brother.

IPP Protocol.

How to print using the IPP protocol on Windows 2000

A Brother "How-TO" Document

Abstract

The IPP protocol allows Windows 2000 users to send print jobs over the Internet or an Intranet.

Network Printers manufactured after June2000:
All Brother network ready printers manufactured after June 2000 that have at least 8Mbyes of printer memory support the IPP protocol.

Older Network Ready Brother Printers:
If your Brother printer does not support the IPP protocol refer to the Brother web site (www.brother.com or solutions.brother.com) to see if there is a firmware upgrade available for your printer,

IMPORTANT NOTE
Please note that your Brother printer must have at least 8Mbytes of printer memory to use the IPP protocol. For example, the basic configuration of the HL-1270N printer has 4Mbytes of memory. This would mean that the IPP protocol would be disabled automatically. If you have a HL-1270N that has 4Mbytes of memory, you MUST upgrade it to at least 8Mbytes. To do this you must purchase the appropriate memory upgrade for your printer. Please refer to the user guide that was supplied with the printer for more information on memory. *If your printer is supplied with 8Mbytes, or more of memory, the IPP protocol will be automatically enabled.*

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IPP and Windows 2000 – An Overview

With the release of Windows 2000, Microsoft have included support for the Internet Printing Protocol (IPP), this protocol allows Windows 2000 users to print from their PC in a new way. Typically, when submitting a print job, users would send a job using the LPD protocol.

However, the LPD protocol does not easily allow you to send print jobs over the Internet. To combat this, Brother was the first printer manufacturer to offer an Internet printing capability with the release of the HL-1660e and the NC-2000 series print servers in 1997. The Brother method of Internet printing used the SMTP and POP3 protocols to send print jobs from a PC and deliver it to another Brother printer at another location anywhere in the world. The PC user specifies an the e-mail address of a printer in their Windows software, the print job is then converted into a mail document and delivered using the SMTP protocol. When the data arrives at the correct e-mail server, the POP3 protocol is used by the printer to retrieve the data and print it. Because of the use of the SMTP protocol to deliver the data to the printer there is no special firewall configuration required.

With the advent of Windows 2000, Microsoft have impended the IPP protocol and it is now possible to send print jobs over the Internet or Intranet using the IPP protocol without having to install any additional 3rd party software. The following document explains the steps necessary for the successful configuration of a Brother printer into a Windows 2000 IPP configuration. For more information on the IPP protocol, go to: www.ietf.org and www.pwg.org.

Structure of this document:

This document is split into four parts:

1. **Configuring Windows 2000 to print to a Brother printer**. Details the steps necessary to install and configure a printer driver into a Windows 2000 environment.
2. **Specifying a different URL.** The Brother IPP implementation is configurable and it is possible to specify a variety of different IPP URL's for different purposes.
3. **Specifying a different Port number.** For added flexibility it is also possible to specify different port numbers, ensuring the minimum of firewall and/or router configuration.
4. **Network Printer Driver Wizard IPP installation.** Brother's Network Printer Driver Wizard software can automate the installation of a printer in a Windows 2000 IPP environment.

Configuring Windows 2000 to print to a Brother Printer

On the following screen shots there are references to the Brother HL-1270N printer, however, any Brother printer that can use the NC-3100h or later print server can also be configured in the following way.

Run the Add Printer Wizard and click the Next button when you see the "Welcome to the Add Printer Wizard" screen.

You are now able to select "Local Printer" or "Network Printer". Make sure that you select "Network Printer".

