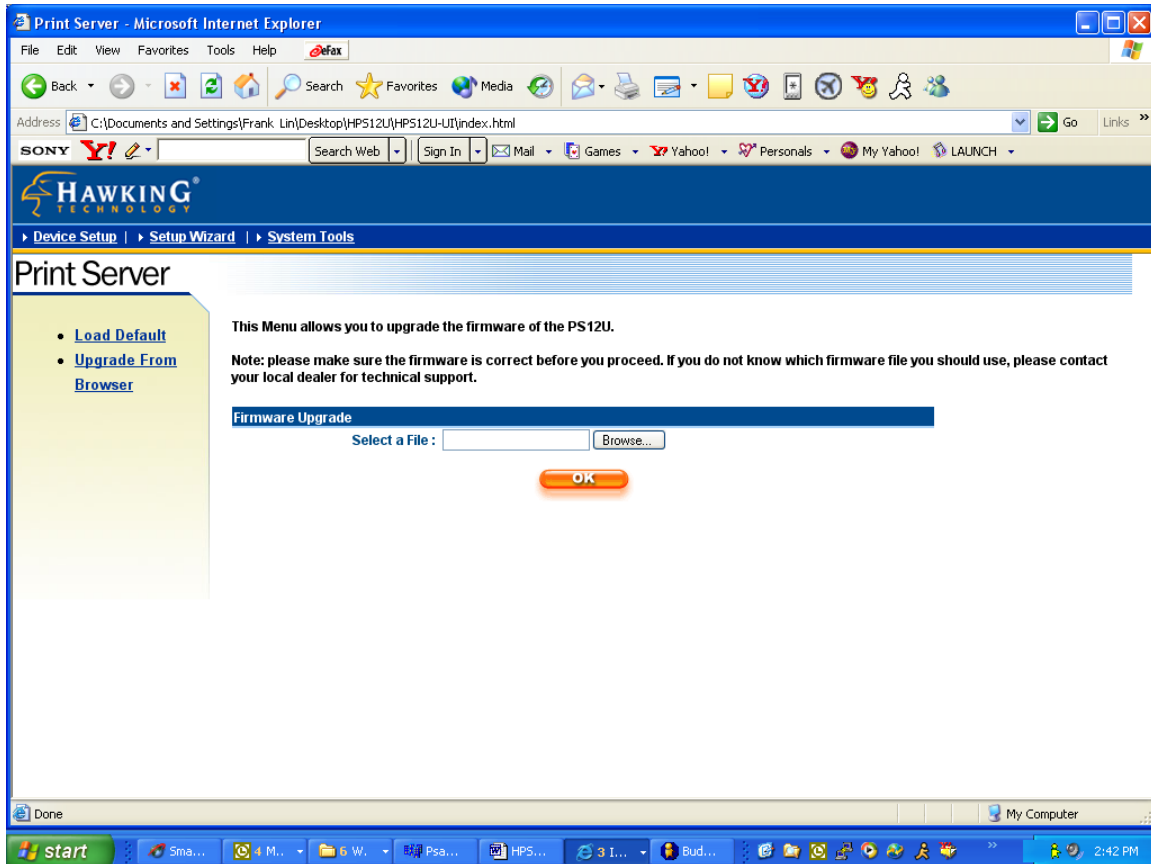
8.5 System Tools

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 Firmware



You can upgrade new firmware for the HPS12U from this page. Click “Browse” to select the new firmware from your hard drive or CD and then click “OK.” The firmware will take several minutes to update.

9. IPP Printing

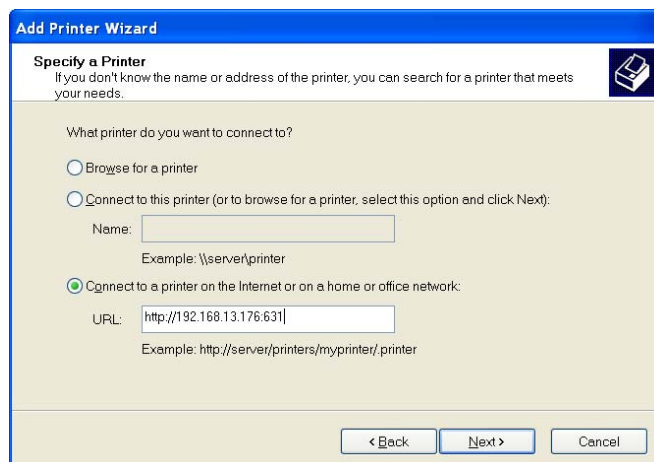
9.1 Introduction

The IPP (Internet Printing Protocol) provides you with a convenient method for remote printing jobs via the TCP/IP protocol. The HPS12U 2 USB + 1 Parallel Port 10/100M Print Server can support IPP printing capabilities. It is not necessary to modify any of the print server's internal settings to use the IPP printing features. Windows 2000 and Windows XP computers can use IPP printing functions through the operating system's internal IPP functionality. IPP printing will let you share your network printer with any PC that can access the HPS12U print server by IP. You can even share your printer with users over the Internet who know your printer model, printer port, and IP address of your HPS12U.

9.2 System Setup

9.2.1 Print Server Side

It is not necessary to modify your IPP settings on the print server side. Make sure you know your print server's IPP settings and make sure they are correctly set to your network's IP settings. Contact your system administrator if you are unfamiliar with your network's routed IP settings. If you would like to share your printer with Internet users outside of your internal network structure, you will have to set an outside IP address that can access the print server. You also have to make sure that any gateway, router or firewall does not block the IPP protocol if you have those devices installed. Please contact your system administrator or consult your router's manual for DMZ or port mapping configuration settings.



