



Wireless Nd1 Router User Guide

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The USRobotics Wireless **Nd₁** Router provides the latest 802.11n Draft 1.0 technology, delivering optimal wireless connections to your PCs, laptops, and other wireless devices. The router also provides the maximum speed – up to 270 Mbps – delivering large files like MP3s, digital photos, and digital video through your network fast and efficiently. And with the router, your network will be protected with a suite of security capabilities, including Stateful Packet Inspection firewall for protection from network intrusions, Wi-Fi Protected Access (WPA and WPA2), WPA2/802.11i, TKIP and AES Encryption, MAC address authentication, and more.

In addition to providing state-of-the-art wireless connectivity, your router includes an integrated print server, allowing you to share your USB printer with other computers on your network and a 4-Port Ethernet switch for connecting additional Ethernet devices.

And to assure a simple, straight-forward installation, the USRobotics router offers SecureEasySetup™. SecureEasySetup walks you through the wireless security configuration between your router and your wireless clients. Sharing Internet access securely, wirelessly or wired, has never been easier.

System Requirements

- A computer with an Ethernet adapter installed
- A functioning Ethernet-based cable or DSL modem or other WAN connection for Internet access
- An HTML 4.01-compliant Web Browser with JavaScript enabled
- For wireless connections to the router, a 802.11b/g/n Draft 1.0 compatible wireless adapter

Product Views

Front



Symbol	Name	State	Condition
	Power	Off	Not receiving power.
		Solid	Receiving power.
	WLAN	Off	Wireless connection is disabled.
		Solid	Wireless connection is enabled.
		Flashing	Sending and receiving data.
	SecureEasySetup	Off	SecureEasySetup mode is not ready on the router. ¹
		Solid	SecureEasySetup mode is ready.
		Blinking	Communicating with SecureEasySetup devices.
	WAN	Off	No Internet connection is established.
		Flashing	Sending and receiving data.
		Solid	Internet Connection is established.
	LAN 1 to 4	Off	No LAN connection.
		Solid	LAN link is achieved.
		Flashing	Sending and receiving data.
	Printer	Off	No printer connection is detected.
		Solid	Printer connection is detected.
		Flashing	Sending data to printer.

Back



Item	Function
WAN	Connects your router to your Cable modem, DSL modem or network. <i>The Internet, or your business/office network, is often called a Wide Area Network (WAN).</i>
LAN Ports 1 - 4	Connects additional devices to your router.
USB	Connects your router to a USB printer.
Reset	Reboots your router or restores your router to the factory default settings. • To reboot your router without changing your current settings, press and hold the Reset button for 1 second. • To restore your router to the factory default settings, press and hold the Reset button for 7 seconds.
15VDC	Connects the power adapter to your router.

 SecureEasySetup button	Enables SecureEasySetup on your router. ¹ • To enable SecureEasySetup on your router, press and hold the SecureEasySetup button for 1 second. • To reset your wireless security settings to the factory default (no security enabled), press and hold the SecureEasySetup button for 7 seconds.
	Connects an antenna to the router.

¹ For SecureEasySetup to be ready on your router, it must be set with **WPA2 and WPA (PSK)** wireless security, with **TKIP and AES** encryption, and a pass phrase (which is also commonly called a *Network key*, *WPA key*, or *WPA Pre-shared key*). You can configure the settings manually, or press the SecureEasySetup button to configure your wireless settings.





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Product Specifications

- Integrated 270 Mbps 802.11n Draft 1.0 Wireless Access Point
- One RJ-45, 10/100 Mbps auto-sensing and auto-switching Ethernet WAN port
- Four RJ-45, 10/100 Mbps auto-switching Ethernet LAN ports
- DHCP server (LAN) and client (WAN)
- Static and Dynamic IP addressing
- PPP over Ethernet (PPPoE) client support
- Point-to-Point Tunneling Protocol (PPTP) support
- DMZ host support
- Remote access capabilities
- USB 2.0 port for attaching a network printer
- BPSK, QPSK, CCK, PBCC, and OFDM modulations
- Complies with IEEE 802.11g 54 Mbps wireless radio standard and 802.11n Draft 1.0 270 Mbps wireless radio
- Wireless Multi-Bridging support using Wireless Distribution System (WDS)
- Wi-Fi Multi Media (WMM): Prioritization of marked voice and video traffic
- VPN Pass-through (IPSEC, PPTP, L2TP)

Security Features

- WPA and WPA2 (Wi-Fi Protected Access)
- 64/128-bit WEP (Wired Equivalent Privacy) data encryption with Open/Shared Key
- WPA/WPA2-Enterprise (WPA-WPA2 with 802.1X)
- Network Address Translation (NAT) capability: Port Triggering, Port Forwarding
- Integrated Firewall
- Ability to disable SSID Broadcast

- MAC address authentication and wireless association control
- 802.1x pass-through support (not supported in WDS Mode)



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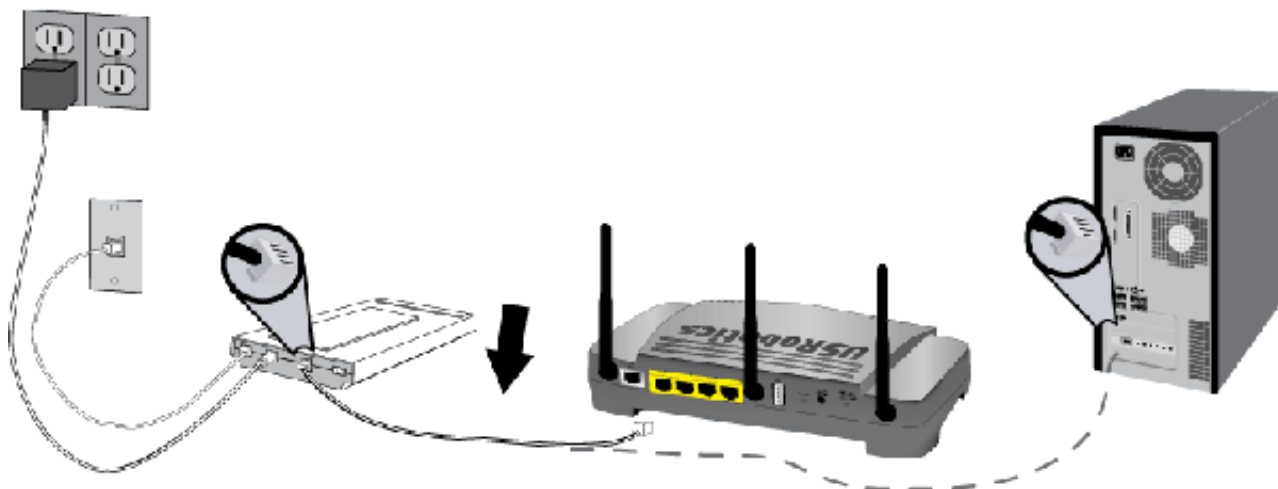
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Router Installation

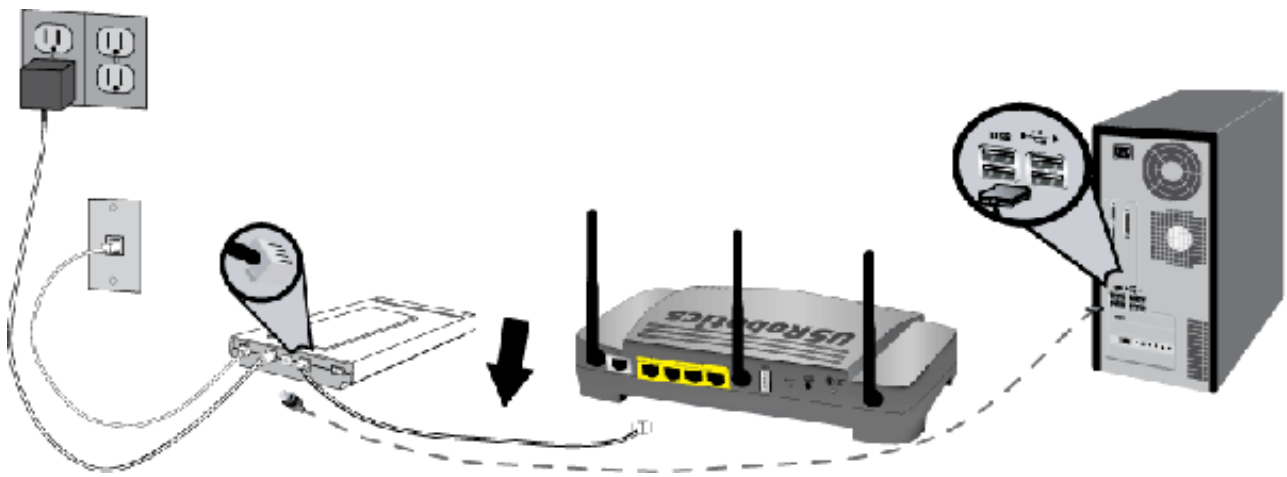
Step One: Connect Your Router

1. Connect your DSL or Cable modem to the router:
 - A. Power off your computer and your modem.
 - B. Connect the provided antennas to the back of the router.
 - C. Do one of the following:

If your modem connects to your computer with an Ethernet cable: Locate the Ethernet cable that connects your DSL or cable modem to your computer's Ethernet adapter, and disconnect it from your computer only: do not disconnect the cable from your DSL or cable modem.

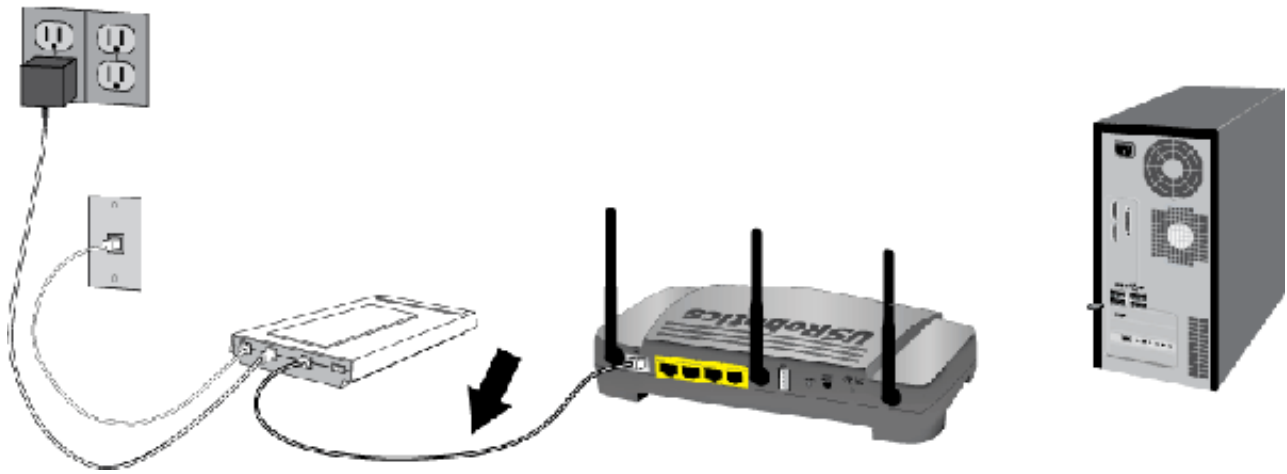


If your modem connects to your computer with a USB cable: Disconnect the USB cable from both the modem and your computer. You will need another Ethernet cable in addition to the one provided with the router. Connect one end of the Ethernet cable to the Ethernet port on the back of your DSL or cable modem.



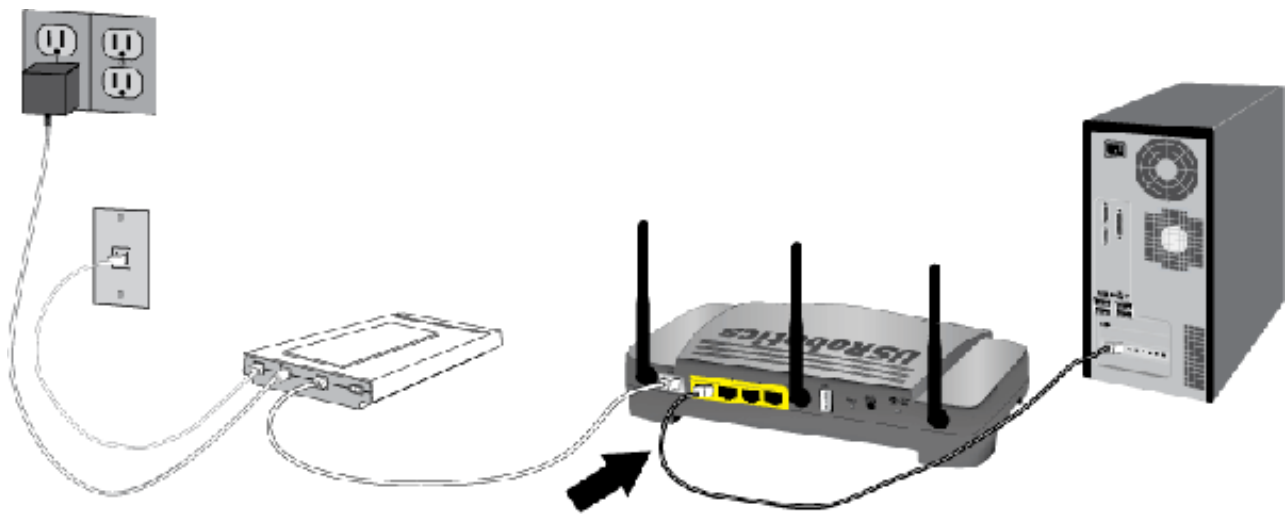
Note: The USB port on the router is for connecting a USB printer only. Do not connect your modem to the USB port on the router. For instructions on connecting a USB printer to your router, see [Install a USB Printer](#).

- A. Connect the free end of the Ethernet cable to the **WAN** port on the rear of the router.



2. Connect the router to your computer:

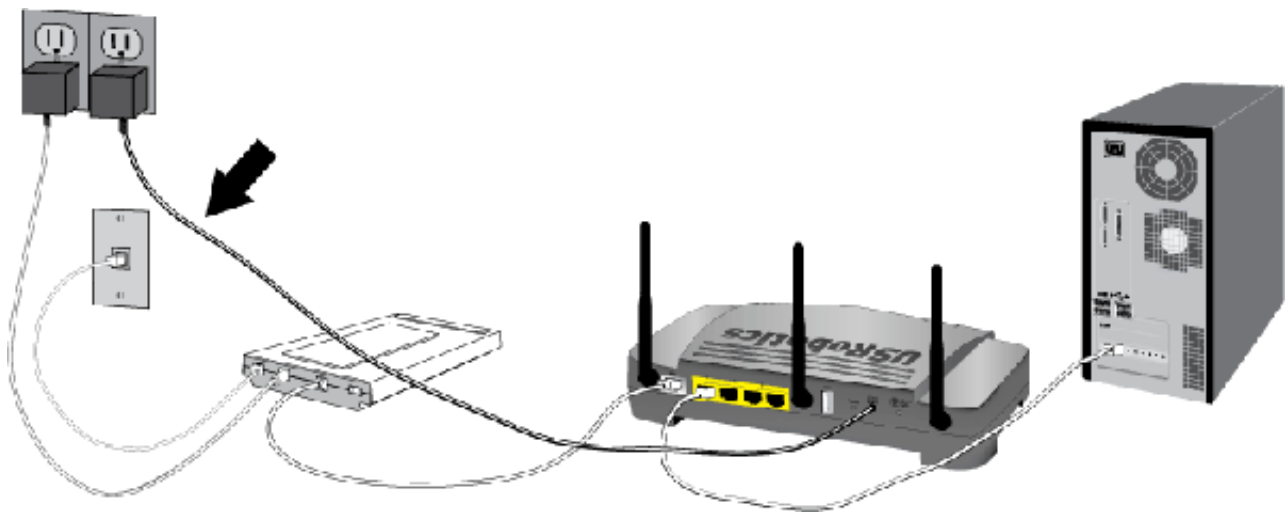
- A. Connect one end of the supplied Ethernet cable to your computer's Ethernet adapter.
- B. Connect the other end to one of the router's **LAN** ports.



3. Power up the network:

1. Turn on your modem. Wait until the LEDs stabilize before powering up your router.
2. Connect the supplied power cord to the **15VDC** port on the router.

Note: UK Users: With the power adapter unplugged, connect the appropriate power plug for your country on to the power adapter. Apply enough pressure to cause a click and firmly seat the plug.



4. Plug the power adapter into a standard power outlet.
5. Turn on your computer.

Step Two: Configure the Basic Connection Settings

1. Start your Web browser.
2. In the location or address line, type **192.168.2.1** and press ENTER to access the router configuration pages.

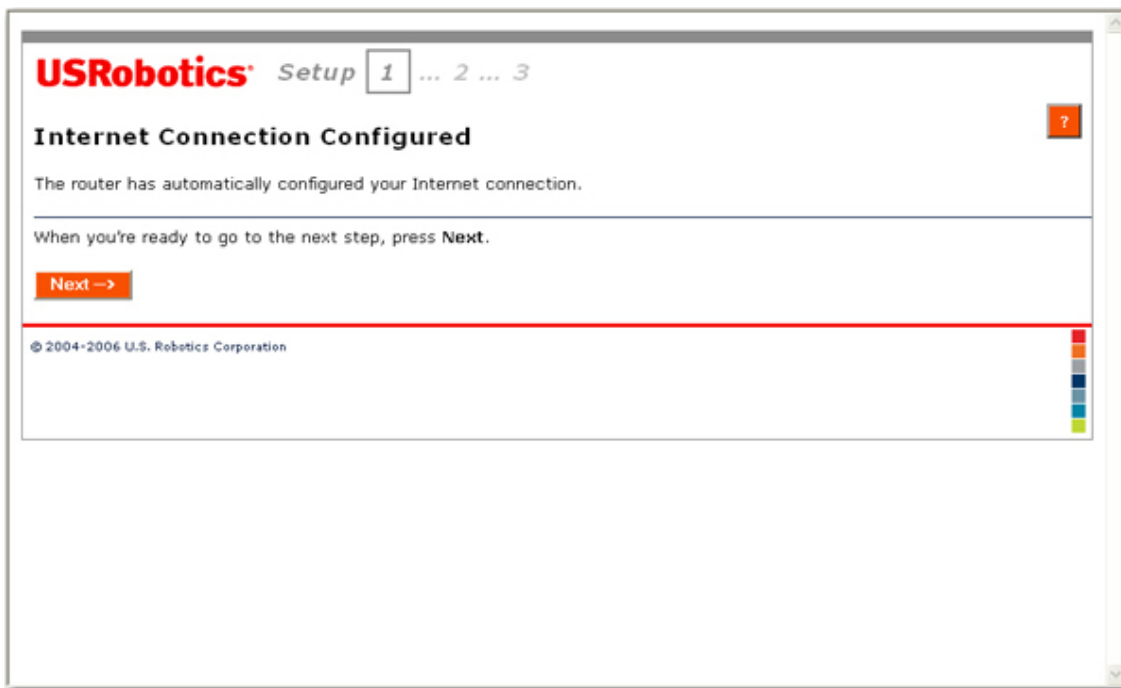
Note: The router's default IP address is 192.168.2.1.

3. Click **Start**. The Setup Wizard leads you through the basic router configuration process.



Note: If you see a “Page Not Found” error at any time while using the router configuration pages, press the **Back** button in your Web browser or refresh the page.

4. The Setup Wizard will attempt to automatically detect your Internet connection.



If the router does not automatically detect your Internet connection, verify the power cord and all the Ethernet cables are connected correctly. This includes the cables connecting the router, the modem, and all the computers in the network. Also, verify your Internet connection is in working order. Then, click **Detect Connection** until you reach the "**Internet Connection Configured**" screen.

If the router still cannot connect, you can [enter your Internet service provider \(ISP\) information manually](#) or see [Troubleshooting](#).

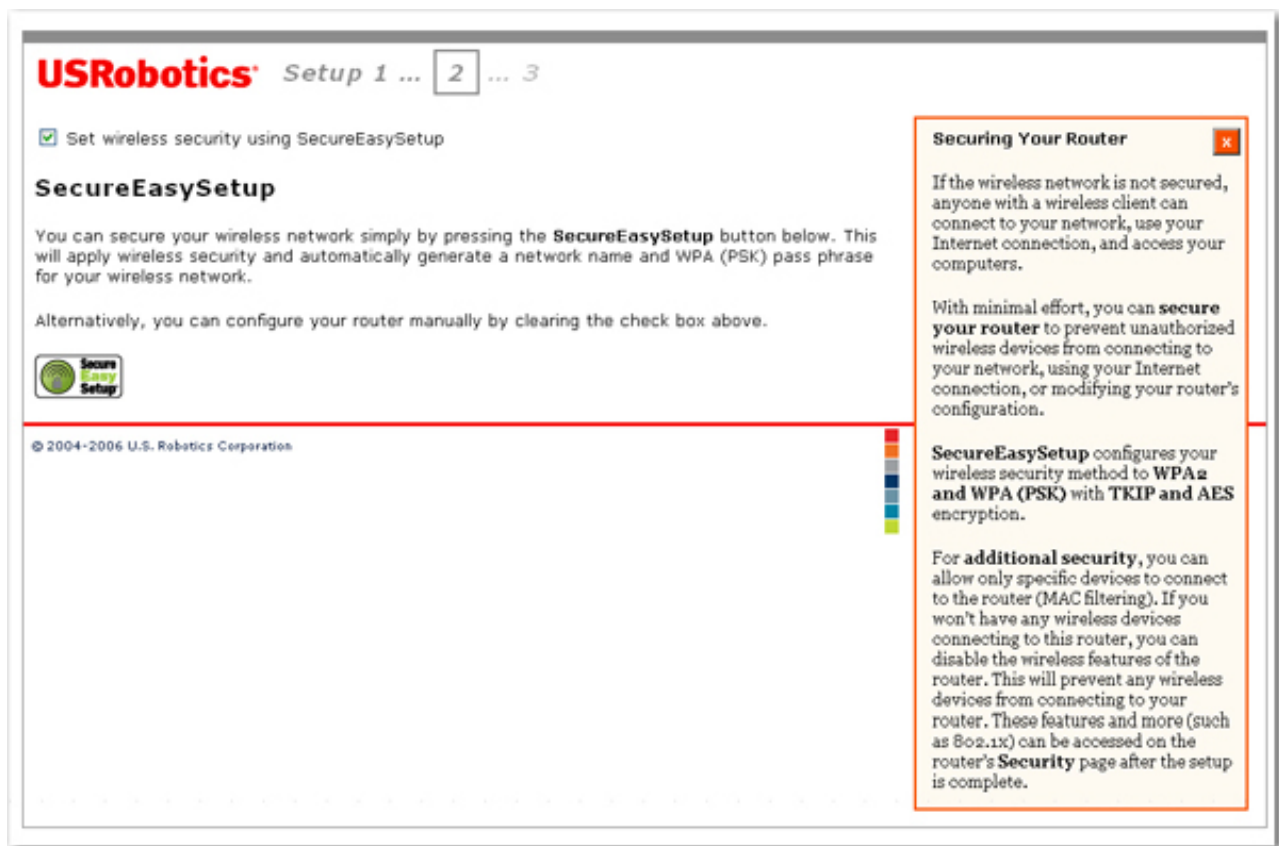
5. Click **Next**.