You will see the following screen:
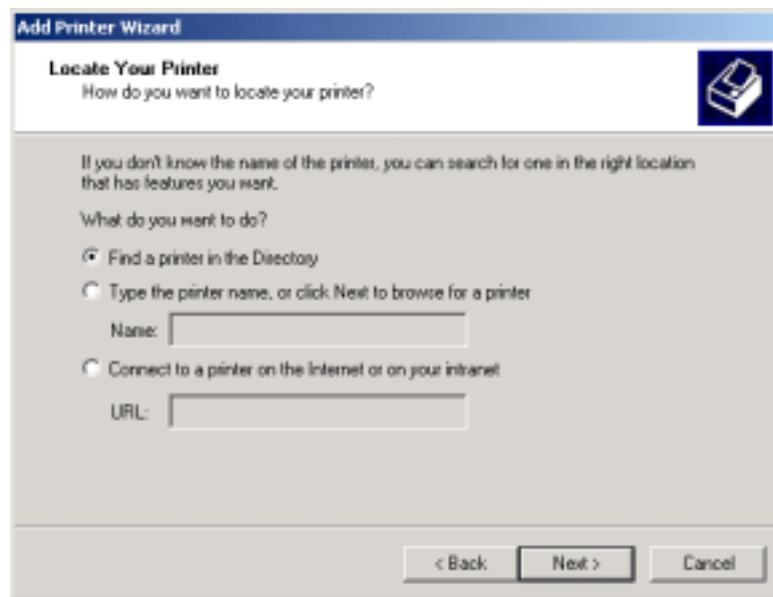
Figure 1 Add Printer Wizard Screen

Select the "Connect to a printer on the Internet or on your intranet" and then enter the following in the URL: field: **http://printer_ip_address:631/ipp**

Where "printer_ip_address" is the IP address of your printer.
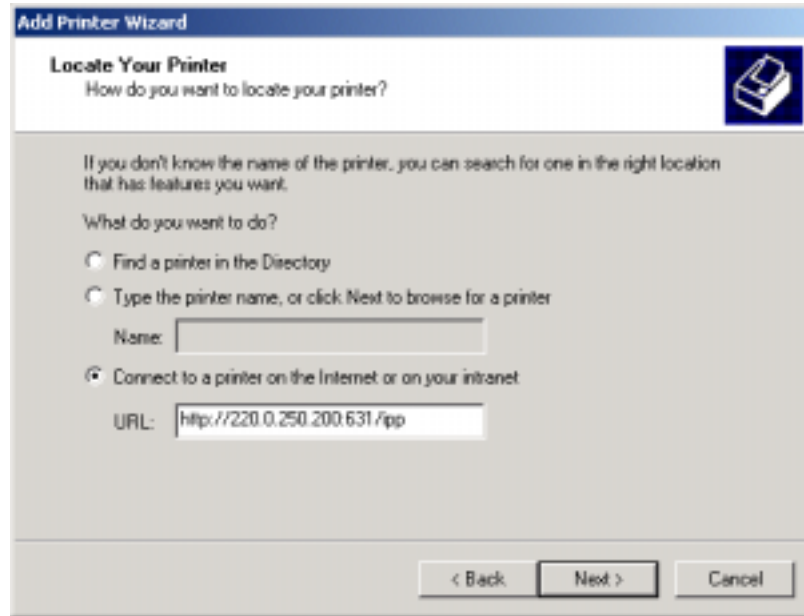
Figure 2 Specifying the IPP URL using an IP address

If your printer is registered with a DNS server, then you can enter the DNS name of the printer. For example:
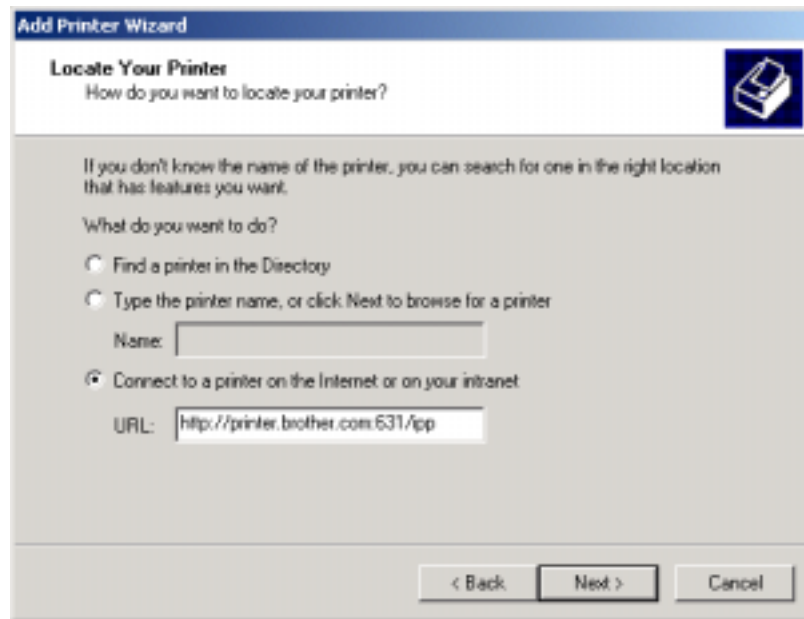