The screenshot shows a Windows-style dialog box titled "Add Printer Wizard". The main heading is "Specify a Printer". Below this, a small text box says: "If you don't know the name or address of the printer, you can search for a printer that meets your needs." To the right of this text is a small icon of a printer. Below the text, there are three radio button options for "What printer do you want to connect to?":

- ☐ Browse for a printer
- ☐ Connect to this printer (or to browse for a printer, select this option and click Next):
- ☒ Connect to a printer on the Internet or on a home or office network:

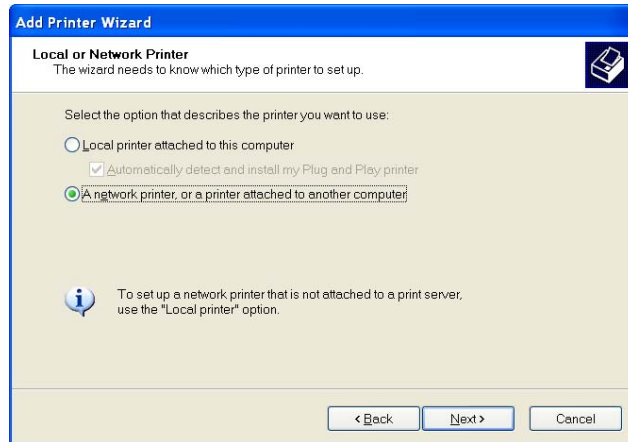
Under the second option, there is a text field labeled "Name:" with an example: "Example: \\server\printer".

Under the third (selected) option, there is a text field labeled "URL:" with the text "http://192.168.13.176:631" entered. Below this field is an example: "Example: http://server/printers/myprinter/.printer".

At the bottom of the dialog box are three buttons: "< Back", "Next >", and "Cancel".

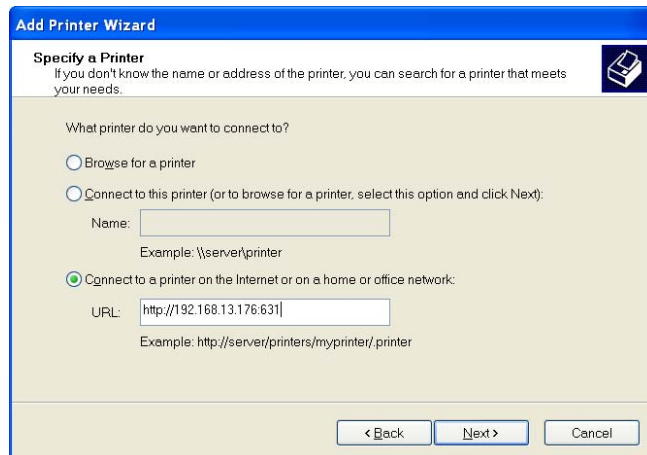
9.2.2 Client Side

You will need to perform Window's standard *Add New Printer* procedure. To do this, select the "*Network Printer*" setting as shown in the screen below and click "Next."



Select "*Connect to a printer on the Internet or on a home or office network*" and enter the URL of your HPS12U print server. The URL format will be "http://IP/LPT_PORT:631". The IP portion of the URL will be the print server's IP address. LPT_PORT is the port name of your print server that your printer is connected to. For one port print servers, the port name will be "lpt1". For Hawking's three-port print server, the port names are – lpt1, lpt2 or lpt3 depending on which printer port your printers are connected to. (Please write down the printer port and corresponding printer model for configuring our line of multiple port print servers.) The last number you will need to write down after the port name and colon will be 631. 631 is the IPP standard port number for IPP printing requests. An example IP address will be modeled as follows: The URL will be <http://192.168.12.13/lpt1:631> for a print server located on the

first printer port (lpt1) of the IP address 192.168.12.13. (lpt2 and lpt3 for printers located on the 2nd and 3rd ports respectively.) After entering the URL of print server, click “Next ” and complete the remaining configuration settings to access the shared network printer.



The image shows a Windows 'Add Printer Wizard' dialog box. The title bar is blue with the text 'Add Printer Wizard'. The main area has a light beige background. At the top left, it says 'Specify a Printer' followed by a smaller line: 'If you don't know the name or address of the printer, you can search for a printer that meets your needs.' To the right of this text is a small icon of a printer. Below this, the question 'What printer do you want to connect to?' is followed by three radio button options. The first is 'Browse for a printer'. The second is 'Connect to this printer (or to browse for a printer, select this option and click Next):' with a text box for 'Name:' and an example '\\server\printer'. The third is 'Connect to a printer on the Internet or on a home or office network:', which is selected with a green dot. This option has a text box for 'URL:' containing 'http://192.168.13.176:631' and an example 'http://server/printers/myprinter/.printer'. At the bottom right are three buttons: '< Back', 'Next >', and 'Cancel'.

Add Printer Wizard

Specify a Printer
If you don't know the name or address of the printer, you can search for a printer that meets your needs.

What printer do you want to connect to?

☐ Browse for a printer

☐ Connect to this printer (or to browse for a printer, select this option and click Next):

Name:

Example: \\server\printer

☒ Connect to a printer on the Internet or on a home or office network:

URL:

Example: http://server/printers/myprinter/.printer

< Back Next > Cancel