6. Do one of the following:

- A. To use SecureEasySetup to set your wireless security, select **Set wireless security using SecureEasySetup** and click the



button on the screen.



- B. To manually set your wireless's security information, deselect **Set wireless security using SecureEasySetup** and enter the **Network Name** (SSID), select a security **Method**, and enter your [wireless security information](#) for the router, then click **Next**.

USRobotics® Setup 1 ... **2** ... 3

☐ Set wireless security using SecureEasySetup

Network Name (SSID)

This is the name of your wireless network. Wireless devices will need to know the network name (also known as an SSID) of your router in order to communicate with it.

Network name:

USRobotics recommends that you change the **network name** and treat it like a password. Use a combination of more than eight alphanumeric characters that is not easy to guess (such as "USR5464RouterOffice" or "Fish81Tree").

Security

USRobotics recommends securing your router from unauthorized wireless devices by using WPA encryption. If you have older wireless devices that don't support WPA, you can select WEP. If you want to use a different method later, you can change it on the router's **Security** page after the setup is complete.

Method:

Pass phrase:

(The pass phrase must be between eight and sixty-three characters long.)

USRobotics recommends that you treat your **WPA pass phrase** like a password and use a combination of alphanumeric characters that is not easy to guess (such as "5Rock2Fish9Sand" or "20Dogs933Trot").

You will need to enter these values when you configure a wireless client. After setup is complete, these values will be displayed on the router's **Status** and **"How to Add a New Client" Tutorial** pages, and you can write them down or print them.

When you're finished and ready to go to the next step, press **Next**.

Next →

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Securing Your Router

If the wireless network is not secured, anyone with a wireless client can connect to your network, use your Internet connection, and access your computers.

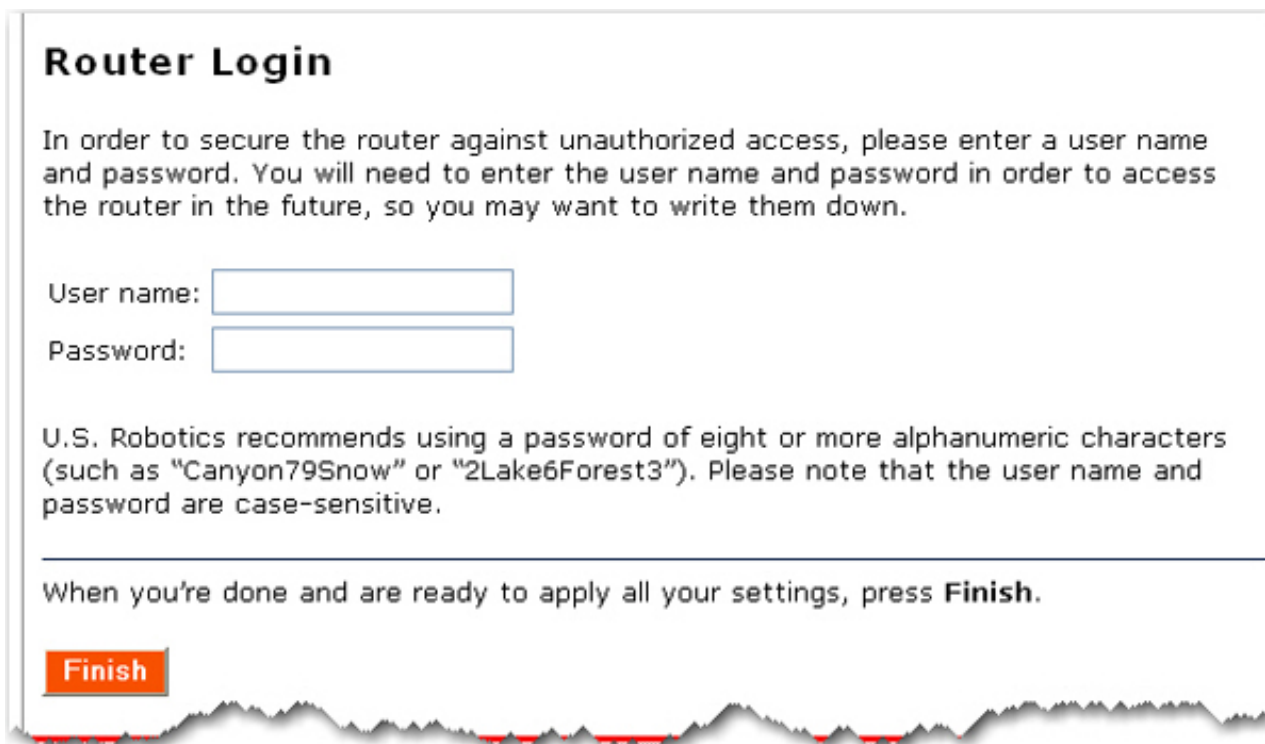
With minimal effort, you can **secure your router** to prevent unauthorized wireless devices from connecting to your network, using your Internet connection, or modifying your router's configuration.

SecureEasySetup configures your wireless security method to **WPA2 and WPA (PSK)** with **TKIP and AES** encryption.

For **additional security**, you can allow only specific devices to connect to the router (MAC filtering). If you won't have any wireless devices connecting to this router, you can disable the wireless features of the router. This will prevent any wireless devices from connecting to your router. These features and more (such as 802.1x) can be accessed on the router's **Security** page after the setup is complete.

Note: For your wireless security settings, it is recommended that you select the **WPA2 and WPA (PSK)** wireless security method using **TKIP and AES** encryption for the most secure wireless network.

9. Enter a **User name** and **Password** for your router and click **Finish**.

The image shows a 'Router Login' screen. At the top, the title 'Router Login' is in bold. Below it, a paragraph explains that a user name and password are required for secure access and should be written down. There are two input fields: 'User name:' and 'Password:'. Below these fields, a paragraph recommends a password of eight or more alphanumeric characters, giving examples like 'Canyon79Snow' or '2Lake6Forest3', and noting that the login is case-sensitive. At the bottom, a message says 'When you're done and are ready to apply all your settings, press **Finish**.' and there is an orange 'Finish' button.

Router Login

In order to secure the router against unauthorized access, please enter a user name and password. You will need to enter the user name and password in order to access the router in the future, so you may want to write them down.

User name:

Password:

U.S. Robotics recommends using a password of eight or more alphanumeric characters (such as "Canyon79Snow" or "2Lake6Forest3"). Please note that the user name and password are case-sensitive.

When you're done and are ready to apply all your settings, press **Finish**.

Finish

Your password must meet the following criteria:

- The Wireless **Nd₁** Router lets you set a password up to 15 characters long. The most secure passwords are usually between 8 and 15 characters long.
- The router will allow you to enter a space or other punctuation in your password.
- Use a mixture of upper (**A** through **Z**) and lower (**a** through **z**) case letters.
- Adding numbers **0** through **9** to a password increases security.
- Use ASCII symbols, such as ~ ! @ # \$ % & ^ *, etc, to further increase the security of your password.

Note: In this step of the Setup Wizard procedure, you create the user name and password you will use to log on to the router. You will need to use these whenever you log on to the router. The user name and password are case-sensitive.

10. After the initial configuration, the router will be directed to the **Status** page.
11. If you will be connecting to your network via a wireless connection, you can unplug the Ethernet cable from the router and your computer, install your wireless adapter, and connect to your router. For instructions on installing your wireless adapter, see your wireless adapter's documentation.

Point-to-Point Tunneling (PPTP) Users

If your ISP uses a PPTP connection, you will need to perform the following additional steps to complete your Installation procedure and create an Internet connection. If you have any questions regarding any of the connection settings, contact your ISP.

1. In the router configuration pages, click the **Internet** tab and scroll down to the **Point-to-Point Tunneling (PPTP)** section.
2. Select the **My ISP uses a PPTP connection** checkbox.
3. If your ISP uses Point-to-Point Tunneling (PPTP), select **My ISP uses a PPTP connection** and enter the Domain or IP address of your PPTP server in the **Server** field, and the **User name** and **Password** from your ISP. If your ISP uses a specific authentication method, either select or deselect the appropriate checkboxes.

Point-To-Point Tunneling (PPTP)

If your ISP provided you with information about using the Point-to-Point Tunneling Protocol (PPTP) to establish a Virtual Private Network (VPN) to connect to the Internet, enter it here. (This is not common.)

☒ My ISP uses a PPTP connection.

Server:
(Enter a domain—such as “myisp.com”—or an IP address.)

User name:

Password:

Please select the supported authentication methods. If you’re not sure, you can keep the defaults.

☒ CHAP
☒ MSCHAP
☒ MSCHAP-V2
☐ PAP (not common)

MTU: bytes

MRU: bytes

4. When you are finished, click **Save**. The router will restart and you should then have an Internet

connection. You can go to the [Status](#) page to view your connection information.

Backing Up Your Configuration Settings

Having a backup reduces the effort required in reapplying your configuration settings should you ever restore your router to its factory default settings. USRobotics recommends that you back up your settings now.

1. In the router configuration pages, click the **Device** tab, and scroll down to **Back Up Settings**.
2. Select **Back Up**.
3. Your system will prompt you to save or open the file. Click **Save**.

You have successfully completed the installation procedure. Please register your router at www.usr.com/productreg/.





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USB Network Printer Installation

A USB printer can be connected to the Wireless Nd1 Router and used as a network printer if both your operating system and your printer support the Internet Printing Protocol (IPP). Windows Server® 2003, Windows® XP and 2000 have built-in support for this function. Contact your printer manufacturer to determine if your printer supports IPP.

Note: When used with multi-function printers that scan and copy, the router only supports printing. For bi-directional communication features, such as scanning, connect the multi-function printer directly to the computer. Also, notifications, such as low ink or add paper, are not transmitted from the router to the computer.

After you complete the initial router installation procedure, including basic configuration, you can enable the router's print server function. To install the printer, select the link below that describes your current printer environment:

- [Windows XP or 2000 Computer](#)
- [Windows Me or 98SE Computer](#)
- [Macintosh Computer](#)

- [Linux Computer](#)



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Installing a USB Printer in a Windows XP or 2000 Environment

A USB printer can be connected to the router and used as a network printer if you are using an operating system that supports printing to an Internet Printing Protocol (IPP)-based printer. Windows XP and 2000 have built-in support for this function.

Step One: Local Printer Installation

Note: If the printer has already been installed on every computer that will use it once it is on the network, skip to [Step Two: Get Your Print Server Information](#).

Before connecting your printer to the print server, it is important to install the drivers provided by the printer manufacturer on each computer that will use the printer.

1. Plug your USB printer into one of the USB ports on your computer.
2. Install the printer by following the installation instructions included with your printer.
3. Print a test page to ensure that the printer is working properly.
4. Power off your printer.

Step Two: Get Your Print Server Information

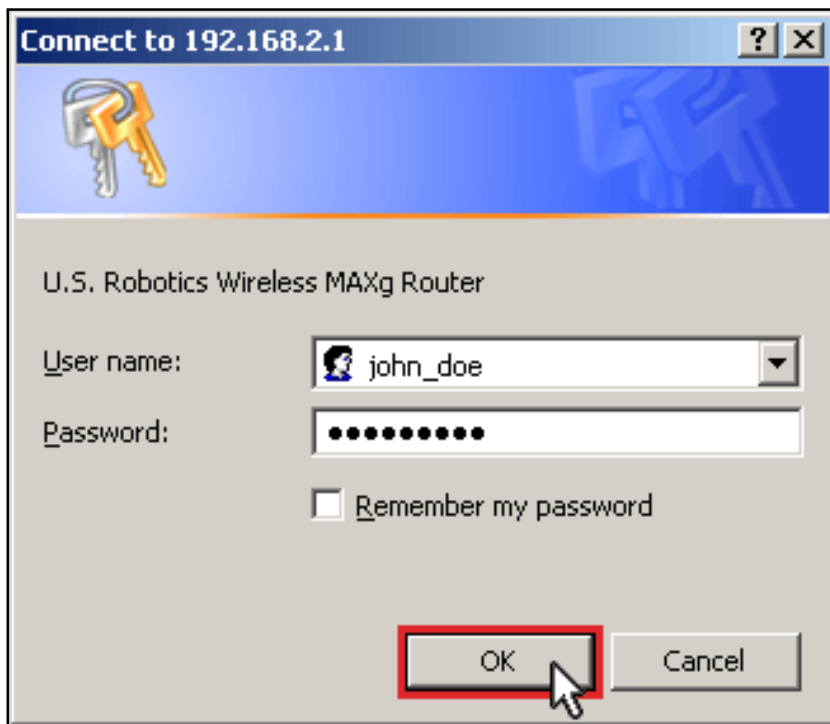
1. Disconnect the printer from your computer and Plug the thin rectangular end of the USB cable into the **USB** port on the router.



5. Connect the power supply to your printer and turn your printer on.
6. Start a Web browser. In the location or address line type 192.168.2.1 and press ENTER.

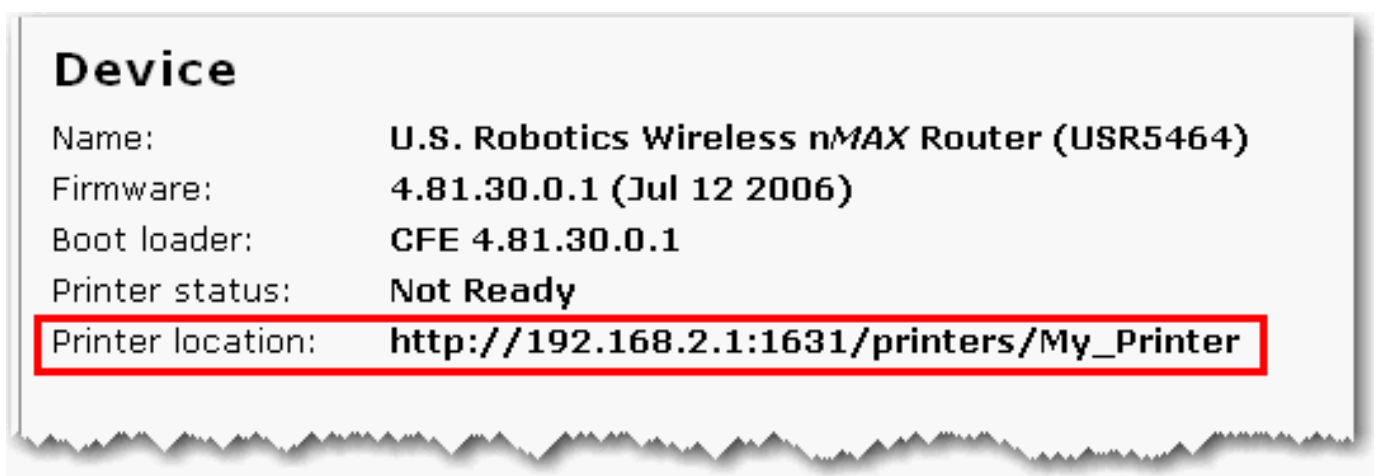
Note: If you have modified your router's IP address, enter the new IP address instead of 192.168.2.1.

2. When the user name and password window appears, type in the user name and the password you created. Click **OK** to load the router's setup page.



Note: You are not prompted to log in the first time you connect to the router configuration pages. During the Setup Wizard procedure, you created a user name and password to log on to the router. You will need to use these whenever you log on to the router. The user name and password are case-sensitive.

3. In the **Device** section of the [Status](#) page, look for the **Printer status** and **Printer location** information.

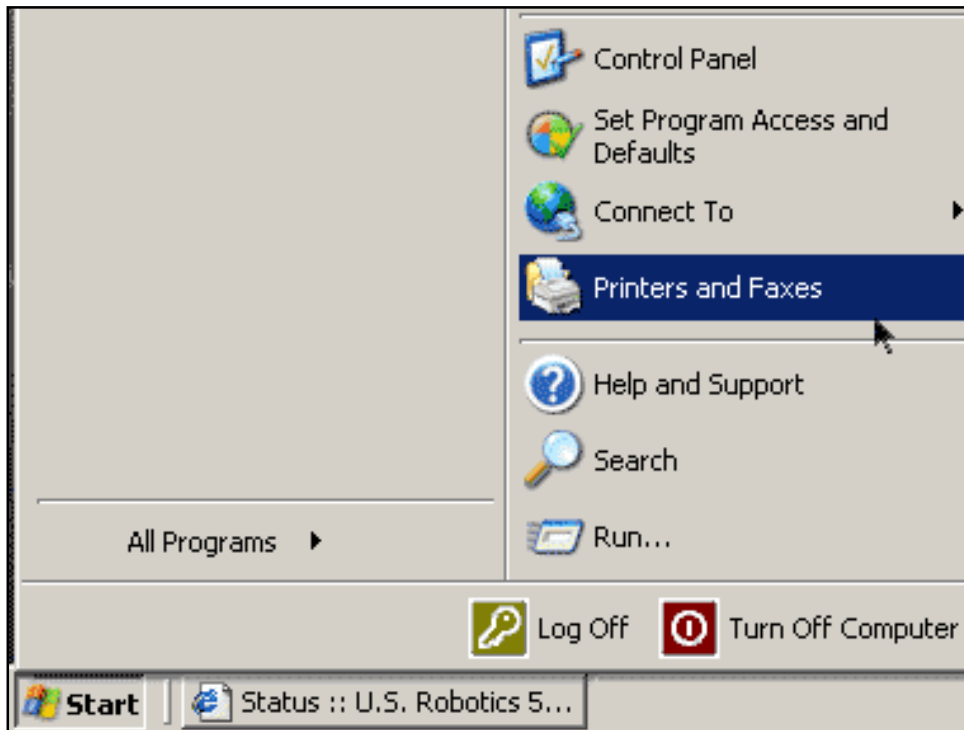


Write down the **Printer location** address. You need the address to set up the printer on computers that are connected to your network that you want to have access to the printer.

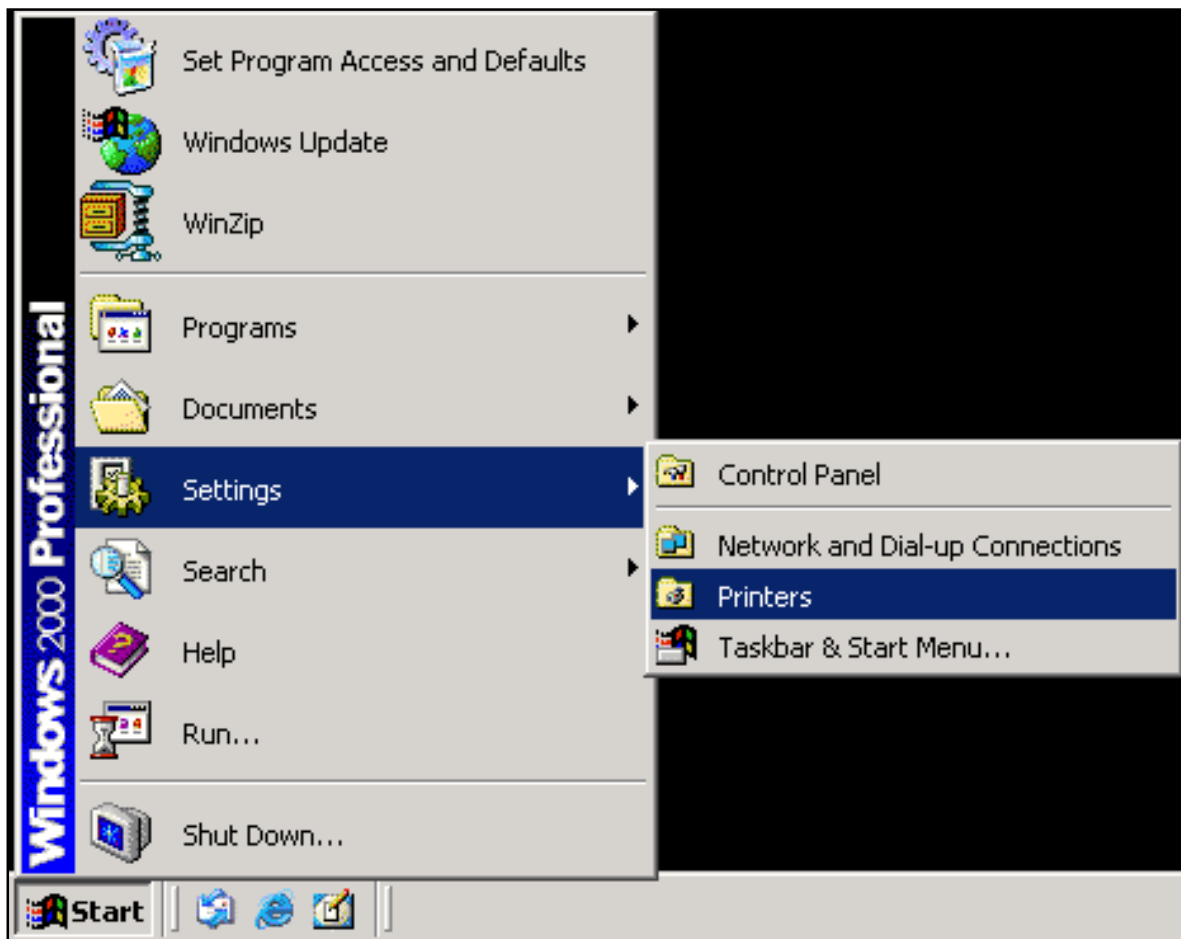
Step Three: Connect Clients to the Wireless USB Print Server

Note: You must perform this procedure on each computer on your network to allow printing using the print server on the router.

1. **Windows XP Users:** Click Windows **Start** > **Printers and Faxes**.