Figure 3 Specifying the IPP URL using a DNS name

When you click "Next", Windows 2000 will make a connection with the URL that you specified.

IF THE PRINTER DRIVER HAS ALREADY BEEN INSTALLED
If the appropriate printer driver is already installed on your PC, Windows 2000 will automatically use that driver for use. In this case, you will simply be asked if you wish to make the driver the default driver, after which the Driver installation Wizard will complete. You are now ready to print.

IF THE PRINTER DRIVER HAS NOT BEEN INSTALLED
One of the benefits of the IPP printing protocol is that it establishes the model name of the printer when you communicate with it. After successful communication you will see the model name of the printer automatically, this means that you do not need to inform Windows 2000 the type of printer driver to be used.
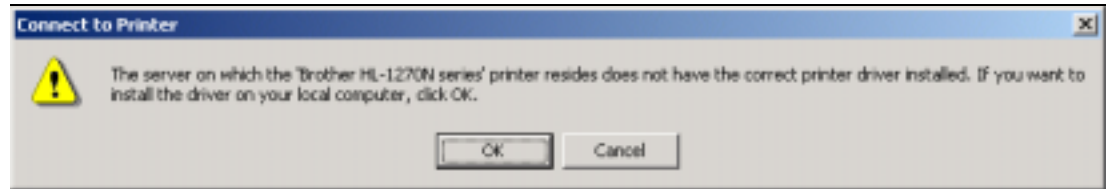
Figure 4 Connect to a printer. The printer driver is not installed on the PC
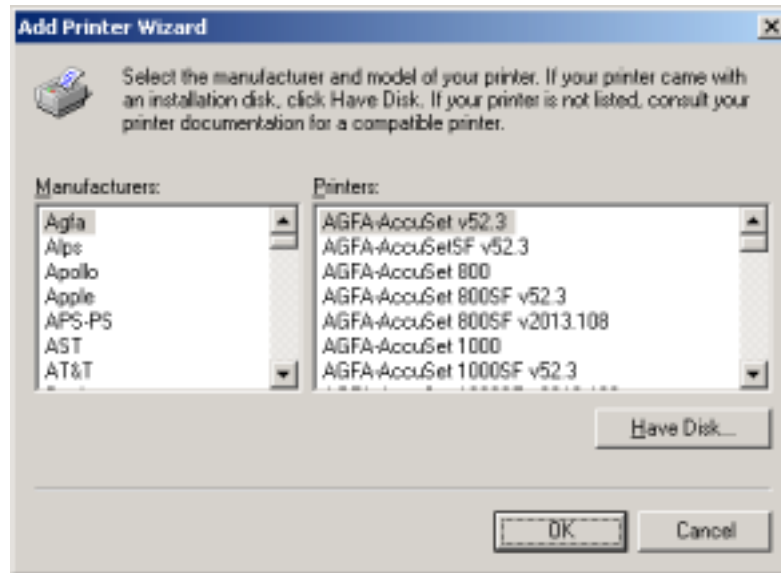
Click "OK", you will then see the following:

Figure 5 Selecting the appropriate driver

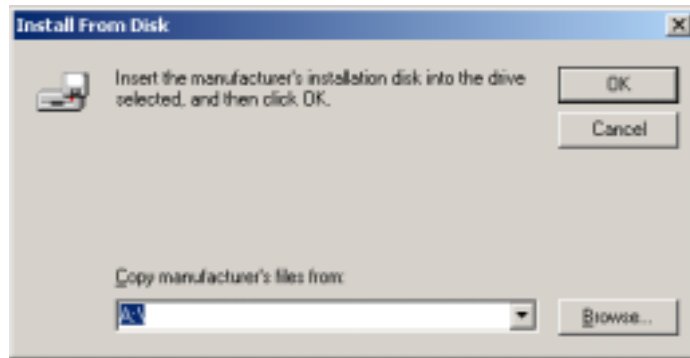If your printer is not in the list of supported printers, click the "Have Disk" button. You will then see:

Figure 6 Specifying the location of the driver

Click the "Browse" button and select the CD-ROM, network share, or floppy diskette that contains the appropriate Brother printer driver.
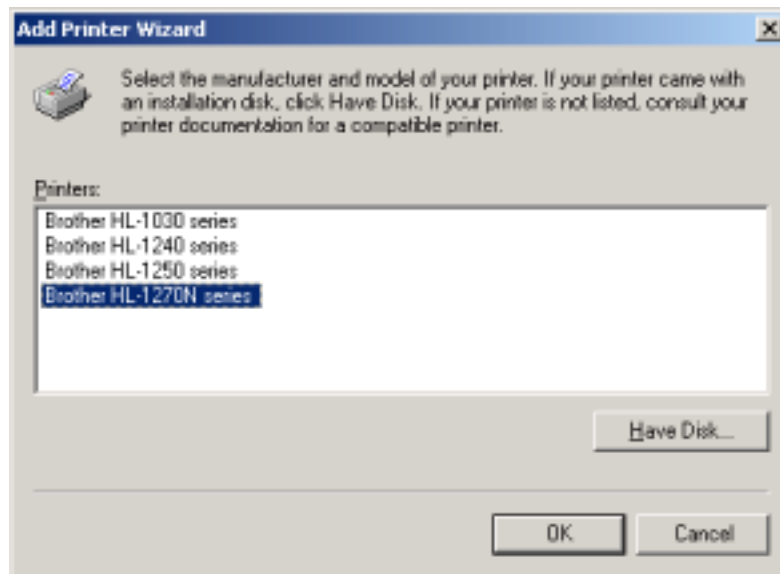
Now specify the model name of the printer:

Figure 7 Specifying the correct printer

If the printer driver that you are installing does not have a Digital Certificate you will see a warning message. Click "Yes" to continue with the installation.
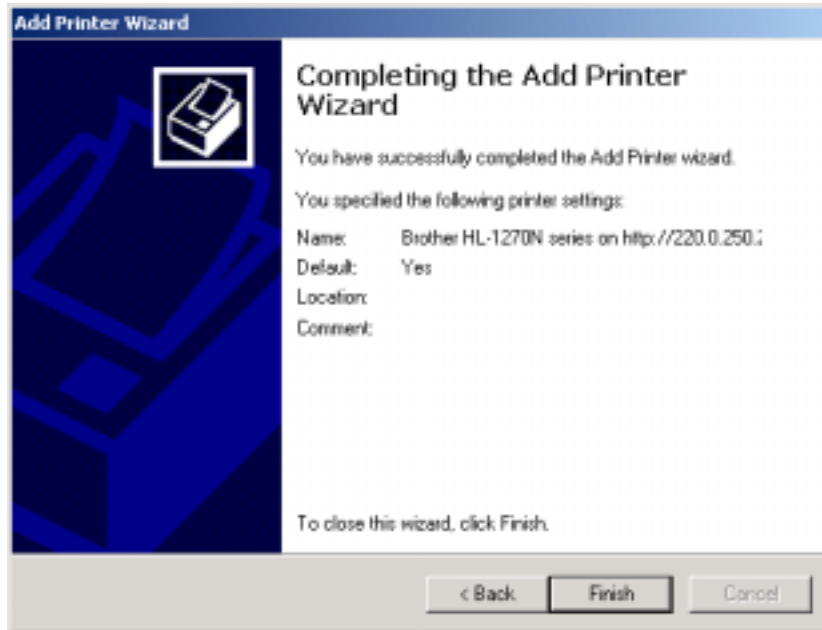
The Add Printer Wizard will then complete.

Figure 8 Completing the Add Printer Wizard

Click the "Finish" button and the printer is now configured and ready to print. To test the printer connection, print a test page.

Specifying a different URL

Please note that there are several possible entries that you can enter for the URL field.

http://printer_ip_address:631/ipp
This is the default URL and we recommend that you use this URL. Please note the "Get Mori Info" option will not display any printer data

http://printer_ip_address:631/ipp/port1
This is for HP JetDirect compatibility. Please note the "Get Mori Info" option will not display any printer data

http://printer_ip_address
Use this URL if you wish to use the "Get More Info" option in Windows 2000.

http://printer_ip_address:631/
If you forget the port number details, you can simply enter the above text and the printer will still receive and process data. Please note the "Get Mori Info" option may not display data if you are using a Proxy server.

If you are using the built in service names that the Brother NC-3100h series print server supports, you can also use the following (however, please note the "Get Mori Info" option will not display any printer data

http://printer_ip_address:631/brn_xxxxxx_p1
http://printer_ip_address:631/binary_p1
http://printer_ip_address:631/text_p1
http://printer_ip_address:631/postscript_p1
http://printer_ip_address:631/pcl_p1
http://printer_ip_address:631/brn_xxxxxx_p1

Where printer_ip_address is the IP address of the printer.

Specifying a different port number

In all of the examples, Port number 631 has been specified (this is IPP standard port). However, if your firewall, or router, does not allow this port number through, you can also use the standard HTTP port 80, simply enter the URL information without specifying a port number and Windows 2000 will automatically use Port 80.
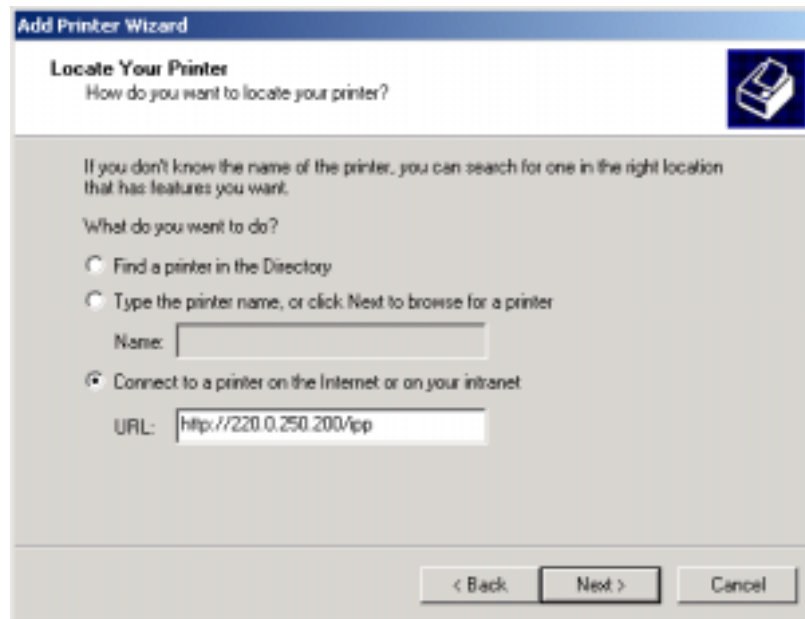
Figure 9 Using port 80