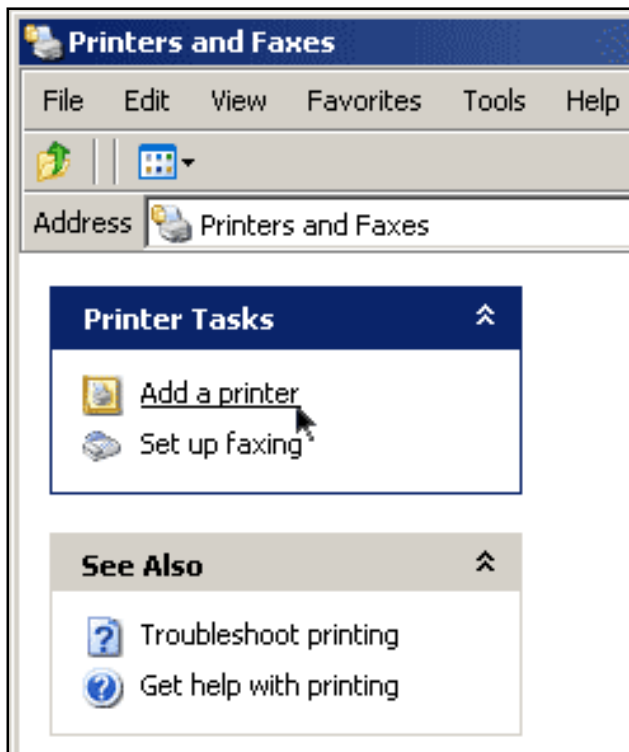


Windows 2000 Users: Click Windows **Start** > **Settings** > **Printers**.

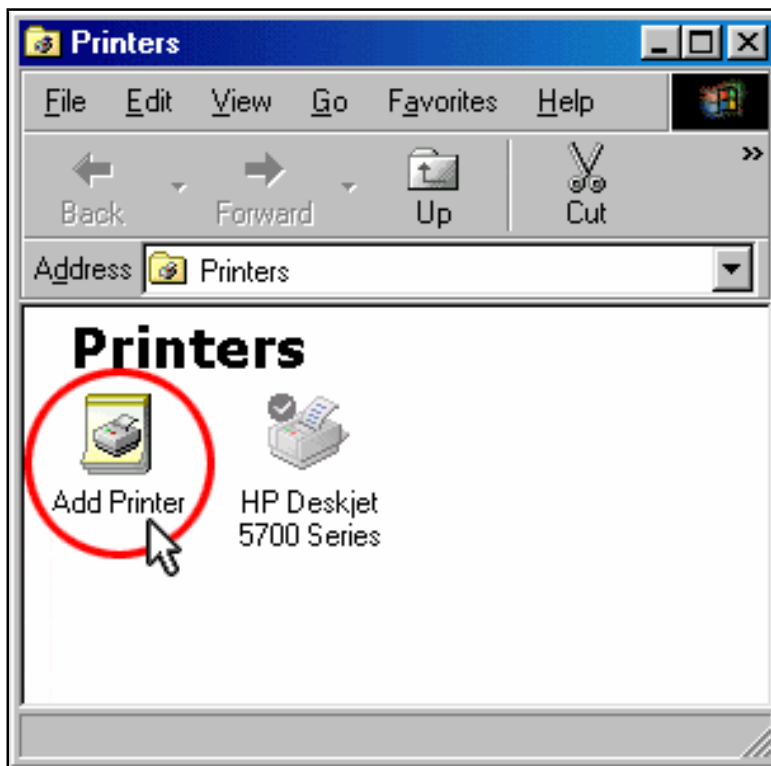


2. Click **Add a Printer**.

Windows XP:



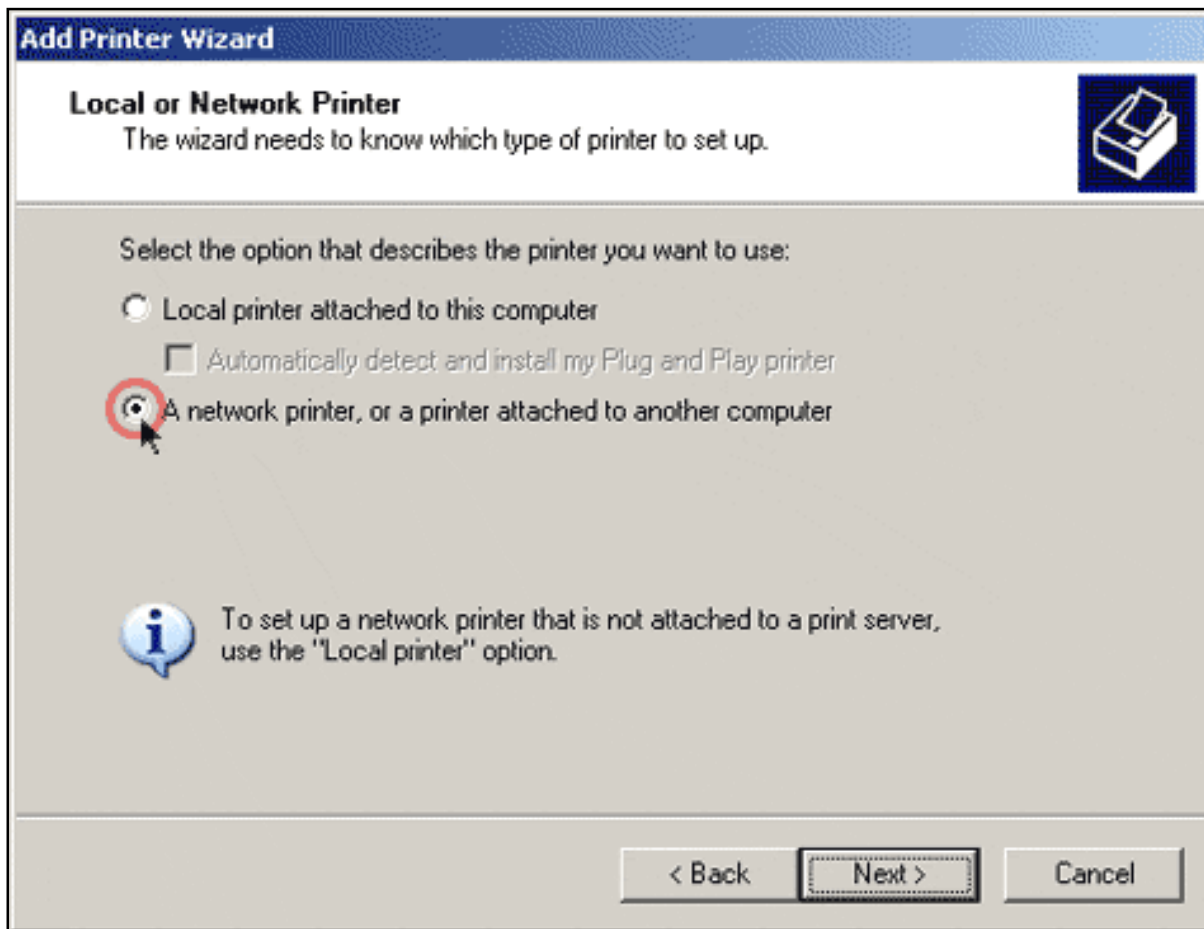
Windows 2000:



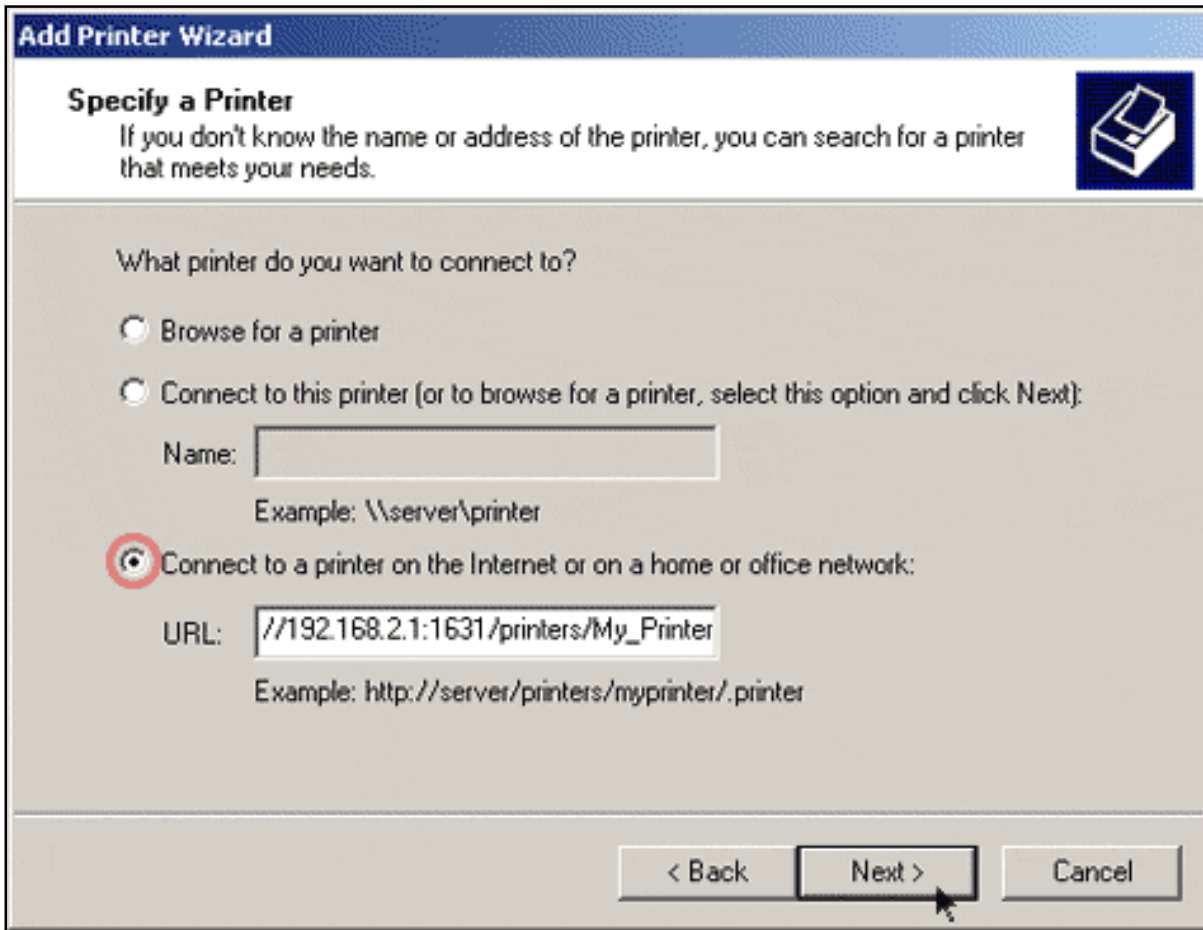
3. The Add Printer Wizard will start. Click **Next**.



4. Choose the radio button labeled **A network printer, or a printer attached to another computer**. Click **Next**.



5. Select **Connect to a printer on the Internet or on a home or office network**. In the URL field, enter the **Printer location** address recorded during step 5. Click **Next**.

The image shows a Windows-style dialog box titled "Add Printer Wizard". The main heading is "Specify a Printer". Below it, a 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. The main area of the dialog has a light gray background and contains the question "What printer do you want to connect to?". There are 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):", followed by a text field labeled "Name:" with an example "\\server\printer". The third option, which is selected and circled in red, is "Connect to a printer on the Internet or on a home or office network:", followed by a text field labeled "URL:" containing "//192.168.2.1:1631/printers/My_Printer" and an example "http://server/printers/myprinter/.printer". At the bottom right are three buttons: "< Back", "Next >", and "Cancel". A mouse cursor is pointing at the "Next >" button.

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:

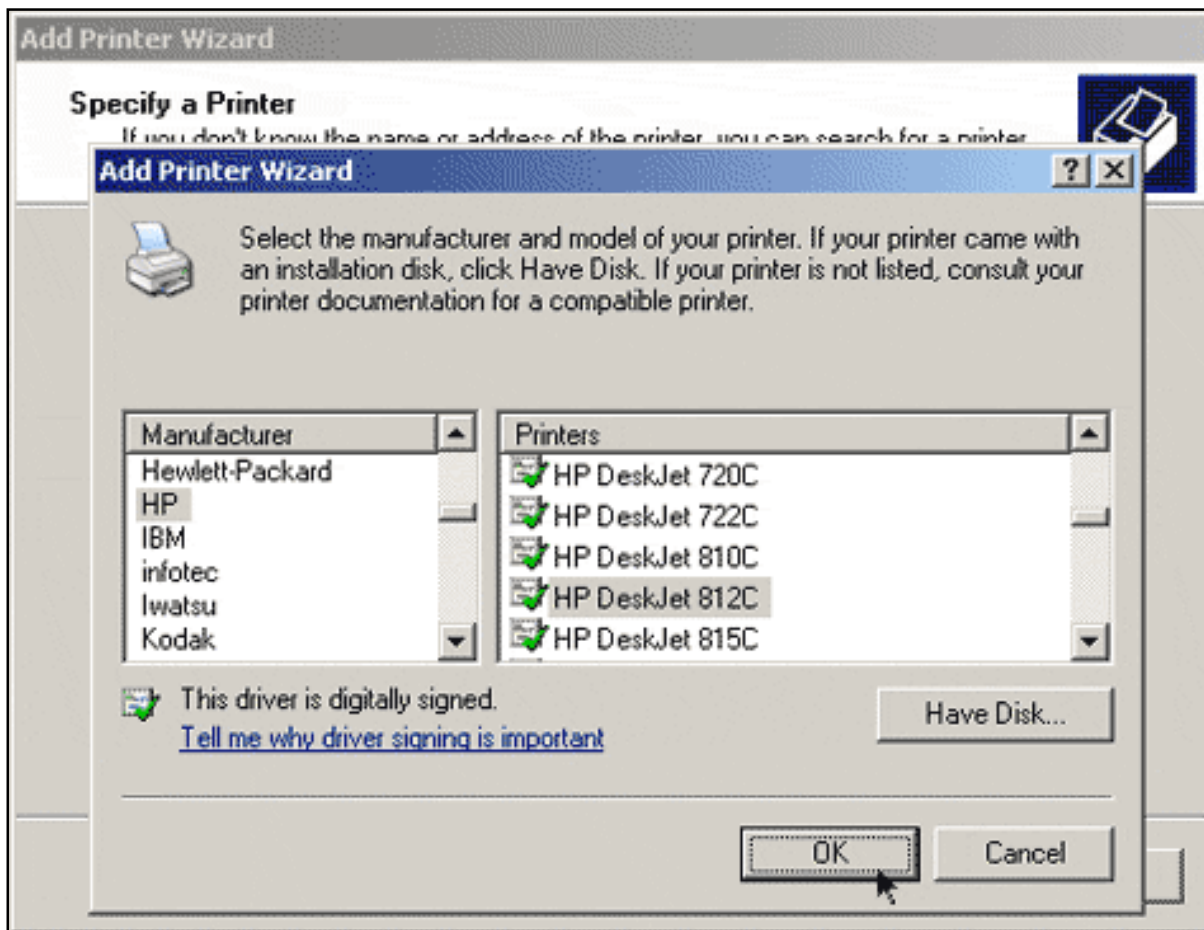
Example: http://server/printers/myprinter/.printer

< Back Next > Cancel

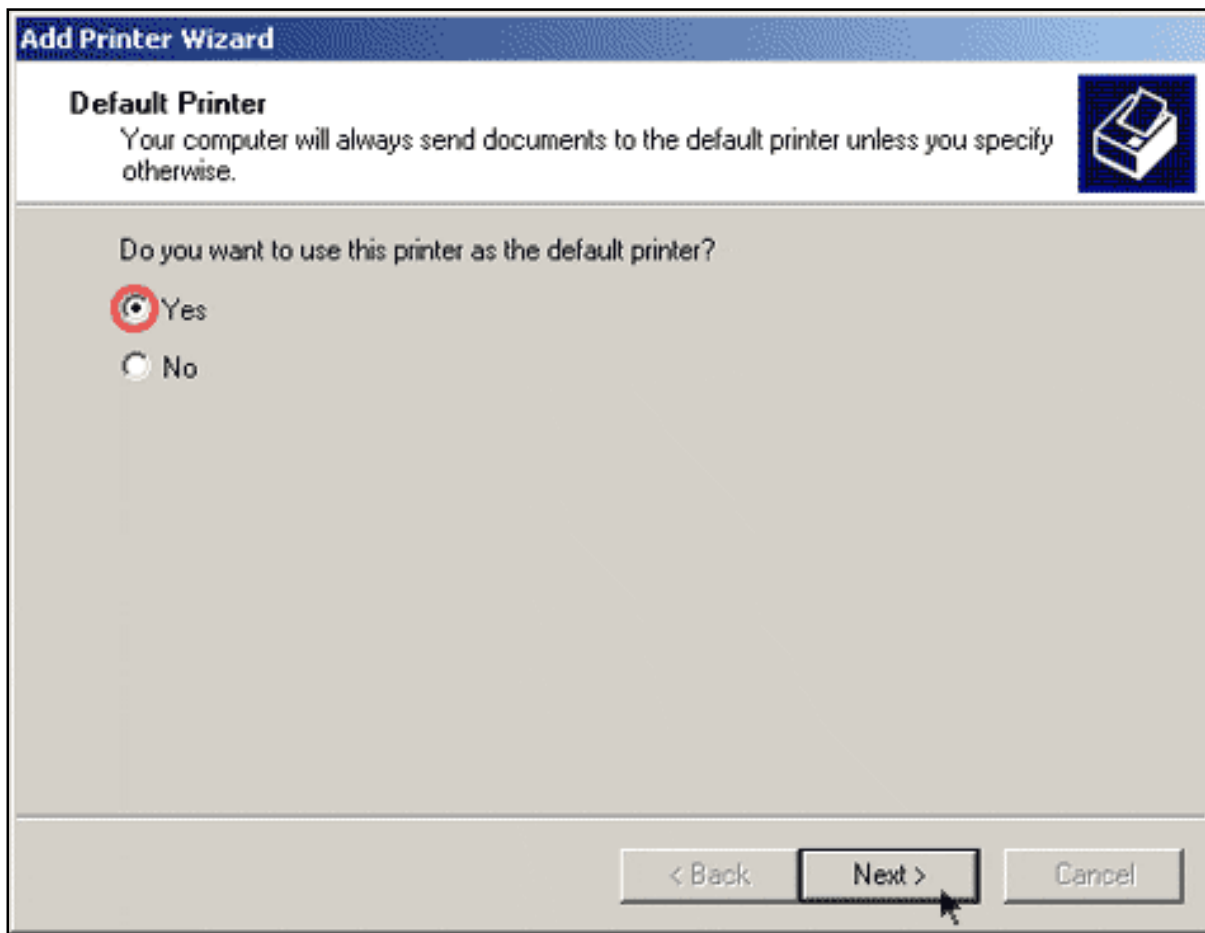
Note: The URL information is case-sensitive and must be entered exactly as it is listed on the **Printer Location** section on the router's **Status** page. If you have modified the IP address of your router, then use your router's IP address in place of 192.168.2.1.

6. Select the manufacturer and model of your printer. Click **OK**.

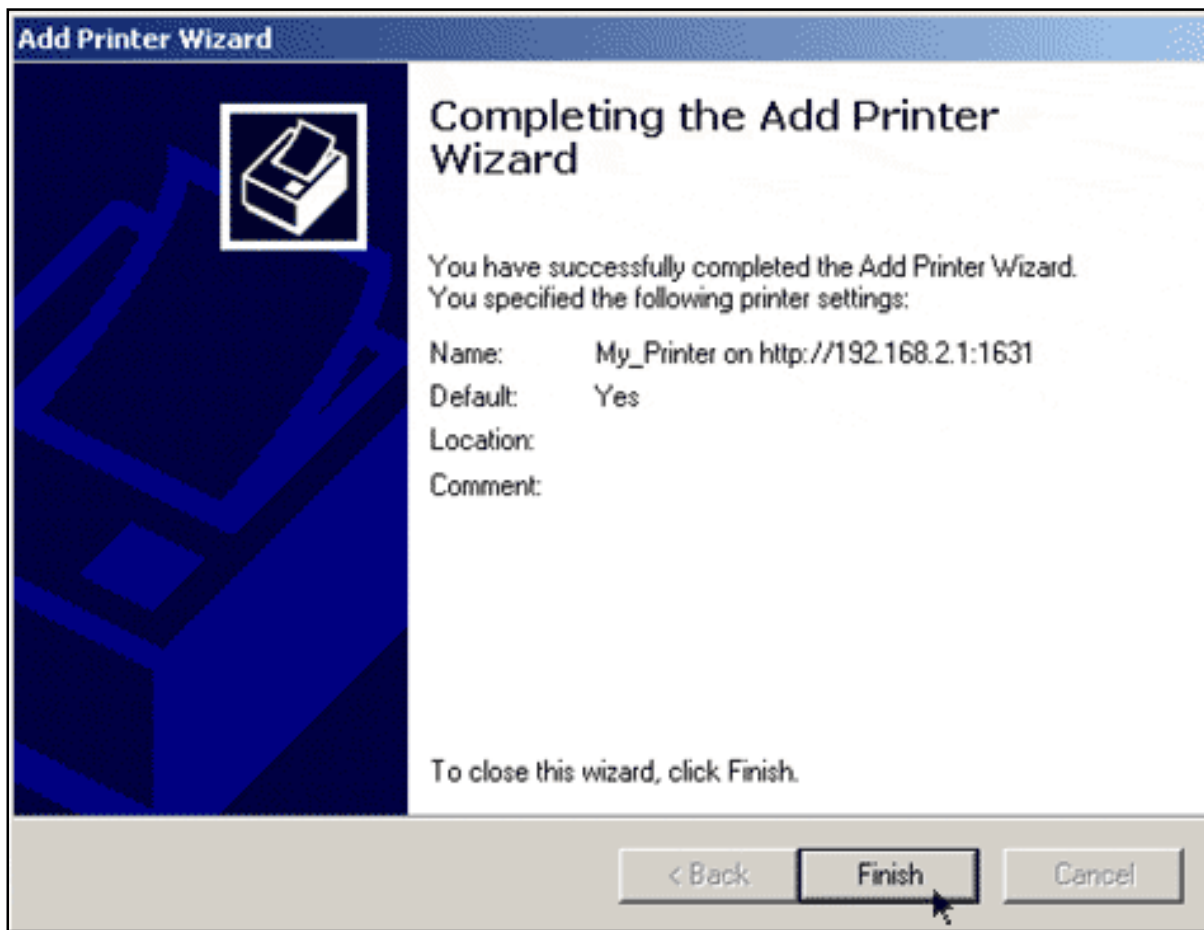
Note: If your printer does not appear in the list, please repeat **Step One: Local Printer Installation**.



- When prompted, select **Yes** to set this printer as your default printer. If prompted, you can choose to print a test page.

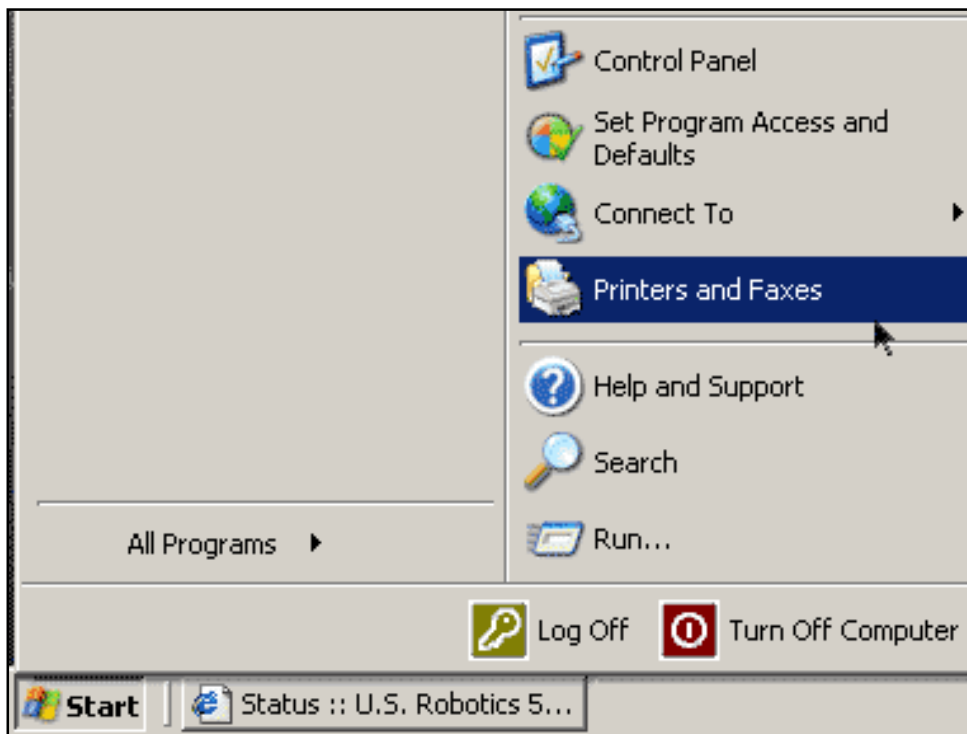


8. You will be shown the information regarding your printer. Click **Finish** to complete the setup process.

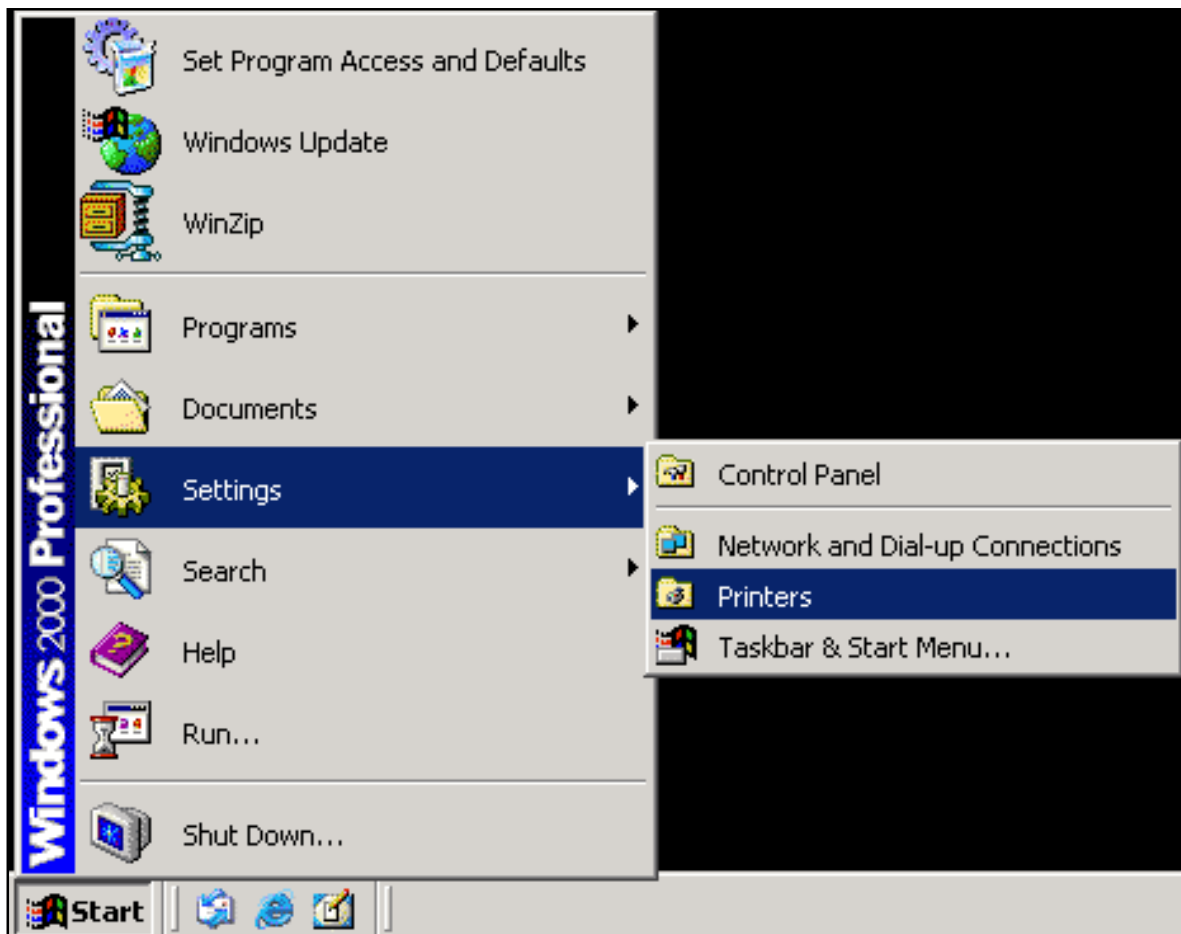


Step Three: Verify the printer's connectivity

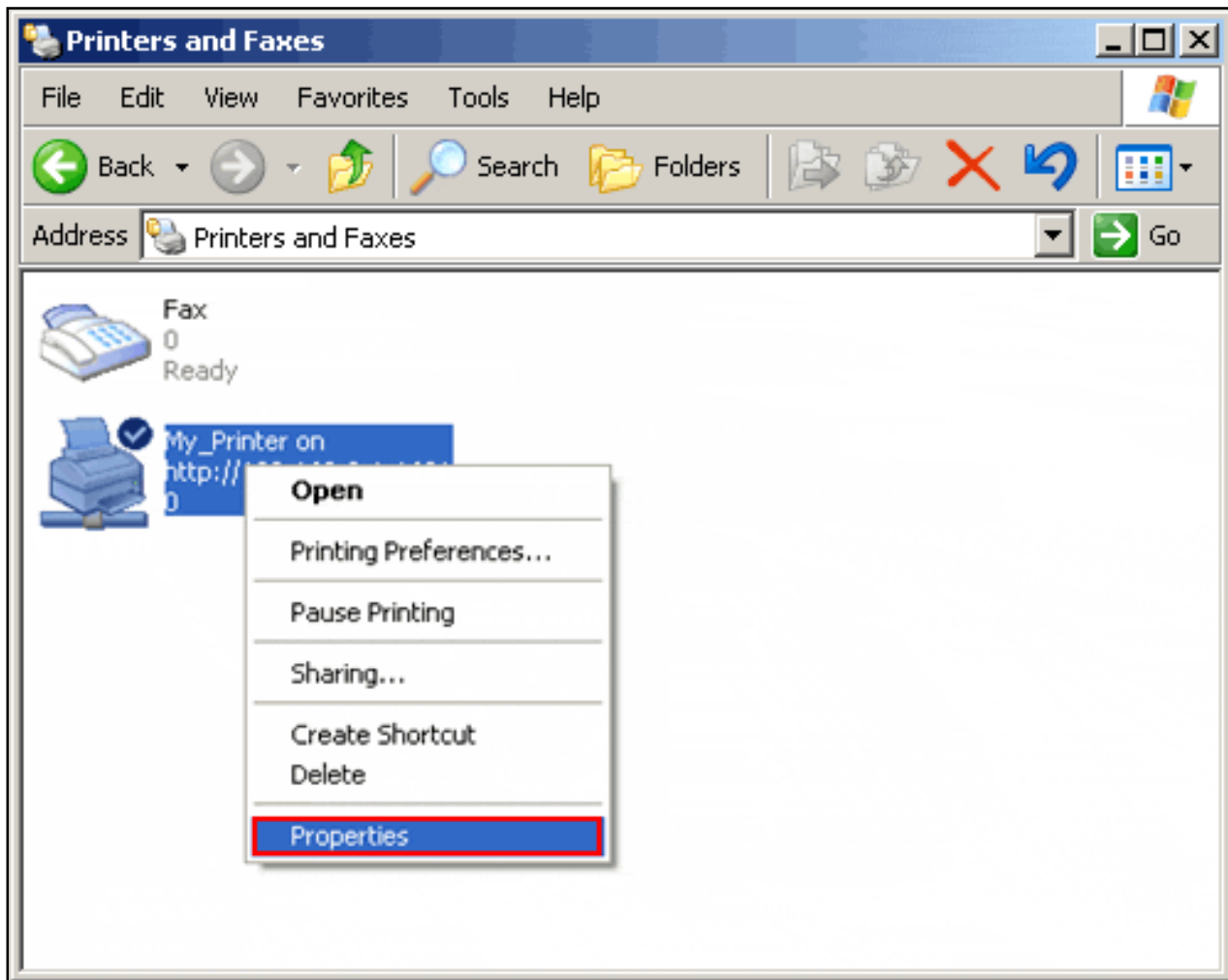
1. **Windows XP Users:** Click Windows **Start** > **Printers and Faxes**.



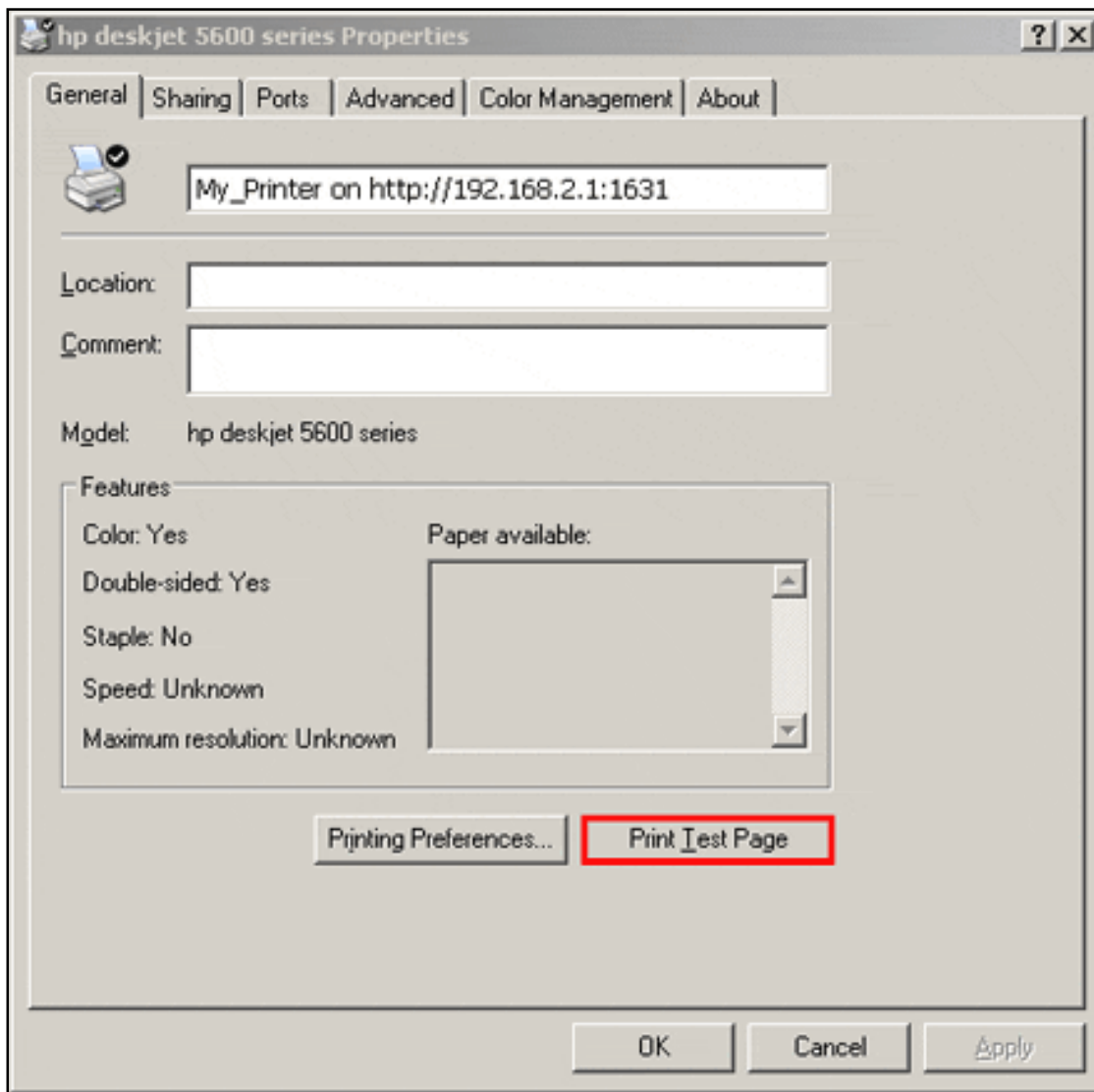
Windows 2000 Users: Click Windows **Start** > **Settings** > **Printers**.



2. Right-click on your printer and select **Properties**.



3. Click **Print Test Page**.



Note: If the test page fails to print, refer to [I cannot print to a network printer attached to my router in Windows XP or 2000](#) in the [Troubleshooting](#) section of this guide for additional information.





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Installing a USB Printer in a Windows Me or 98SE Environment

A USB printer can be connected to the router and used as a network printer if you are using an operating system that supports printing to an Internet Printing Protocol (IPP)-based printer. Windows Me and Windows 98SE operating systems require that Internet Printing Services be installed in order to use the print server function of the router.

Step One: Local Printer Installation

Note: If the printer has already been installed on every computer that will use it once it is on the network, skip to skip to [Step Three: Get Your Print Server Information](#).

Before connecting your printer to the print server, it is important to install the drivers provided by the printer manufacturer on each computer that will use the printer.

1. Plug your USB printer into one of the USB ports on your computer.
2. Install the printer by following the installation instructions included with your printer.
3. Print a test page to ensure that the printer is working properly.

4. Power off your printer.

Step Two: Internet Print Services Installation

Windows Me Users:

1. Install the Internet Print Services from the Add-on folder located on the Windows Millennium Edition CD-ROM.
2. Follow the instructions provided by Microsoft.
3. When the installation is complete, restart your computer.

Windows 98SE Users:

1. Download and install the Internet Print Services from Microsoft's Web site. <http://www.microsoft.com/windows98/downloads/contents/WUPreviews/IPP/Default.asp>
2. Follow the instructions provided by Microsoft.
3. When the installation is complete, restart your computer.

Step Three: Get Your Print Server Information

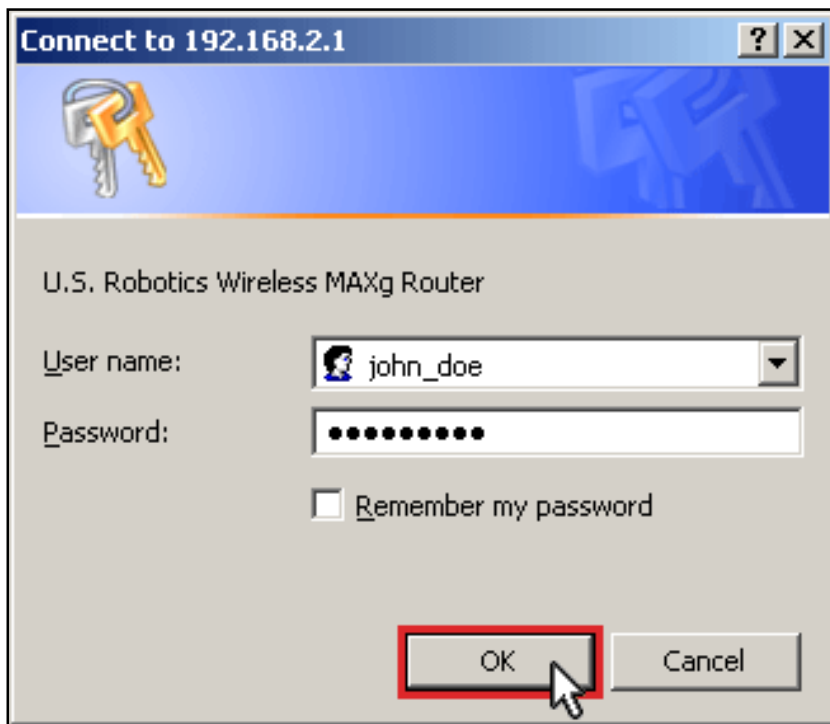
1. Disconnect the printer from your computer and Plug the thin rectangular end of the USB cable into the **USB** port on the router.



2. Connect the power supply to your printer and turn your printer on.
3. Start a Web browser. In the location or address line type 192.168.2.1 and press ENTER.

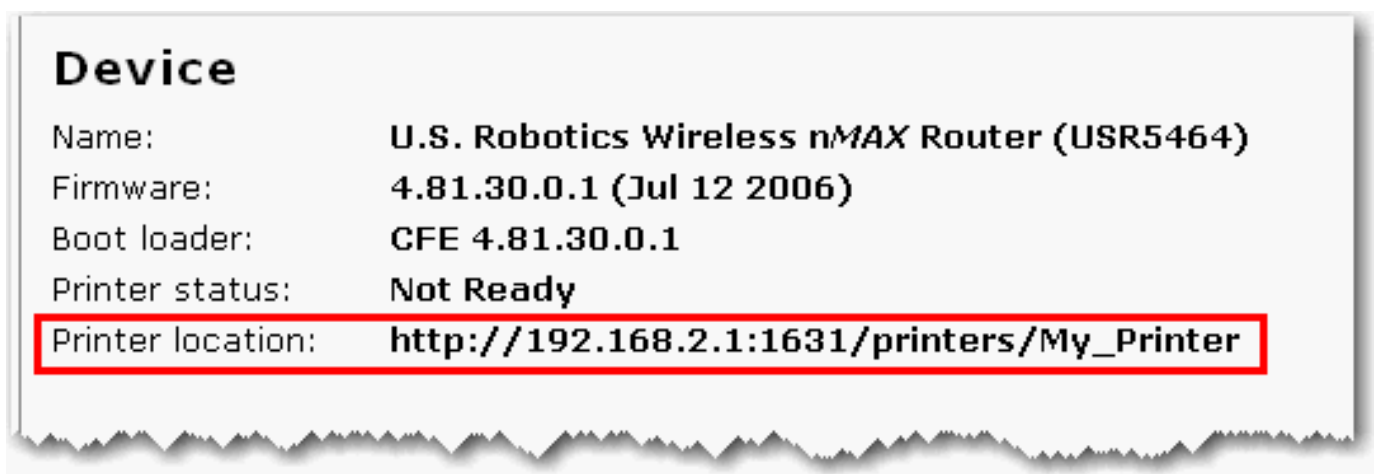
Note: If you have modified your router's IP address, enter the new IP address instead of 192.168.2.1.

4. When the user name and password window appears, type in the user name and the password you created. Click **OK** to load the router's setup page.



Note: You are not prompted to log in the first time you connect to the router configuration pages. During the Setup Wizard procedure, you created a user name and password to log on to the router. You will need to use these whenever you log on to the router. The user name and password are case-sensitive.

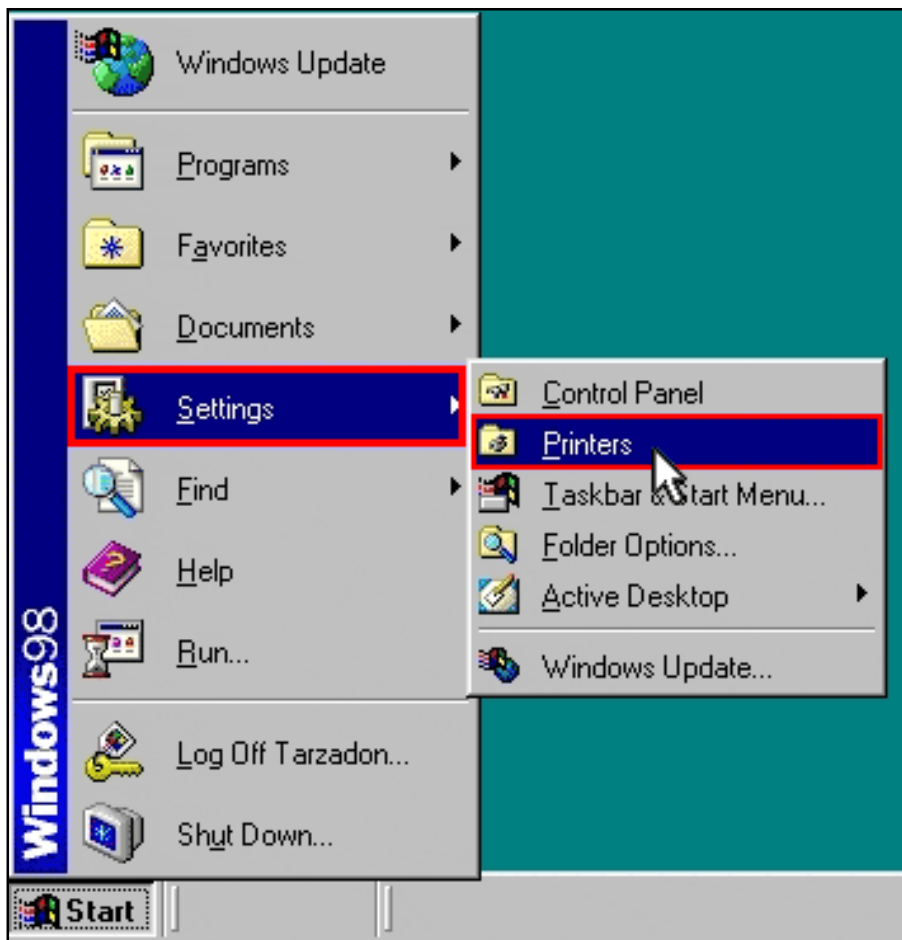
5. In the **Device** section of the **Status** page, look for the **Printer status** and **Printer location** information. Write down the **Printer location** address. You need the address to set up the printer on computers that are connected to your network that you want to have access to the printer.