If you use the URL: http://printer_ipaddress, you will be able to use the "Get More Info" option in Windows 2000. If you use other URLs, the "Get More Info" link will not display any information.
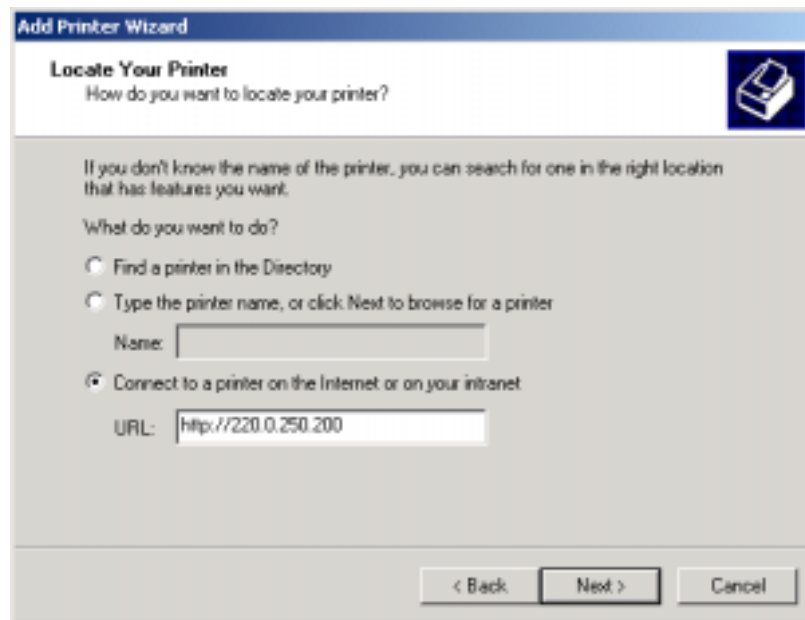
Figure 10 No port number is specified in the URL information
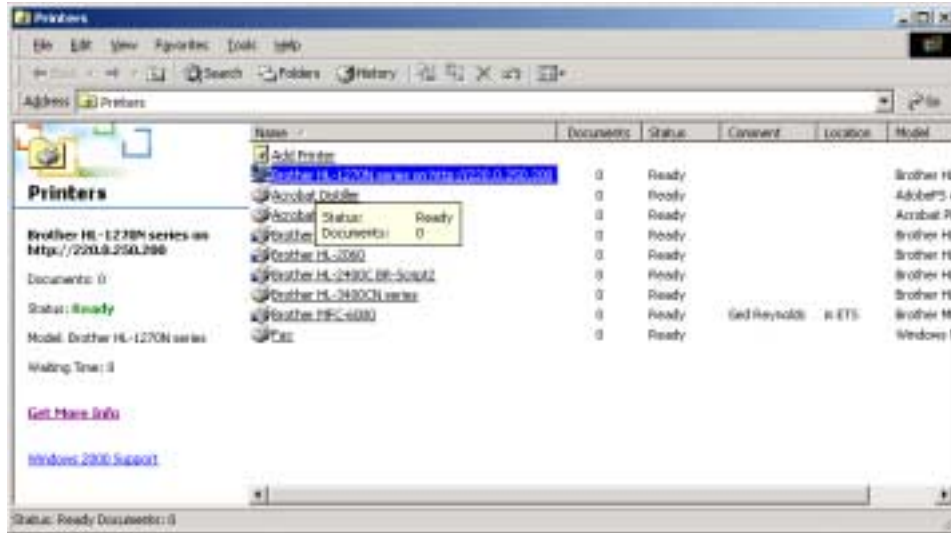
When you click on "Get More Info"

**Figure 11 Printer Drivers with "Get More Info" available**

You will then see the homepage of your Brother printer.