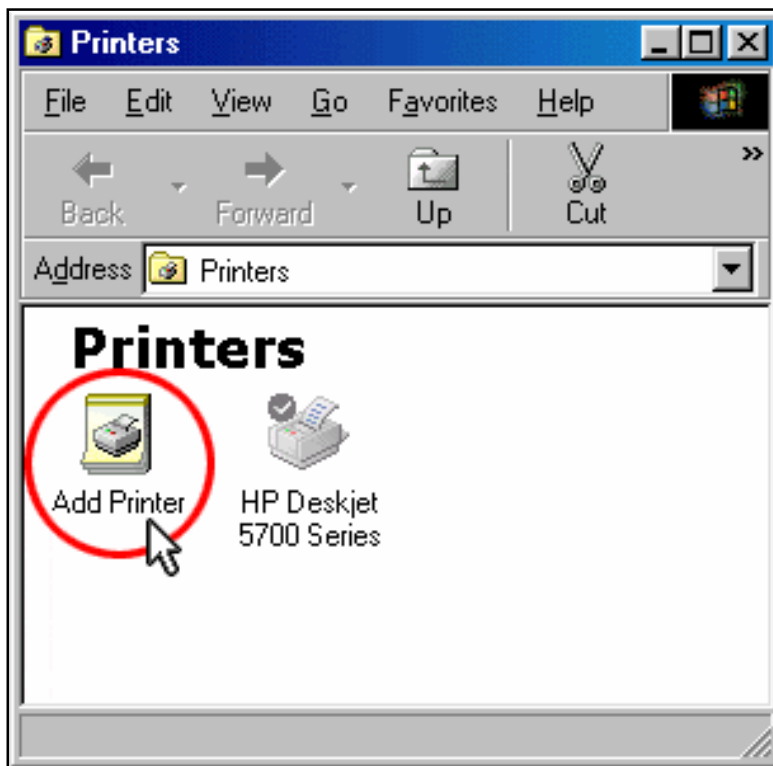
Step Three: Connect Clients to the Wireless USB Print Server

Note: You must perform this procedure on each computer on your network to allow printing using the print server on the router.

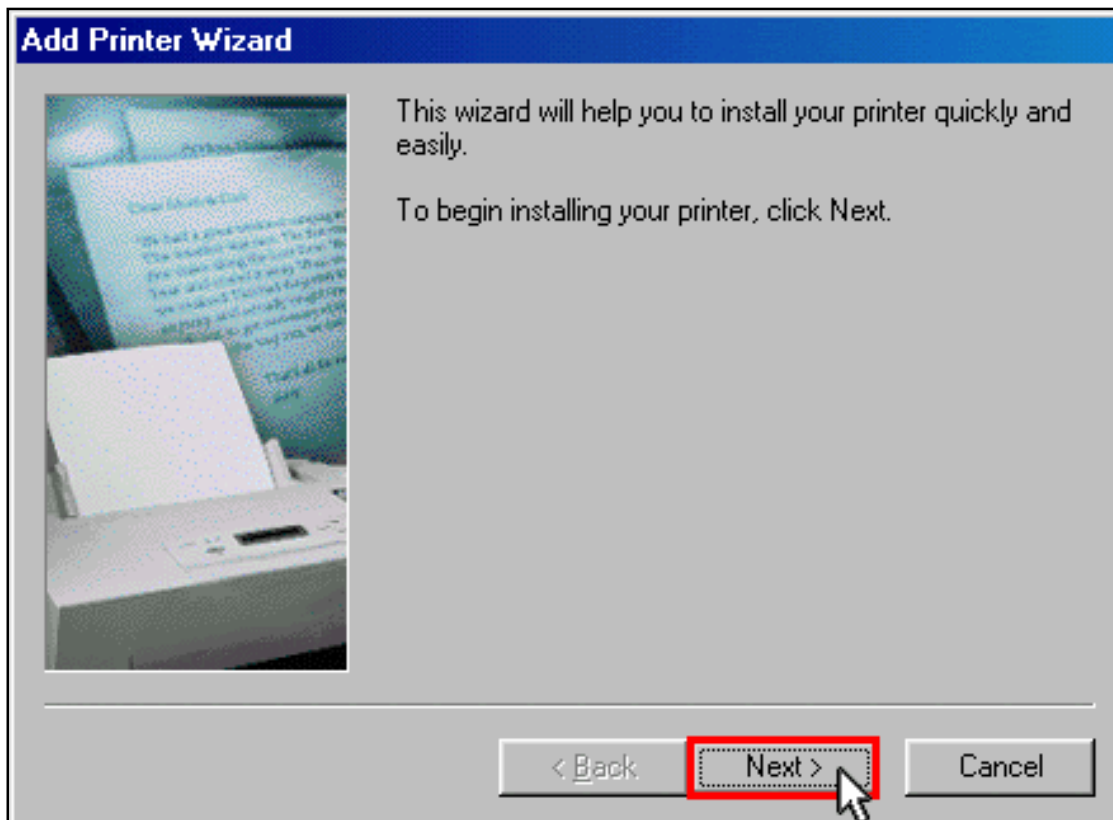
1. Click Windows **Start** > **Settings** > **Printers**.



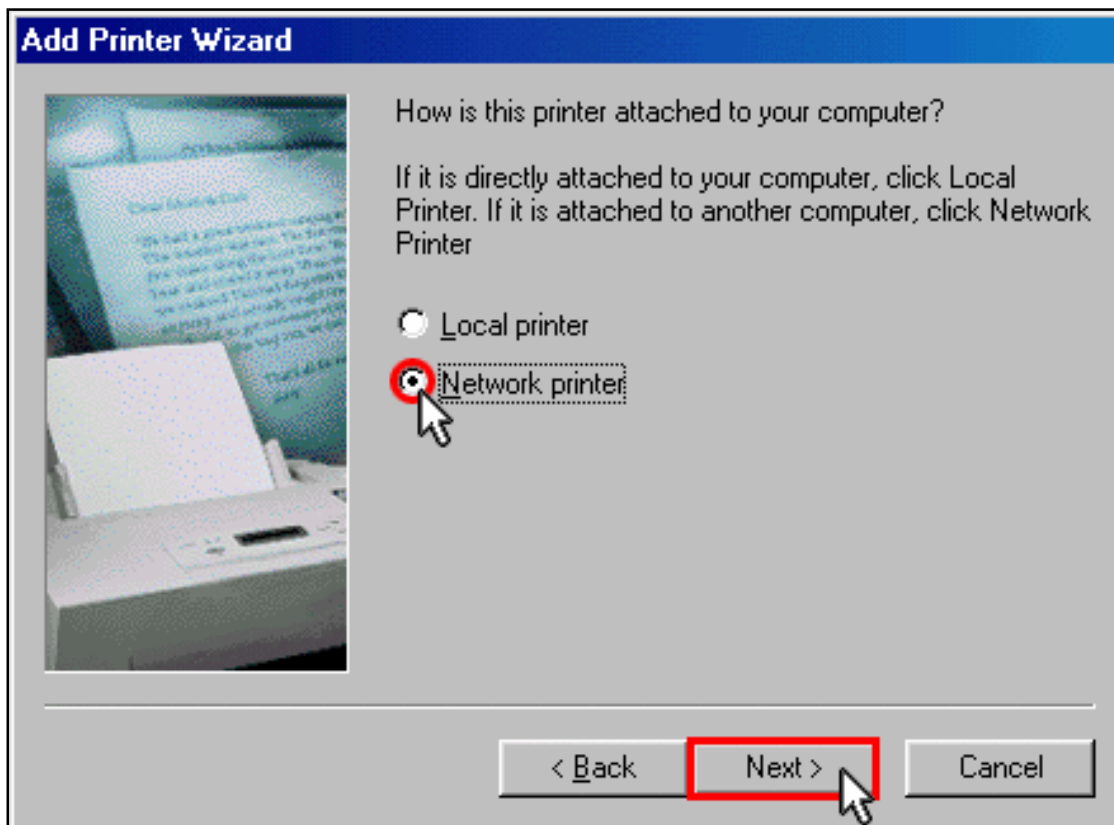
6. Click **Add Printer**.



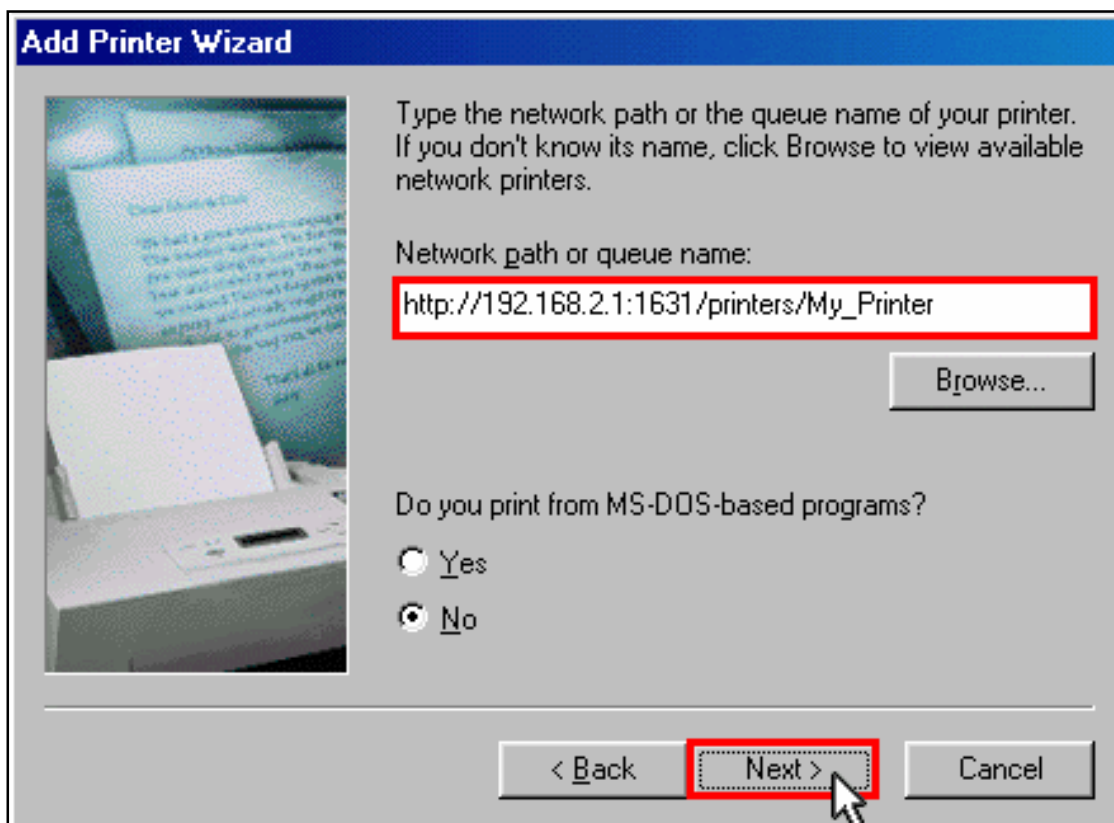
7. The Add Printer Wizard will start. Click **Next**.



8. Choose the radio button labeled **Network printer**. Click **Next**.



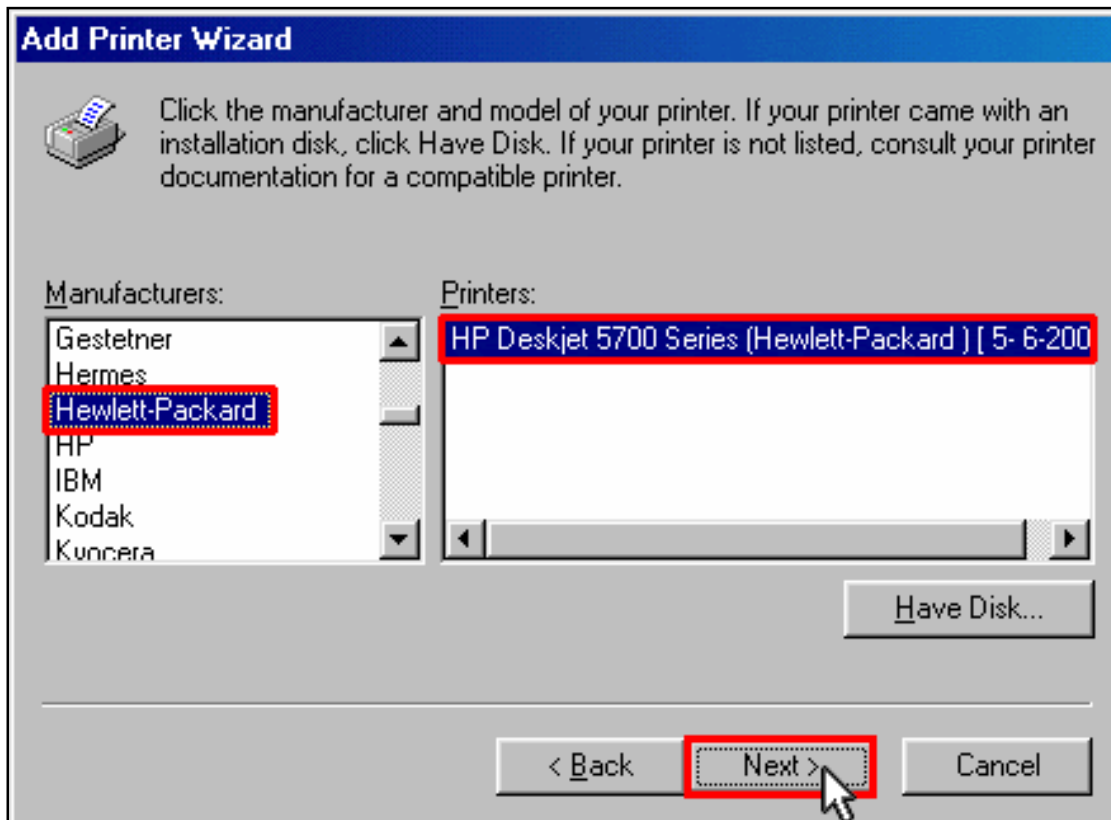
9. In the **Network path or queue name** field, enter the **Printer location** address. Click **Next**.



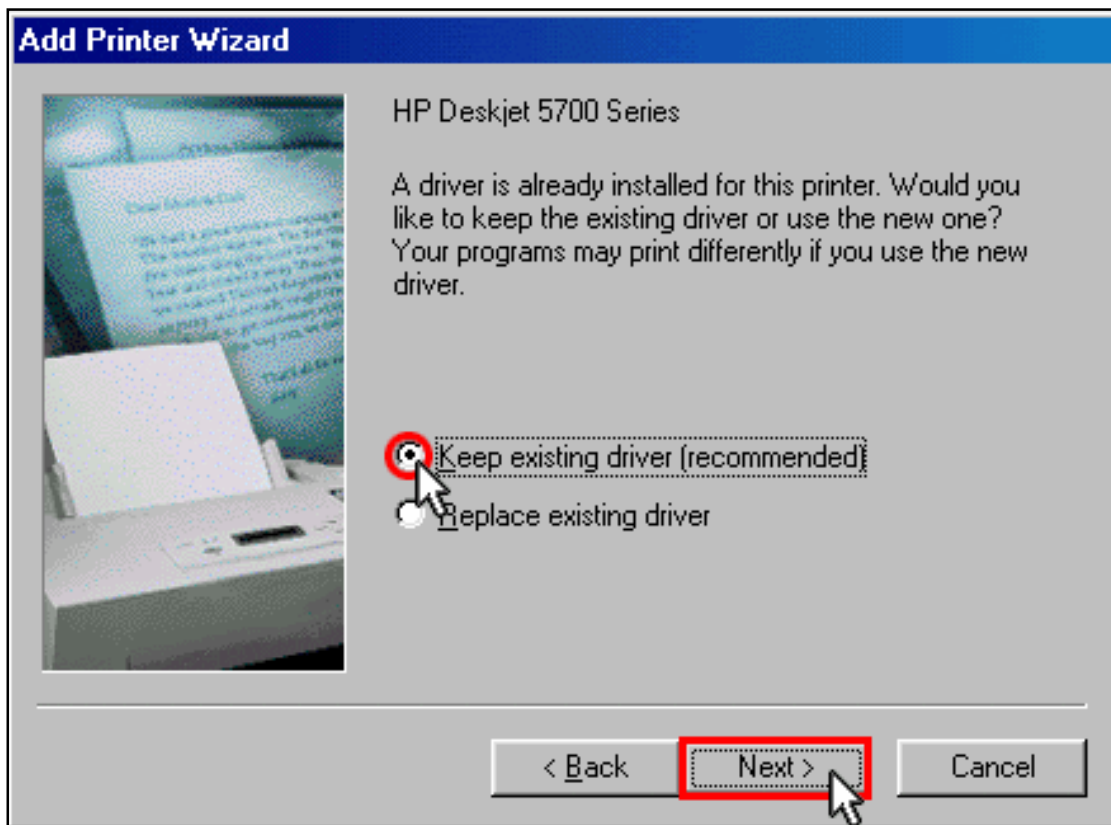
Note: The URL information is case-sensitive and must be entered exactly as it is listed on the **Printer location** section on the router's **Status** page.

10. Select the manufacturer and model of your printer. Click **Next**.

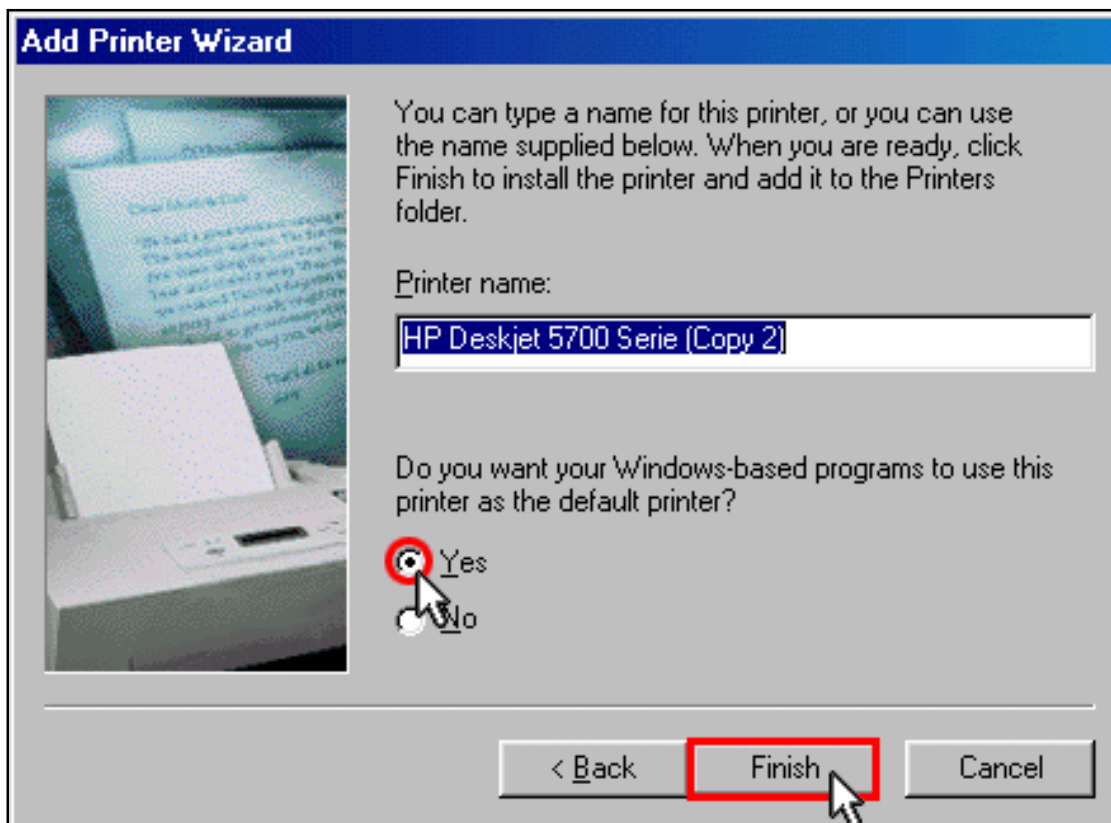
Note: If your printer does not appear in the list, please repeat [Step One: Local Printer Installation](#).