Network Printer Driver Wizard IPP installation

If you do not wish to step through the installation process as outlined in the previous pages, the Brother Network Printer Driver Wizard software can be used to automate the IPP installation process on a Windows 2000 PC.
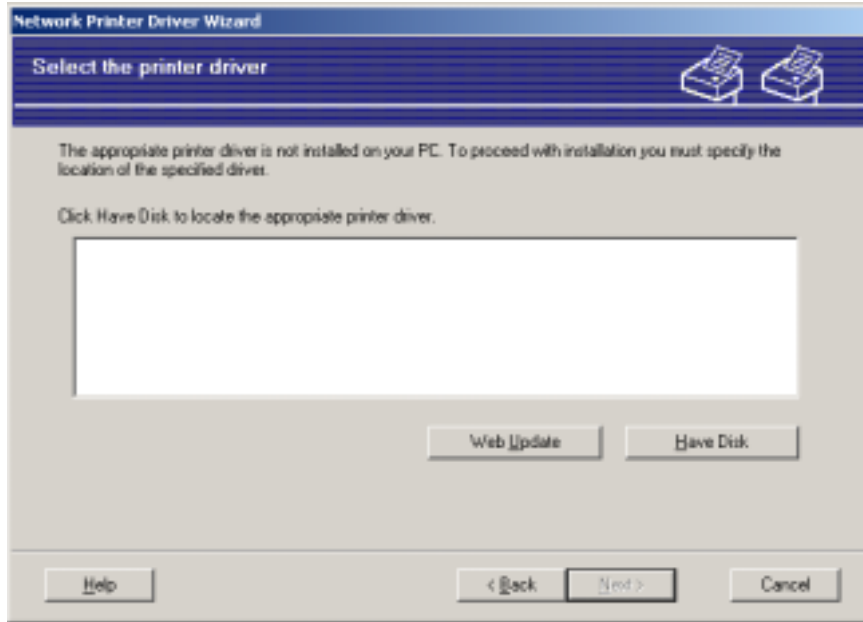

Click the 'Next' button.
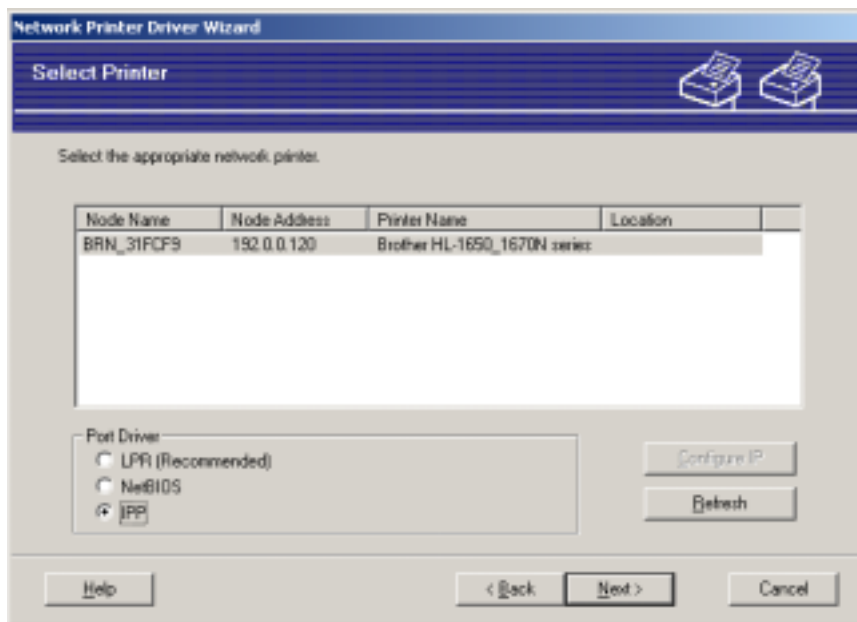
The Driver Wizard will locate all Brother network connected printers. If the printer does not have a valid IP address, click the 'Configure IP' button to assign IP address information. After selecting the correct printer, click 'IPP' in the 'Port Driver' options and click 'Next'

If you do not already have the appropriate printer driver installed on your PC, specify the location of the printer driver, click the 'Have Disk' option and select the appropriate folder on your Brother printer driver CD-ROM. If you have a connection to the Internet, click the 'Web Update' button to retrieve the latest Brother driver from www.brother.com