6. Select **Keep existing driver (recommended)**. Click **Next**.

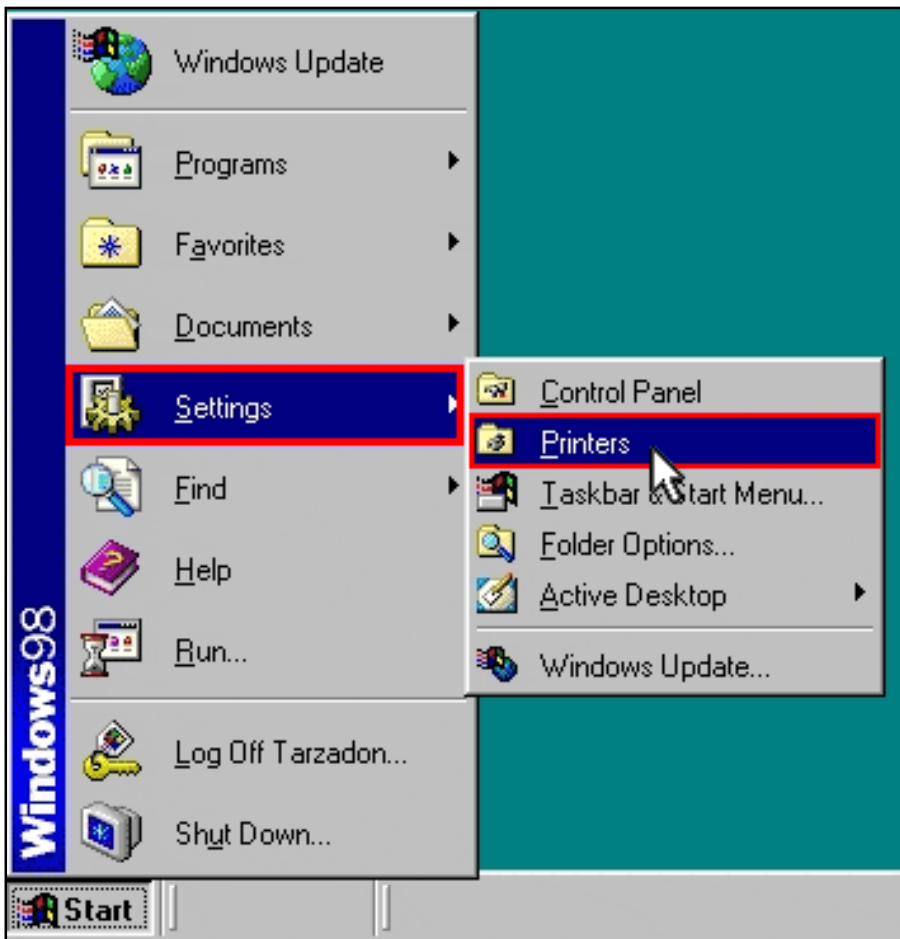


7. When prompted, select **Yes** to set this printer as your default printer. Click **Finish**.

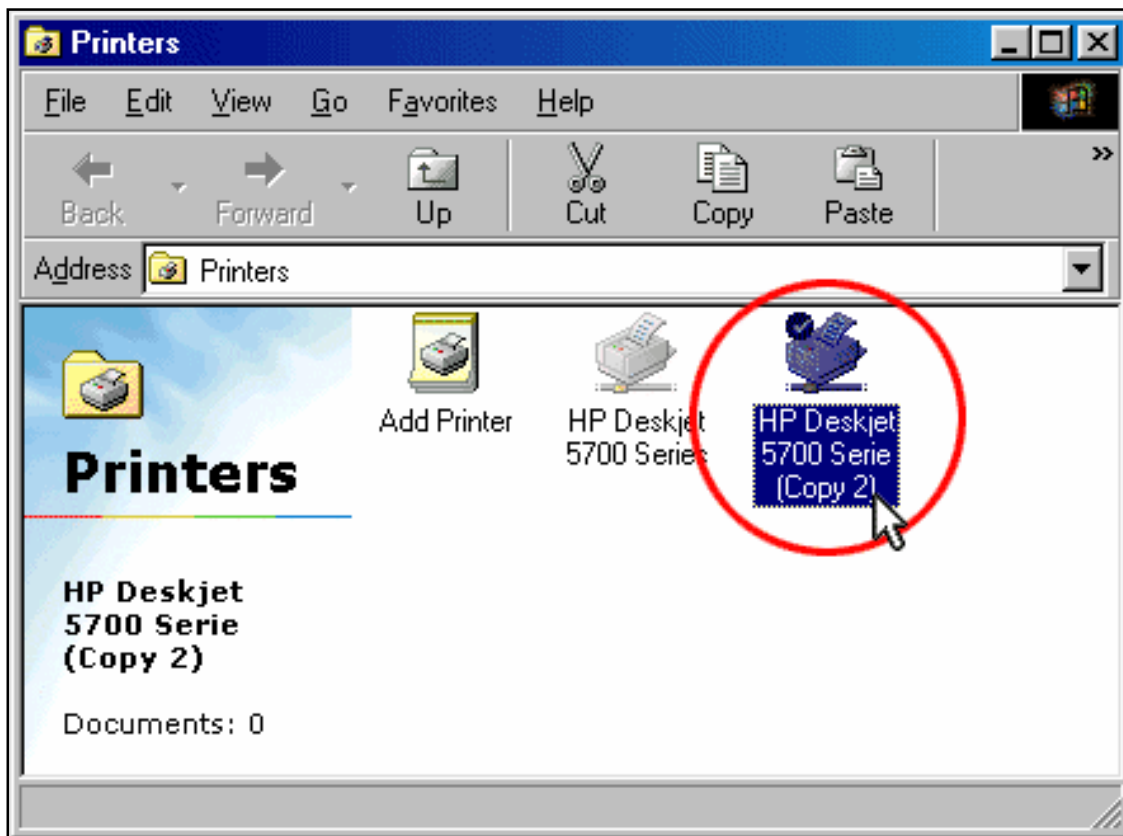


Step Four: Verify the printer's connectivity

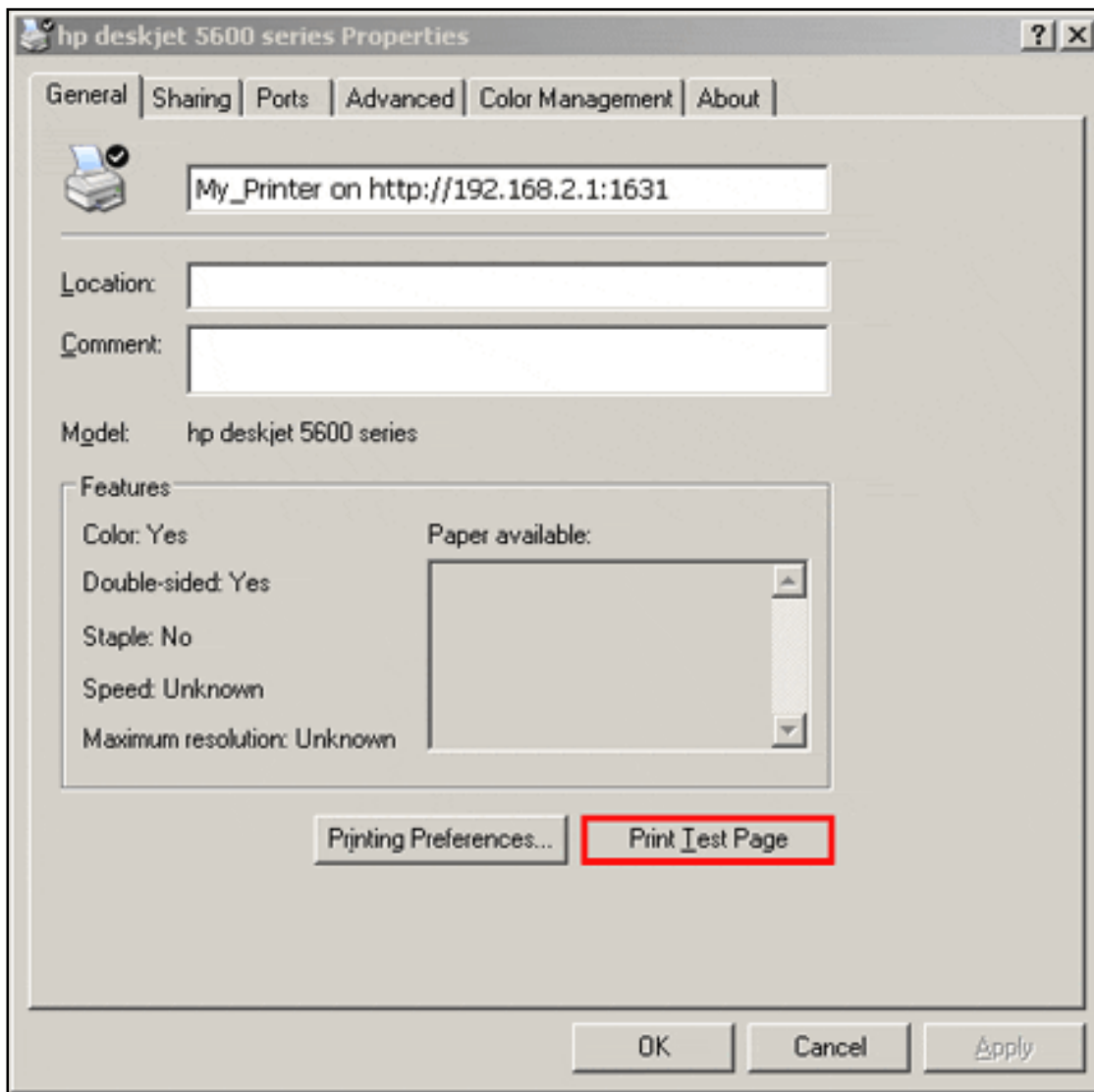
1. Click Windows **Start** > **Settings** > **Printers**.



2. Verify that your printer is listed. Right-click on your printer and select **Properties**.



3. Click **Print Test Page**.



Note: If the test page fails to print, refer to [I cannot print to a network printer attached to my router in Windows Me or 98SE](#) in the [Troubleshooting](#) section of this guide for additional information.





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Installing a USB Printer in a Macintosh OS X Environment

A USB printer can be connected to the router and used as a network printer if you are using an operating system that supports printing to an Internet Printing Protocol (IPP)-based printer. Macintosh OS X 10.3 and later has built-in support for this function.

Step One: Local Printer Installation

Note: If the printer has already been installed on every computer that will use it once it is on the network, skip to [Step Two: Get Your Print Server Information](#).

Before connecting your printer to the print server, it is important to install the drivers provided by the printer manufacturer on each computer that will use the printer.

1. Plug your USB printer into one of the USB ports on your computer.
2. Install the printer by following the installation instructions included with your printer.
3. Print a test page to ensure that the printer is working properly.
4. Power off your printer.

Step Two: Get Your Print Server Information

1. Disconnect the printer from your computer and Plug the thin rectangular end of the USB cable into the **USB** port on the router.



2. Connect the power supply to your printer and turn your printer on.
3. Start a Web browser. In the location or address line type **192.168.2.1** and press ENTER.

Note: If you have modified your router's IP address, enter the new IP address instead of 192.168.2.1.

4. When the user name and password window appears, type in the user name and the password you created. Click **OK** to load the router's setup page.

Note: You are not prompted to log in the first time you connect to the router configuration pages. During the Setup Wizard procedure, you created a user name and password to log on to the router. You will need to use these whenever you log on to the router. The user name and password are case-sensitive.

5. In the **Device** section of the **Status** page, look for the **Printer status** and **Printer location** information. Write down the **Printer location** address. You need the address to set up the printer on computers that are connected to your network that you want to have access to the printer.

Device

Name: **U.S. Robotics Wireless nMAX Router (USR5464)**
Firmware: **4.81.30.0.1 (Jul 12 2006)**
Boot loader: **CFE 4.81.30.0.1**
Printer status: **Not Ready**
Printer location: **http://192.168.2.1:1631/printers/My_Printer**

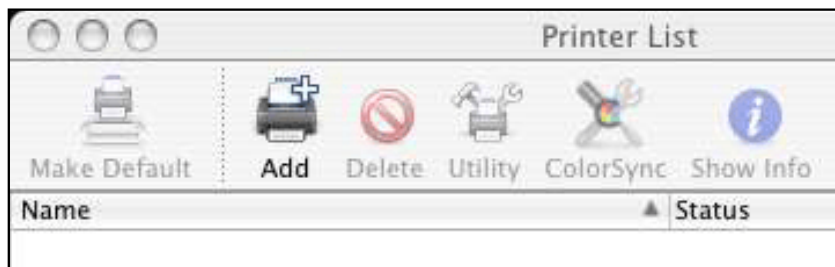
Step Three: Connect Clients to the Wireless USB Print Server

Note: You must perform this procedure on each computer on your network to allow printing using the print server on the router.

1. Open **Utilities** and double click **Print Center**.



2. Hold down the **Alt/Option** key and click **Add**.



3. Select **Advanced** and select or enter the values shown below:
 Device: **Internet Printing Protocol using HTTP**
 Device Name: **HP Deskjet 990c** (example only, select your printer)
 Device URI: **http://192.168.2.1:1631/printers/My_Printer**

Note: The Device URI information is case-sensitive and must be entered exactly as it is listed on the Printer location section on the router's **Status** page. If you have modified the IP address of your router, then use your router's IP address in place of 192.168.2.1.

The 'Advanced' configuration window includes the following fields and options:

- Device:** Internet Printing Protocol using HTTP
- Device Name:** HP Deskjet 990c
- Device URI:** http://192.168.2.1:1631/printers/My_Printer
- Printer Model:** HP
- Printer Model List:**
 - HP DeskJet 895C - Gimp-Print v5.0.0-beta2
 - HP DeskJet 900 series - Gimp-Print v5.0.0-beta2** (selected)
 - HP DeskJet 995C - Gimp-Print v5.0.0-beta2
 - HP DeskJet 1100C - Gimp-Print v5.0.0-beta2
- Buttons:** Cancel, Add

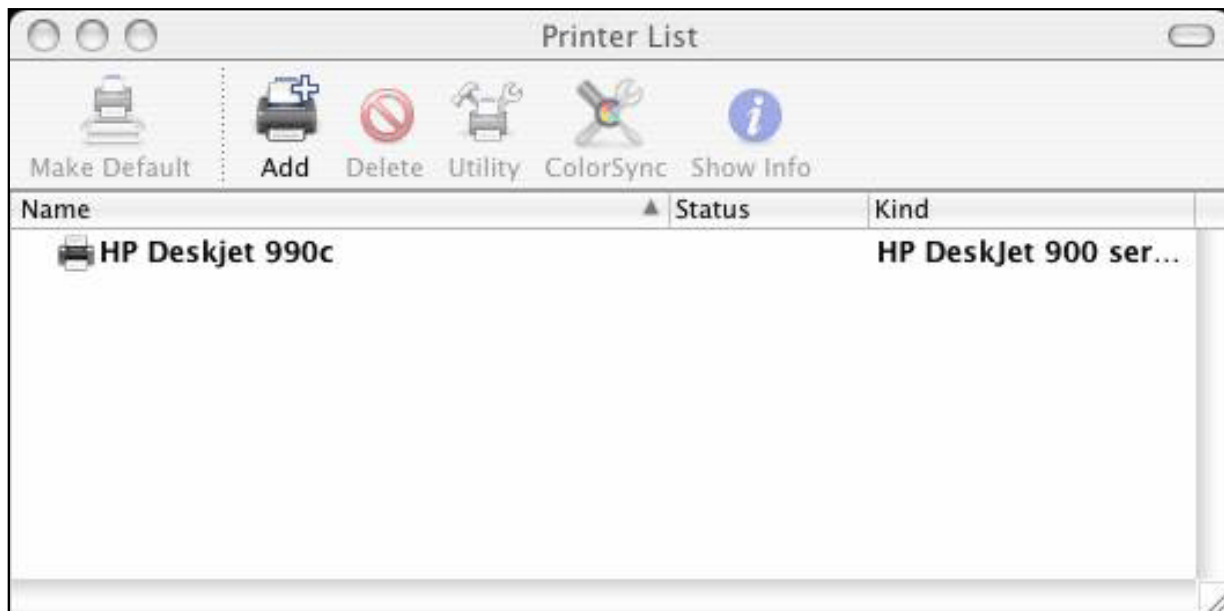
9. Select the make and model of your printer in the **Printer Model** field. Click **Add**.

Note: If you do not see your printer manufacturer or model listed contact the manufacturer to obtain an IPP compatible PostScript Printer Description (PPD) file for the Macintosh.

Note: If you do not see the screen shown above hold down the **Alt / Option** key and click **More Printers...**

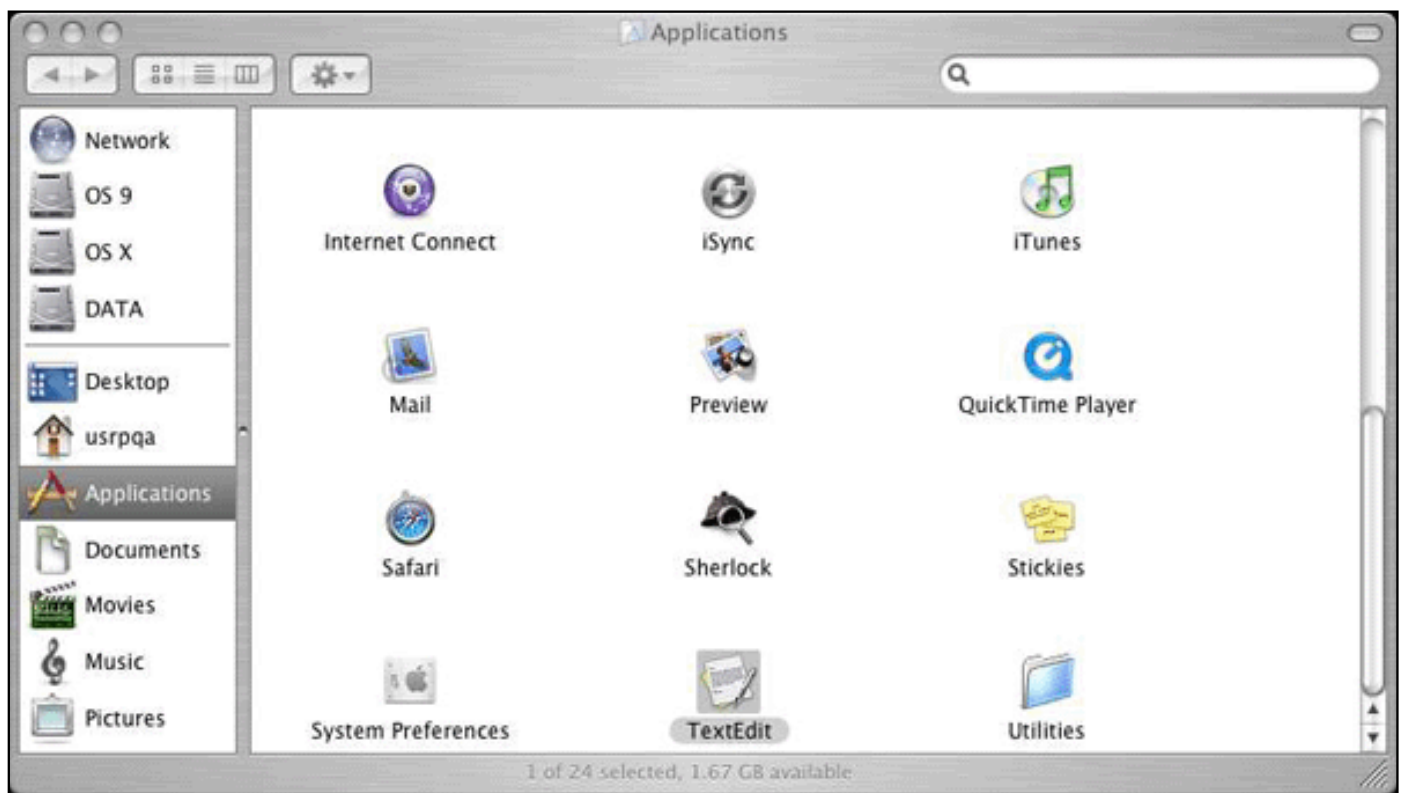


10. With the printer selected, click **Make Default**.

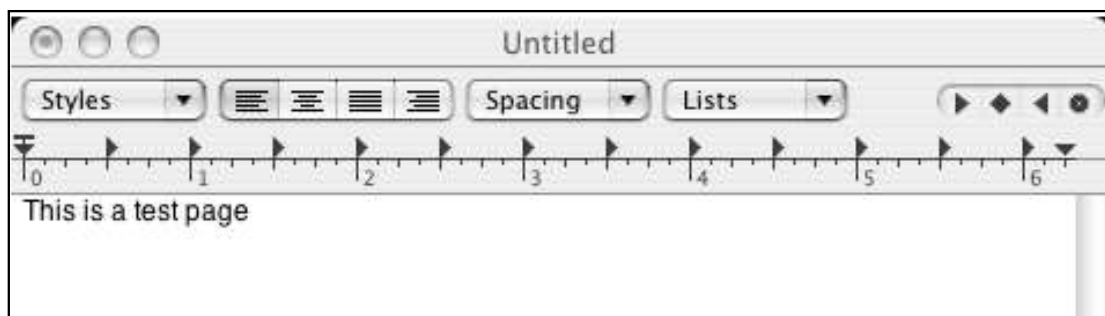


Step Two: Verify the printer's connectivity

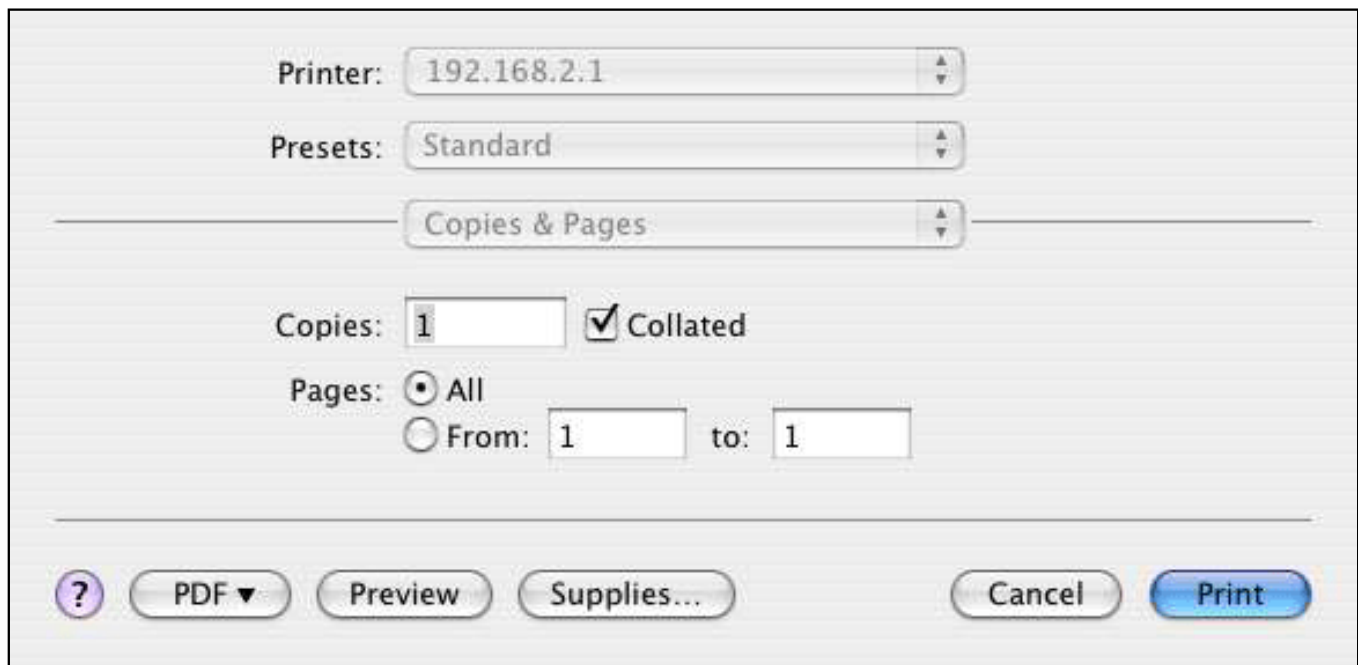
1. Open **Applications** and double click **TextEdit** to create a printer test page.



1. Enter some text.



2. Print the page to confirm that the printer works.



A screenshot of a Mac OS print dialog box. The window has a light gray background and a thin black border. At the top, there are two dropdown menus: 'Printer:' with the value '192.168.2.1' and 'Presets:' with the value 'Standard'. Below these is a horizontal line, followed by a 'Copies & Pages' dropdown menu. Under this menu, the 'Copies:' section shows a text field with '1' and a checked 'Collated' checkbox. The 'Pages:' section has two radio buttons: 'All' (selected) and 'From: 1 to: 1'. At the bottom, there is another horizontal line, followed by a row of buttons: a help button (question mark in a circle), a 'PDF' button with a dropdown arrow, 'Preview', 'Supplies...', 'Cancel', and a blue 'Print' button.

Printer: 192.168.2.1

Presets: Standard

Copies & Pages

Copies: 1 ☒ Collated

Pages: ☒ All
☐ From: 1 to: 1

? PDF ▼ Preview Supplies... Cancel Print



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Installing a USB Printer in a Linux Environment

A USB printer can be connected to the router and used as a network printer if you are using an operating system that supports printing to an Internet Printing Protocol (IPP)-based printer. Linux provides support using the Common UNIX Printing System (CUPS).

Note: The router does not support the Line Printer Daemon/Line Printer Remote (LPD/LPR) protocol. IPP must be installed as part of your CUPS installation.

Step One: Local Printer Installation

Note: The CUPS daemon must be running before you perform these steps.

Note: If the printer has already been installed on every computer that will use it once it is on the network, skip to [Step Two: Get Your Print Server Information](#).

Before connecting your printer to the print server, it is important to install the drivers provided by the printer manufacturer on each computer that will use the printer.

1. Plug your USB printer into one of the USB ports on your computer.
2. Install the printer by following the installation instructions included with your printer.

3. Print a test page to ensure that the printer is working properly.
4. Power off your printer.

Step Two: Get Your Print Server Information

1. Disconnect the printer from your computer and Plug the thin rectangular end of the USB cable into the **USB** port on the router.



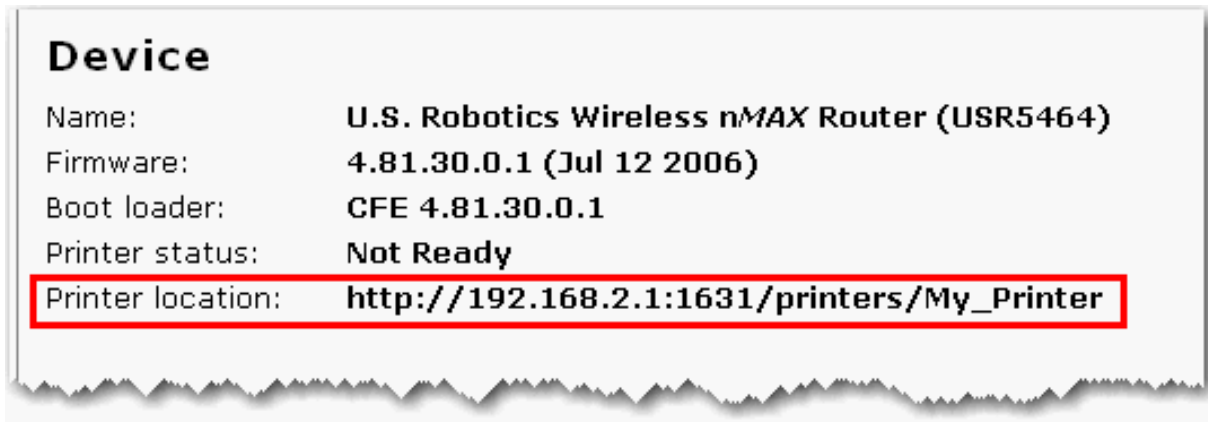
5. Connect the power supply to your printer and turn your printer on.
6. Start a Web browser. In the location or address line type **192.168.2.1** and press ENTER.

Note: If you have modified your router's IP address, enter the new IP address instead of 192.168.2.1.

4. When the user name and password window appears, type in the user name and the password you created. Click **OK** to load the router's **Status** page.

Note: You are not prompted to log in the first time you connect to the router configuration pages. During the Setup Wizard procedure, you created a user name and password to log on to the router. You will need to use these whenever you log on to the router. The user name and password are case-sensitive.

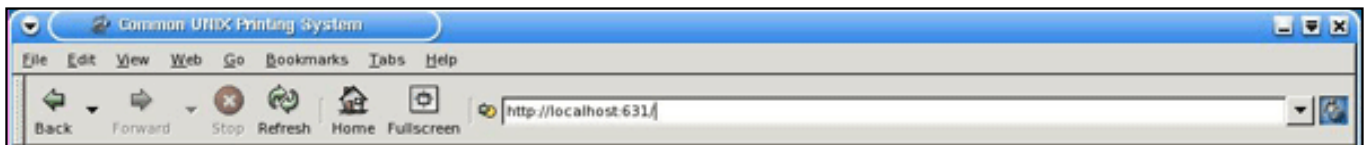
5. In the **Device** section of the **Status** page, look for the **Printer status** and **Printer location** information. Write down the **Printer location** address.



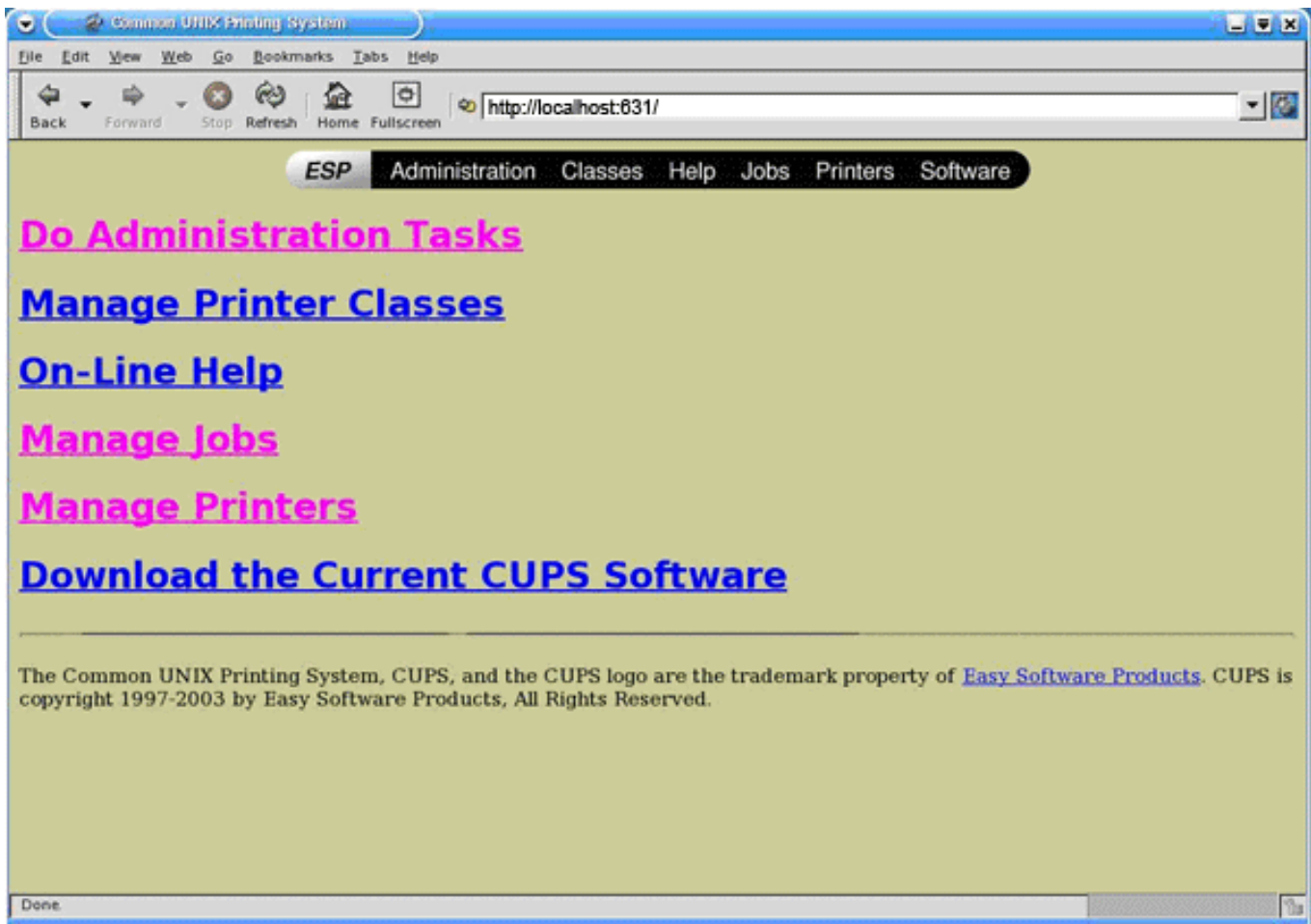
Step 2: CUPS Configuration

Note: You must perform this procedure on each computer on your network to allow printing using the print server on the router.

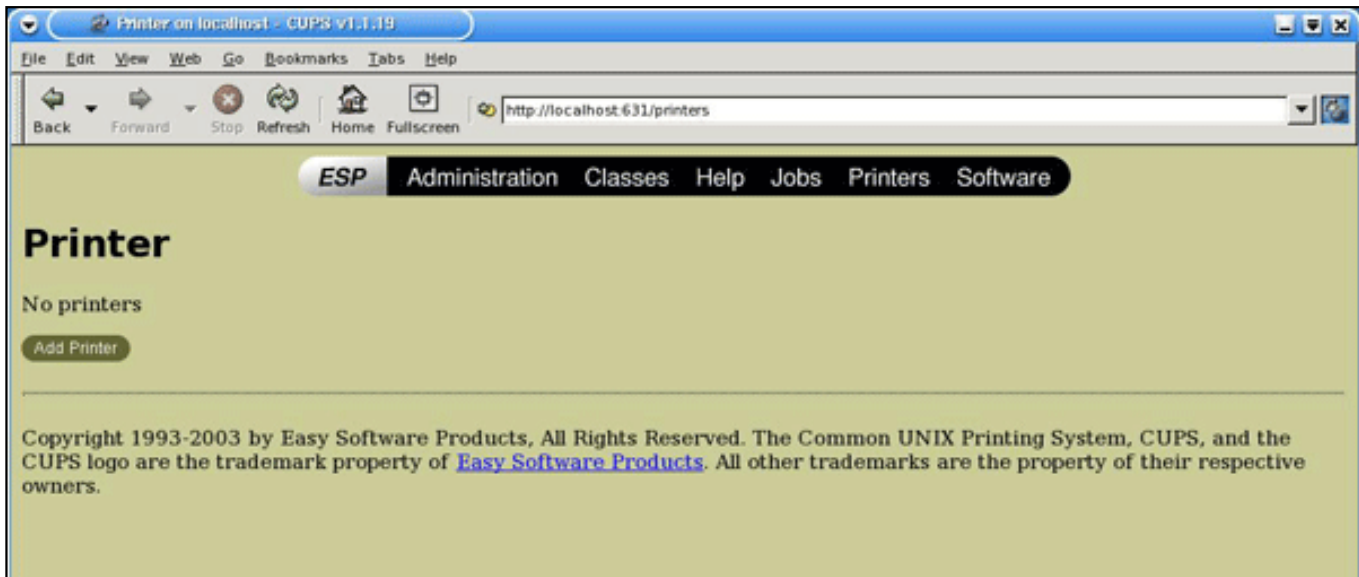
1. Start a Web browser. In the location or address line type **http://localhost:631** and press **ENTER**.



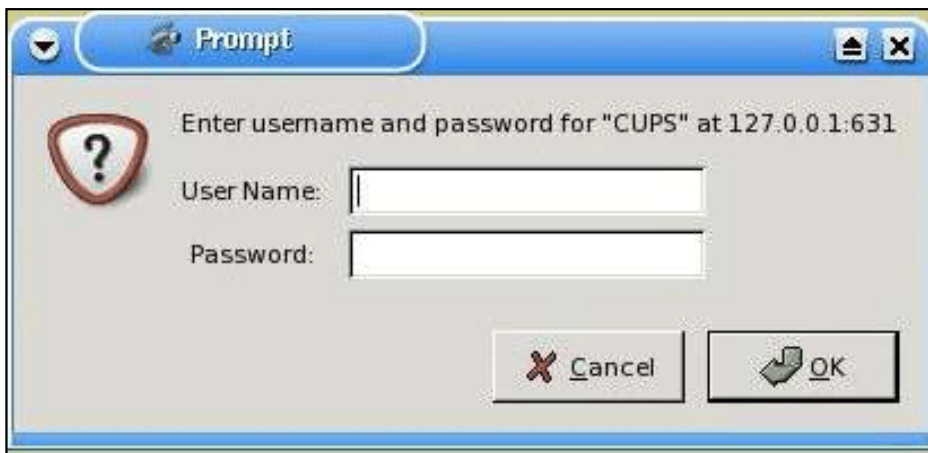
2. Click **Manage Printers**.



3. Click **Add Printer**.



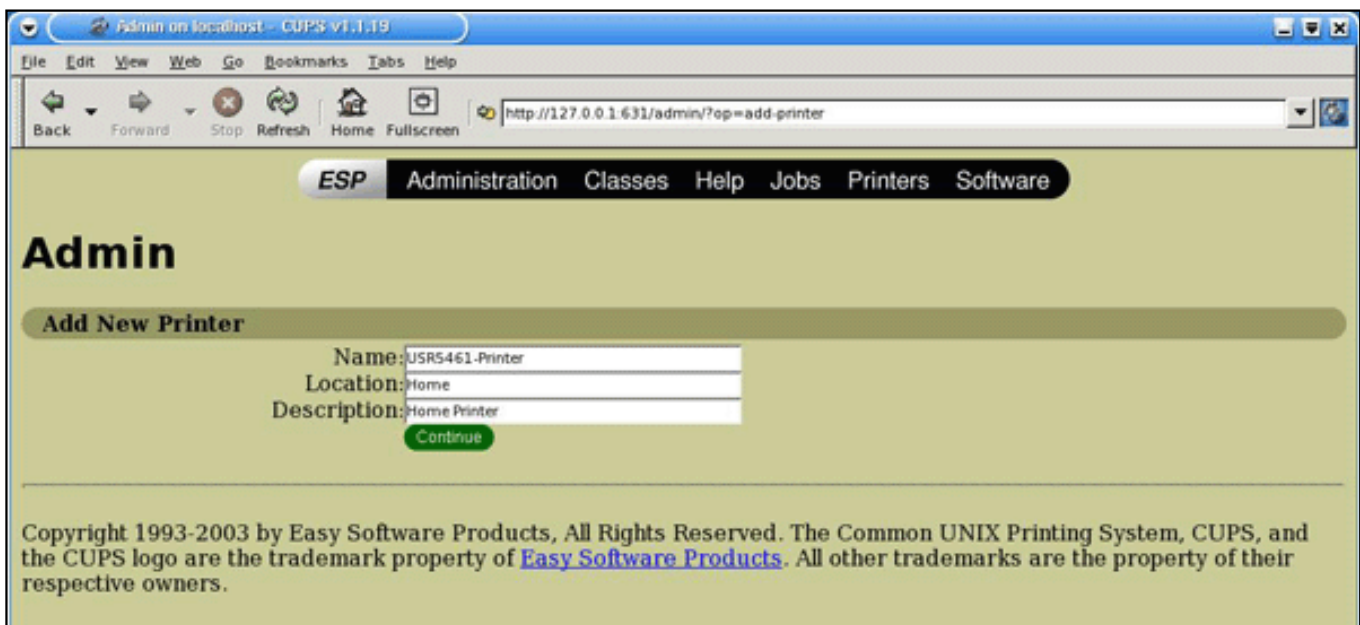
4. Enter the Super User (SU) account user information and click **OK**.



A Windows-style dialog box titled "Prompt" with a question mark icon. The text inside says "Enter username and password for 'CUPS' at 127.0.0.1:631". There are two input fields: "User Name:" and "Password:". At the bottom are "Cancel" and "OK" buttons.

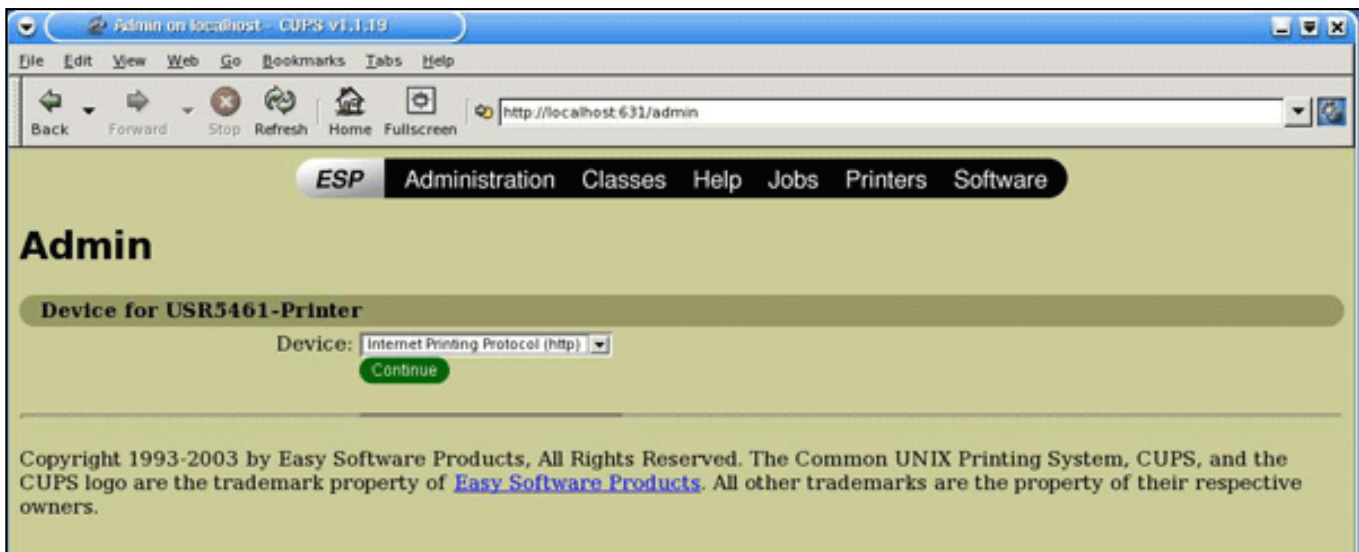
5. Enter the name, location, and description of the printer that you are installing and click **Continue**. The specific names are not dependent upon any information already entered.

Note: "Location" is not the same as the "Printer Location" that you recorded in the *Get Your Print Server Information* procedure. "Location" notes the physical location of the printer. For example, a printer located at home and in the basement could be assigned the location "Home-Basement." "Name" is the name that will be used to identify this printer in the command line.



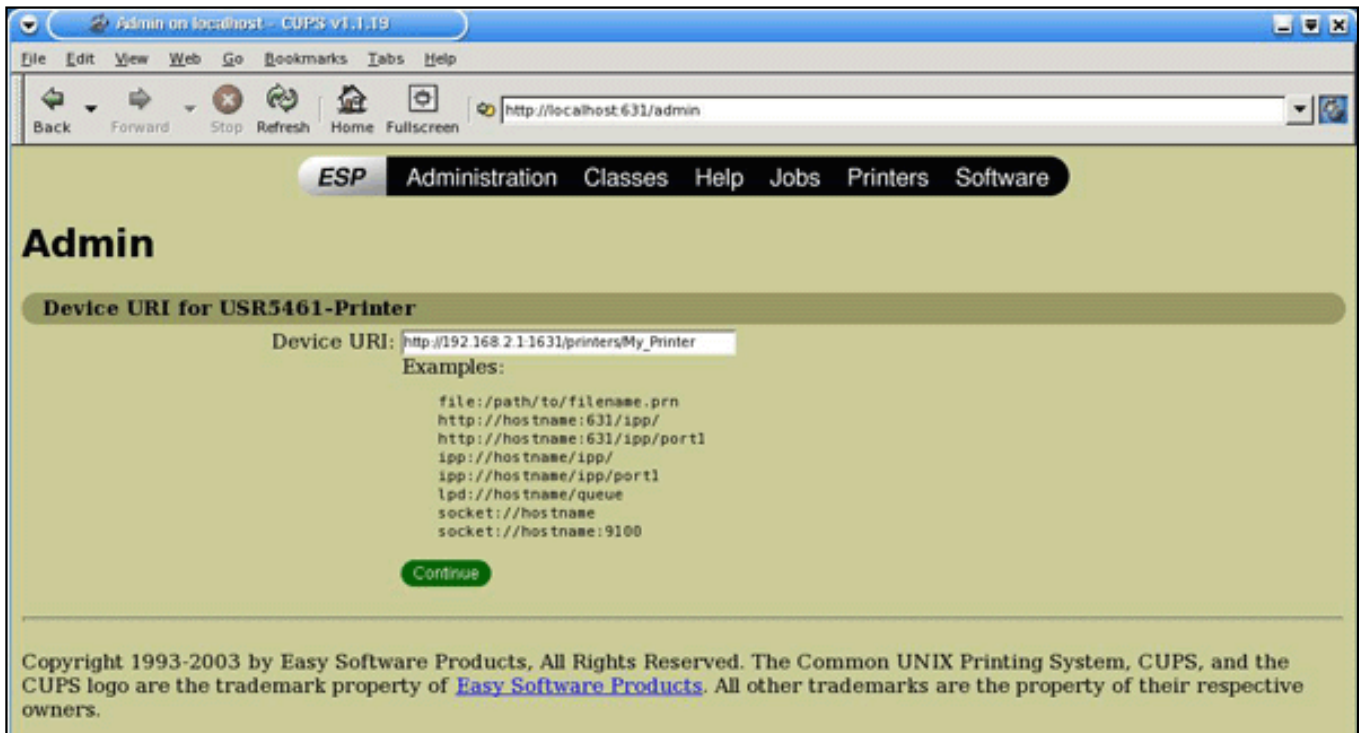
A screenshot of a web browser window showing the CUPS v1.1.19 Admin interface. The address bar shows "http://127.0.0.1:631/admin/?op=add-printer". The page has a navigation bar with "ESP", "Administration", "Classes", "Help", "Jobs", "Printers", and "Software". The main heading is "Admin". Below it is a section titled "Add New Printer" with three input fields: "Name:" (containing "USR5461-Printer"), "Location:" (containing "Home"), and "Description:" (containing "Home Printer"). A green "Continue" button is below the fields. At the bottom, there is a copyright notice: "Copyright 1993-2003 by Easy Software Products, All Rights Reserved. The Common UNIX Printing System, CUPS, and the CUPS logo are the trademark property of Easy Software Products. All other trademarks are the property of their respective owners."