When you have specified the appropriate driver, click the 'Next' button to proceed with the installation.
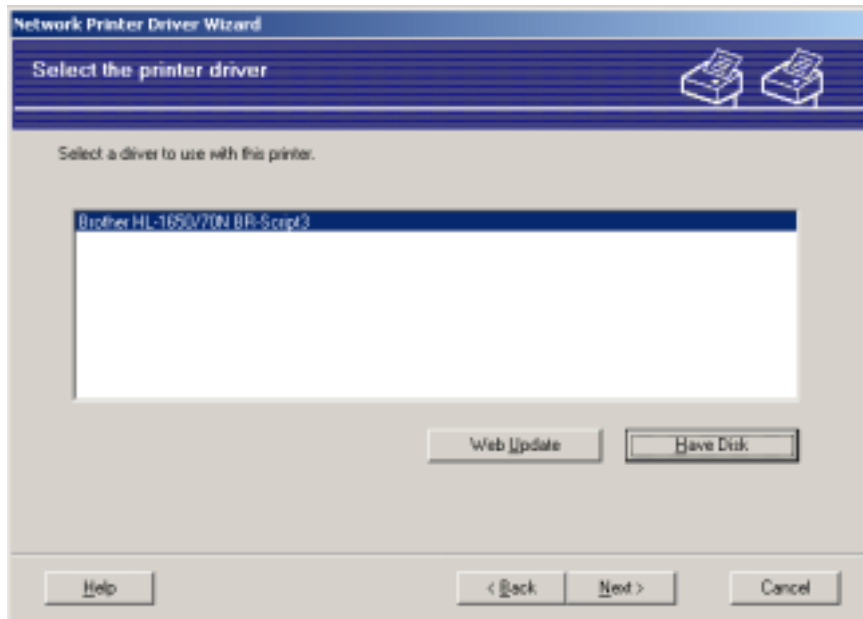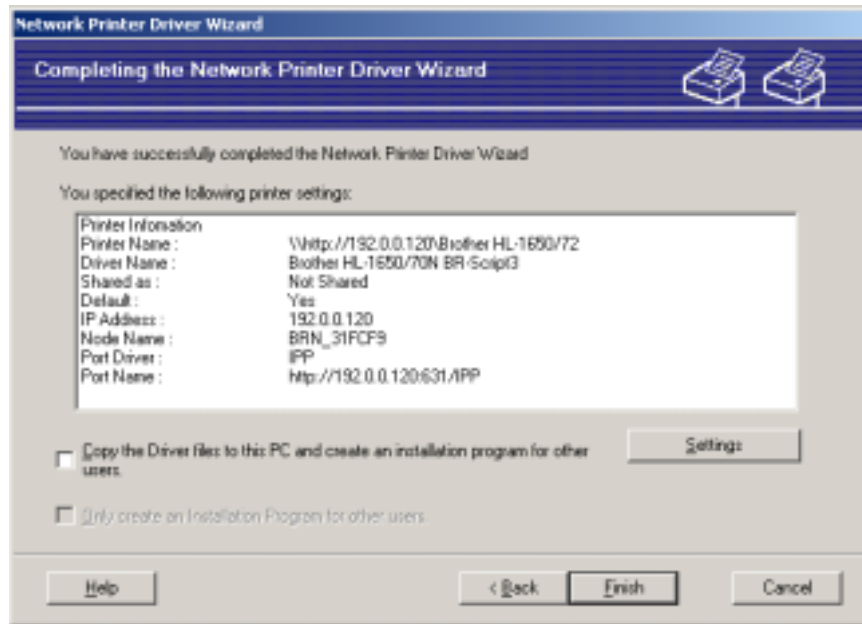
Confirm that the options are set correctly and also note that if you click the 'Copy the Driver files to this PC and create an installation program for other users' you are able to create a .EXE file which you can send to other users which automates the installation of the driver into your networked environment.

Click the 'Finish' button and the driver installation and follow any on-screen prompts after which driver installation will be complete.

TRADEMARKS

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