6. Select **Internet Printing Protocol (http)** in the **Device** field and click **Continue**.



7. In the **Device URI** field, enter the "Printer Location", that you recorded in the *Get Your Print Server Information* procedure above and click **Continue**.

Note: The Device URI information is case-sensitive and must be entered exactly as it is shown in the **Printer location** section on the router's **Status** page. If you have modified the IP address of your router, use your router's IP address in place of 192.168.2.1.

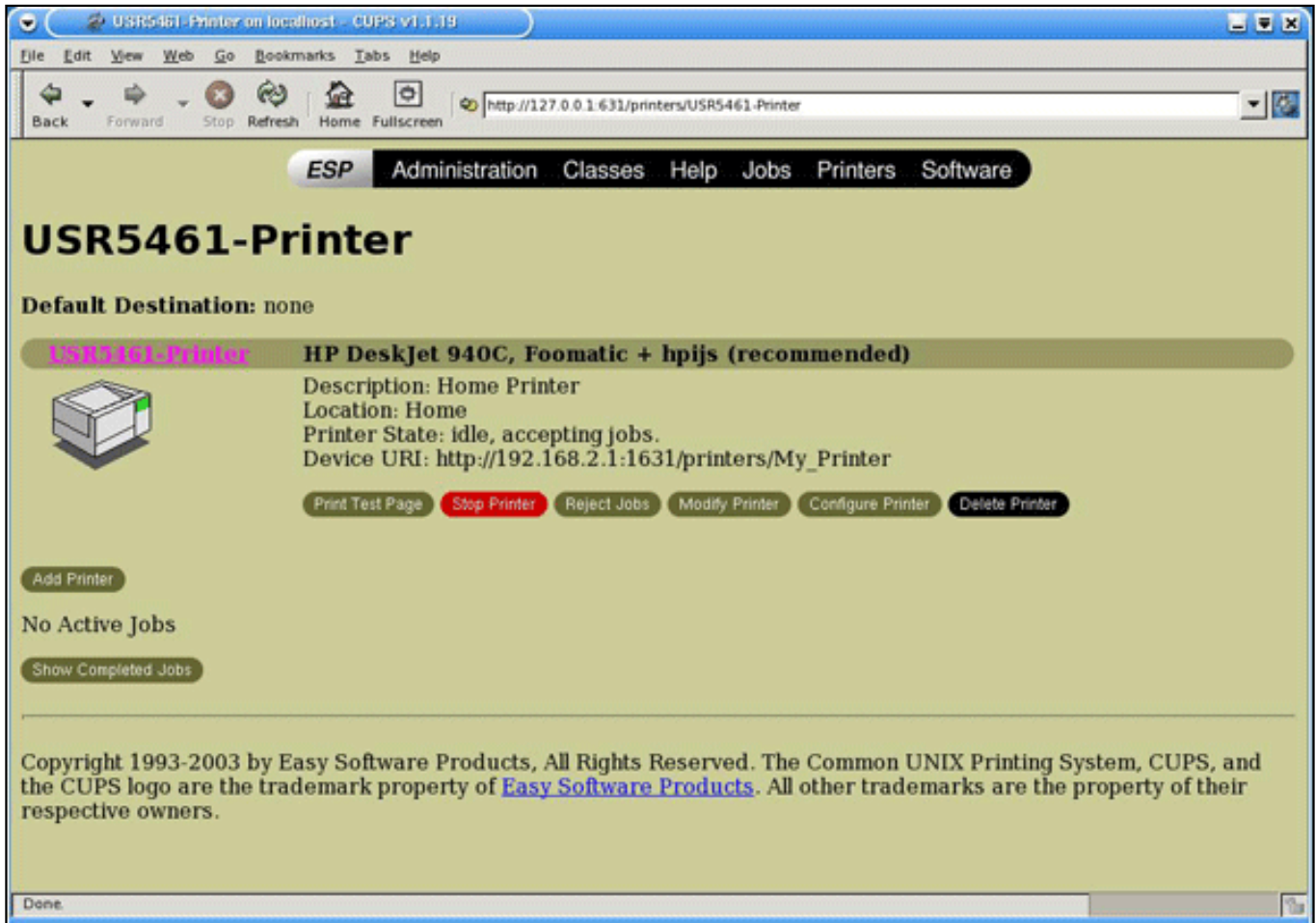


8. Select the manufacturer and model of your printer and click **Continue**.

9. Select the model of your printer and click **Continue**.

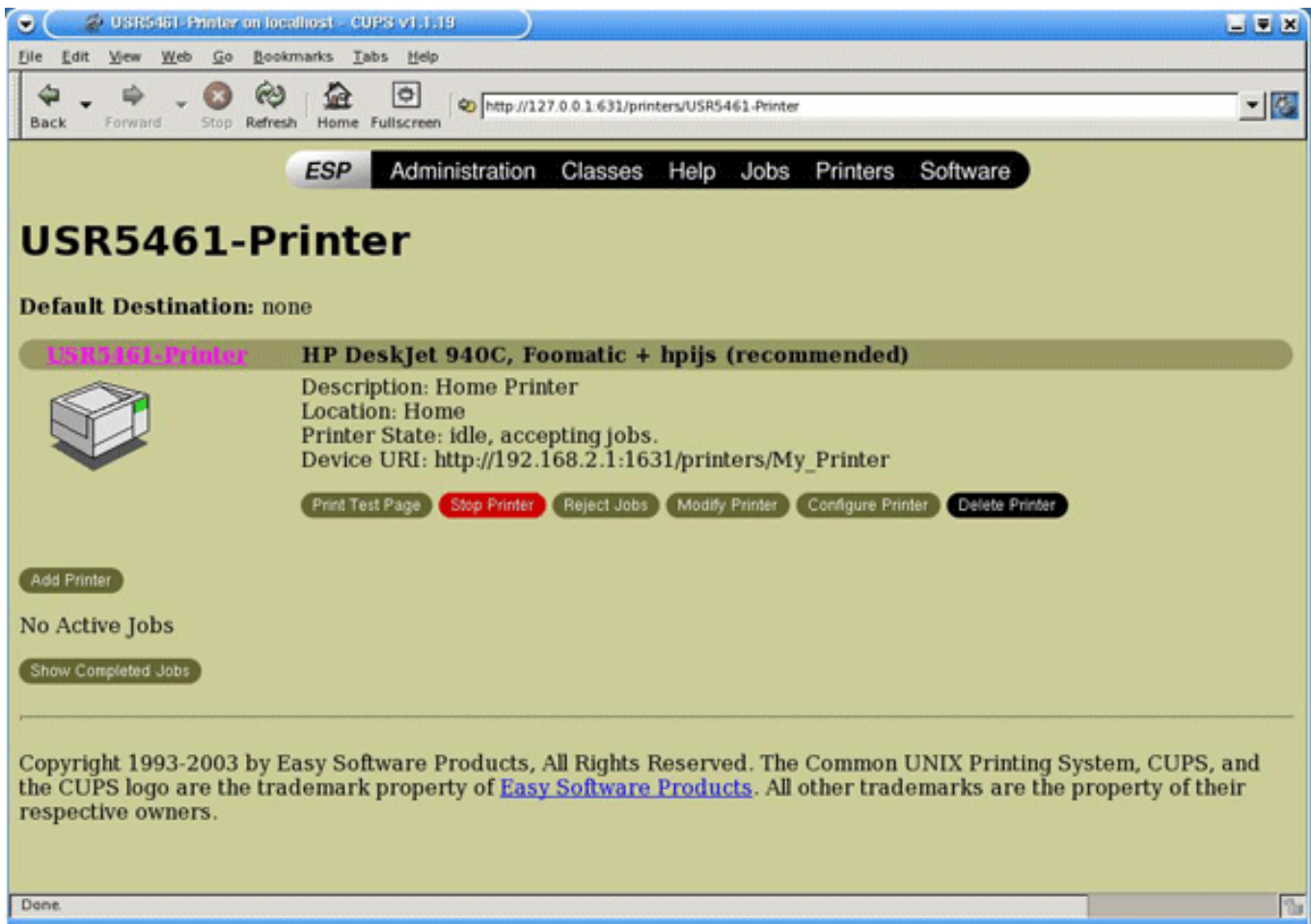
Note: If your printer does not appear in the list, open the **Software** link in the menu into a new window or tab, and search the CUPS repository for your printer drivers.

10. Click **Printers** to display information about your printer.



Step Four: Verify the printer's connectivity

1. Click **Print Test Page** to confirm that the printer is communicating with your computer.





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Using SecureEasySetup

SecureEasySetup™ makes it easy to connect wireless clients to your wireless router. SecureEasySetup automatically configures wireless security settings between your router and your wireless clients.^{[1](#)}

During the SecureEasySetup process, the router transmits SecureEasySetup information, so your wireless clients can execute SecureEasySetup and get the new **Network Name** (SSID), method type, encryption type, and pass phrase for your wireless network.

Note: While the router is in SecureEasySetup configuration mode, you can only configure one SecureEasySetup device at a time. Attempting to connect multiple devices may result in errors.

When the SecureEasySetup button on the router is pressed for 1 second:

1. One of the following will occur:
 - If you do not have any wireless security settings applied to your router, SecureEasySetup will generate a **Network Name** (SSID) and set **WPA2 and WPA (PSK)** wireless security, with **TKIP and AES** encryption, and generate a pass phrase.

- If you already have a **Network Name** (SSID) and **WPA2 and WPA (PSK)** wireless security, with **TKIP and AES** encryption, and a pass phrase set on the router, SecureEasySetup will not change any of these settings.
 - If you have another wireless security method or encryption type set up on your router, SecureEasySetup will detect **Network Name** (SSID) already used on the router, then reset your method and encryption to **WPA2 and WPA (PSK)** wireless security, with **TKIP and AES** encryption, and generate a pass phrase.
2. SecureEasySetup will negotiate with an installed **Nd₁** or other certified SecureEasySetup wireless device in range that is in SecureEasySetup mode to pass the wireless security settings to the device.

Pressing the SecureEasySetup button on your router for 7 seconds will reset your wireless security settings to the factory default, **None** (no security enabled).

Connect a New Wireless Client Using SecureEasySetup

1. Press the **SecureEasySetup** button on your router for 1 second. The SecureEasySetup LED will blink, indicating that it is ready to connect a SecureEasySetup device.
2. Press the **SecureEasySetup** button in the utility for your wireless adapter.

Your wireless adapter utility will display a message when the connection has been successfully completed.

The SecureEasySetup LED on your router will stop blinking when the SecureEasySetup process has completed on the router.

Disable SecureEasySetup

1. Press the **SecureEasySetup** button on your router for 7 seconds.

Note: This is not the same as a [restore to factory defaults](#) or a [reboot](#) of the router. The SecureEasySetup button only impacts your wireless security settings.

2. The SecureEasySetup LED will turn off. The security method and encryption type for your wireless network will be reset to **None**. No other settings on your router will be changed.

1 - BROADCOM, SecureEasySetup, and the SecureEasySetup logo are trademarks or registered trademarks of Broadcom Corporation in the United States and/or other countries.



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Connect Wireless Clients

You can use the SecureEasySetup™ button to connect installed **Nd₁** or other certified SecureEasySetup wireless devices to your router. [1](#)

If your wireless client has SecureEasySetup, you should see one of the following logos on the device or within the client utility:



If your wireless client does not support SecureEasySetup, you can manually enter the wireless security settings.

To connect a SecureEasySetup device to your wireless router:

1. Press the SecureEasySetup button on the back of your router for 1 second. The SecureEasySetup LED on the front of your router will start blinking.
2. Initiate SecureEasySetup in the client utility for your wireless adapter.
3. The router and the wireless device will synchronise wireless security settings, and the device will be securely connected to the router.

To connect a device to your wireless router manually:

1. Ensure that each wireless adapter that will be connected to the network is set to infrastructure mode.
2. Set the SSID in the wireless adapter's settings to the **Network name** (SSID) that is used in the router.
3. If you set wireless security on the router, ensure that the wireless security settings for the wireless adapter match those that you set on the router. For instruction in changing your adapter's wireless mode, see your wireless adapter's documentation.

1 - BROADCOM, SecureEasySetup, and the SecureEasySetup logo are trademarks or registered trademarks of Broadcom Corporation in the United States and/or other countries.



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Using the Router Configuration Pages

The router provides configuration pages you can use to configure the router to meet your networking needs. The router configuration pages also let you view statistics in order to monitor network activity.

Under normal operating conditions, you do not need to change the basic configuration that you established when you installed your router. However, if your network environment changes, you may need to reconfigure your router to reflect the new environment. For example, you may need to change your configuration settings if you:

- Want to use Firewall settings to [restrict access to the internet](#) for some devices.
- Add settings for [connecting a gaming console](#) to your router.
- Switch to a different Internet Service Provider (ISP).
- Change your account with your ISP.

Browser Configuration

You may also need to disable the HTTP Proxy feature of your Web browser so the configuration pages will display the most current information.

Internet Explorer users:

1. Click **Tools > Internet Options**, and select the **Connections** tab.
2. Select **Never dial a connection**, then click **Apply**.
3. Click **OK**.
4. Click **Tools > Internet Options**, and select the **Connections** tab again.
5. Click the **LAN Settings** button.
6. Clear all the check boxes and click **OK**.
7. Click **OK** again.

Netscape Navigator 8.x users:

1. Click **Tools > Options > General**.
2. Click the **Connection Settings** button.
3. Select **Direct connection to the Internet**, and then click **OK**.

Logging In to the Router Configuration Pages

1. Start your Web browser.
2. In the location or address line, type: 192.168.2.1 and press ENTER to access the router configuration pages.
3. Enter your user name and password and click **LOGIN**.

Using the Router Configuration Pages

Configurable parameters have a text box or a drop-down list. Once a configuration change has been made on a page, click **Save** or you will lose your settings.

The pages available in the router configuration are:

- [**Status**](#): Displays status information for your router and Internet service.
- [**Log**](#): Displays log information for your router.
- [**Internet**](#): Use to configure or change your Internet connection settings.
- [**Security**](#): Use to configure your security settings, and change the login information for your router.
- [**Firewall**](#): Use to configure your firewall setting.
- [**Wireless**](#): Use to configure your wireless settings.

- **LAN**: Use to configure advanced settings for your LAN.
- **Device**: Use to manage, backup and restore your device settings, update your firmware, etc.





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Router Status Information

From **Status** page, you can view the current status of your router and its features.

Refresh: Click **Refresh** at the bottom of the page to update the page with the most current information.



Device

Device

Name: **USRobotics Wireless Nd1 Router (USR5464)**
Time: **Monday, August 28, 2006 12:06:39 PM**
Firmware: **4.81.30.0.2 (Aug 25 2006)**
Boot loader: **CFE 4.81.30.0.1**
Printer status: **Not Ready**
Printer location: **http://192.168.2.1:1631/printers/My_Printer**

- **Name:** Displays the name of the router.
- **Time:** Displays the current date and time settings for your router. To set the time for your router, go to the [Device](#) page.
- **Firmware:** Shows the current firmware version on your router.
- **Boot loader:** Displays the boot loader version that is running on your router.
- **Printer status:** Displays the status of the printer connected to the router.
- **Printer location:** Displays the URL to use for a printer that is connected to the routers USB port when you are [connecting other computers to the printer](#).

Security

This section displays the current wireless security settings for your router.

Security

Method: **WPA2 and WPA (PSK)**
Encryption: **TKIP and AES**
Pass phrase: **password**
Wireless MAC filter: **Disabled**

- **Method:** The security method and security settings (**Encryption**, **Pass phrase**, **Key**, etc.) for your router. This information can be configured from the [Security](#) page.
- **Wireless MAC filter:** Displays whether the wireless MAC Filter is **Enabled** or **Disabled** on your network. This information can be configured from the [Security](#) page.

Wireless

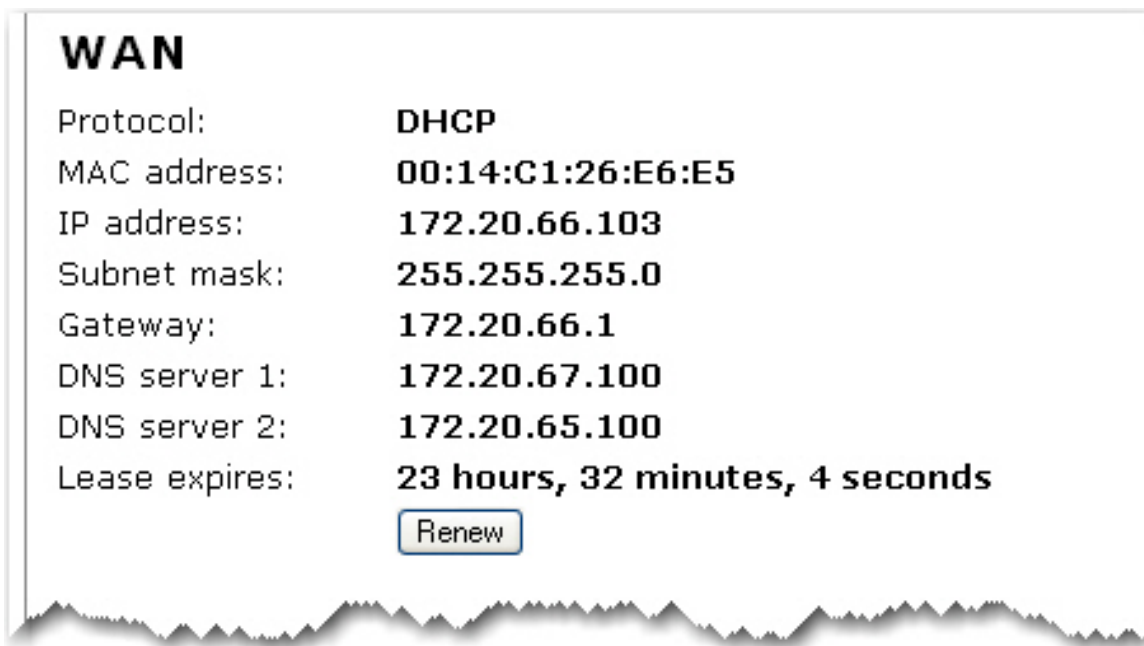
Wireless

Wireless: **Enabled**
Network name: **USR5464**
Broadcast name: **Enabled**
MAC address: **00:14:A5:96:70:49**
Mode: **Access Point**
WDS restrictions: **Disabled**

This displays information on your wireless network settings, including the following:

- **Wireless:** Displays the status of the wireless functions of the router, either **Enabled** or **Disabled**. This can be configured from the [Wireless](#) page.
- **Network name:** Displays the Network name of the router that is broadcast for wireless connections. This can be configured from the [Wireless](#) page.
- **Broadcast name:** Displays the whether the broadcasting of the network name is **Enabled** or **Disabled**. This can be configured from the [Wireless](#) page.
- **MAC address:** Displays the wireless (WLAN) MAC address of the router. This can be configured from the [Internet](#) page.
- **Mode:** Displays the mode the router is currently functioning in, either **Access Point** or **Bridge Mode**.
- **WDS restrictions:** Displays the status of [WDS restrictions](#) on the router, either **Enabled** or **Disabled**.
- **Channel:** Displays the current channel your router is using, and any side channel information in parentheses.

WAN



- **Protocol:** Displays type of protocol your network is using to connect to the Internet.
 - **DHCP:** The IP address for your Internet connection is assigned dynamically using the Dynamic Host Configuration Protocol.
 - **Static:** A specific, single IP address is assigned for your Internet connection.
 - **PPTP:** Your Internet connection uses the Point-to-Point Tunneling Protocol.
 - **PPPoE:** Your Internet connection uses Point-to-Point Protocol over Ethernet.
- **MAC address:** Displays the MAC address of the WAN/Internet interface of the router.
- **IP address:** Displays the IP address the router is using to connect to the Internet.
- **Subnet mask:** Displays the Subnet Mask the router is using to connect to the Internet.
- **Gateway:** Displays the Gateway that your Internet connection is using.
- **DNS server 1:** Lists the IP address of the first DNS server that is being used on your

network.

- **DNS server 2:** Lists the IP address of the second DNS server that is being used on your network.
- **Lease expires:** Displays the amount of time before your IP address lease expires or shows your IP address lease as **Expired**. If your IP address lease has expired, click the **Renew** button. *This option will only display if your ISP uses DHCP.*
- **Renew:** Clicking the **Renew** button will attempt to release and then renew your WAN IP address. *This option will only display if your ISP uses DHCP.*

Note: If you press the **Renew** button and you fail to get a WAN IP address, see [Troubleshooting](#) for information on how to [troubleshoot your connection](#).

LAN

LAN

IP address:	192.168.2.1
Subnet mask:	255.255.255.0
MAC address:	00:14:C1:26:E6:E4

- **IP address:** Displays the IP address your router uses on the LAN.
- **Subnet mask:** Displays the LAN interface Subnet Mask of your router.
- **MAC Address:** Displays the LAN interface MAC address of your router.

Clients

Note: Any devices connected to the router that have static IP addresses will not show up in the **Clients** list. Also, devices that are connected through a WDS connection will be displayed as **wired** clients.



Type	Name	MAC Address	IP Address	Expiration
wired	USROBOTI-9FD950	00:0F:FE:3E:08:89	192.168.2.2	58 minutes, 49 seconds

Refresh

- **Type:** The type of connection for the device, either **wired** or **wireless**.
- **Name:** The name of the connected device.
- **MAC Address:** The MAC address of the connected device.
- **IP Address:** The IP address that has been assigned to the connected device.
- **Expiration:** The timeframe before the lease will expire for the connected device.

Network Test (Ping)