



## FTP Protocol.

### How to print or upgrade using the FTP protocol.

A Brother "HOW-TO" Document

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#### **Abstract**

With the release of version 3.00 or later (for the HL-1270N) or version 2.00 (for the HL-2400Ce/HL-3400CN) or later, the Brother NC-3100h series now support the FTP protocol. Using the FTP protocol it is possible to send print jobs, upgrade firmware or even change the configuration of the printer from any TCP/IP client that includes an FTP client application. The following document explains the steps necessary to use the FTP protocol with Brother's NC-3100h series print servers.

#### **IMPORTANT NOTE**

Please note that your Brother printer must have at least 8Mbytes of printer memory in order for you to use the FTP protocol. For example, the basic configuration of the HL-1270N printer has 4Mbytes of memory. This would mean that the FTP protocol would be disabled automatically when switched on. 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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## ***FTP – An Overview***

Brother's File Transfer Protocol (FTP) implementation allows you to perform a variety of tasks quickly and easily. For example, if you wish to quickly ascertain the printer status but do not have access to a web browser or a TELNET connection, FTP can be used to query the status of the printer and if everything is OK, a print job can then be issued from the command line of the FTP session.

Structure of this document:

This document is split into five parts:

1. **Sending a print job using the FTP protocol.** Details the steps necessary to print using the FTP protocol.
2. **Getting the printer status using the FTP protocol.** How to get the printer status using the FTP protocol
3. **Retrieving the print server configuration using FTP.** Uploading the print server configuration file.
4. **Upgrading firmware using FTP.** Using the FTP protocol for firmware upgrading. You can use a web browser or the command prompt.
5. **Changing the print configuration using FTP.** Sending a configuration file to the printer and changing its default settings.

### **Sending a print job using the FTP protocol**

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.

The file system in the print server is like that of a traditional FTP server, in other words you will be asked to log onto with a user name, once logged on you will be able to use the LS, send, hash commands etc..

To make an FTP connection.

From the command prompt enter:

FTP ip\_address

Where ip\_address is the IP address of the print server. For example:

FTP 220.0.250.200 would open a connection with an IP address of 220.0.250.200

You will then see the following...

```
C:\>ftp 220.0.250.200
Connected to 220.0.250.200.
220 FTP print service:V-1.05/Use the network password for the ID if updating.
User (220.0.250.200:(none)):
```

At this point you have two choices:

- 1) You can enter ANY user name, if you enter any user name then you will be able to send print jobs to the printer, however, you will not be able to upgrade the firmware.
- 2) If you enter the print server password as the user name, it will be possible to upgrade the firmware of the print server or printer (printer firmware upgrading only available on certain models).

Enter the appropriate user name and press RETURN. In the example below, the username “kaori” was specified. This means that it will be possible to send a print job, however, if we attempt to upgrade firmware, the process will be ignored.

```
C:\>ftp 220.0.250.200
Connected to 220.0.250.200.
220 FTP print service:V-1.05/Use the network password for the ID if updating.
User (220.0.250.200:(none)): kaori
230 User kaori logged in.
ftp>
```

We will now send a print file to the printer called “2000.prn”.

```
D:\>ftp 220.0.250.200
Connected to 220.0.250.200.
220 FTP print service:V-1.05/Use the network password for the ID if updating
User (220.0.250.200:(none)): kaori
230 User kaori logged in.
ftp> hash
Hash mark printing On ftp: (2048 bytes/hash mark) .
ftp> bin
200 Ready command OK.
ftp> send 2000.prn
200 Ready command OK.
150 Transfer Start
#####
226 Data Transfer OK.
ftp: 135782 bytes sent in 0.70Seconds 193.70Kbytes/sec.
ftp> close
221 Good bye.
ftp> quit
```

The command “send 2000.prn” is the command that actually sends the file to the printer.

Other commands:

- Bin – this puts the printer into binary receive mode. If you do not enter this command the printer may print garbage.
- Hash – this command makes your client connection display a ‘#’ sign for every 2Kbytes of data that is received by the printer.
- Close – Closes the connection, you will not be able to send any more data to the printer until you re-establish a printer connection.
- Quit – Quits the FTP software and returns you to your DOS prompt.

#### **Printing from legacy Unix systems**

The majority of Unix systems use the LPD protocol for printing. However older systems from Unix providers such as SCO may not support this method of printing.

In this case, it is possible to use the FTP protocol to transfer a print job from the Unix system to a printer that it using the FTP protocol.

Refer to your Unix documentation for details on how to print using the FTP protocol.

## Getting the printer status using the FTP protocol

If you would like to know the status of the printer before you send a print job, simply use the “dir” or “ls” command and you are able to see the status of the printer. In the example below, we can see that the printer is in SLEEP mode:

```
D:\>ftp 220.0.250.200
Connected to 220.0.250.200.
220 FTP print service:V-1.05/Use the network password for the ID if updating.
User (220.0.250.200:(none)): kaori
230 User kaori logged in.
ftp> dir
200 Ready command OK.
150 Transfer Start
total 1
-r--r--r-- 1 root printer 4096 Apr 1 2000 CFG-PAGE.TXT
----- 1 root printer 0 Apr 1 2000 LJ-SLEEP-001P-T1
226 Data Transfer OK.
ftp: 145 bytes received in 0.00Seconds 145000.00Kbytes/sec.
ftp> close
221 Good bye.
ftp> quit
```

## Retrieving the print server configuration using FTP

If you would like to retrieve the network configuration details without using BRAdmin32, a web browser or a TELNET connection, you can use the FTP protocol to get configuration details of the print server. Simply retrieve the file: CFG-PAGE.TXT from the print server, for example:

```
ftp> dir
200 Ready command OK.
150 Transfer Start
total 1
-r--r--r-- 1 root printer 4096 Apr 1 2000 CFG-PAGE.TXT
----- 1 root printer 0 Apr 1 2000 LJ-SLEEP-001P-T1
226 Data Transfer OK.
ftp: 145 bytes received in 0.00Seconds 145000.00Kbytes/sec.
ftp> get CFG-PAGE.TXT
200 Ready command OK.
150 Transfer Start
226 Data Transfer OK.
ftp: 2141 bytes received in 0.01Seconds 214.10Kbytes/sec.
ftp> close
221 Good bye.
ftp> quit
```

You can then use a regular text editor see display the information. For example, in Windows you can use the Notepad application, Unix users can use the VI editor, or any other text editor.

## Upgrading Firmware using FTP

### From a Web Browser

It has become increasingly common for PC's to be supplied with a web browser. For added flexibility, it is also possible to upgrade the firmware of the print server and printer (if supported) using a web browser. This means that on a computer that does not include an FTP client, you can if you wish, use a web browser.

There are a variety of web browsers available, and Brother is not able to test every single web browser and version of that web browser. For simplicity, we have tested Netscape Communicator version 4.7 along with Microsoft Internet Explorer 5 and 5.5.

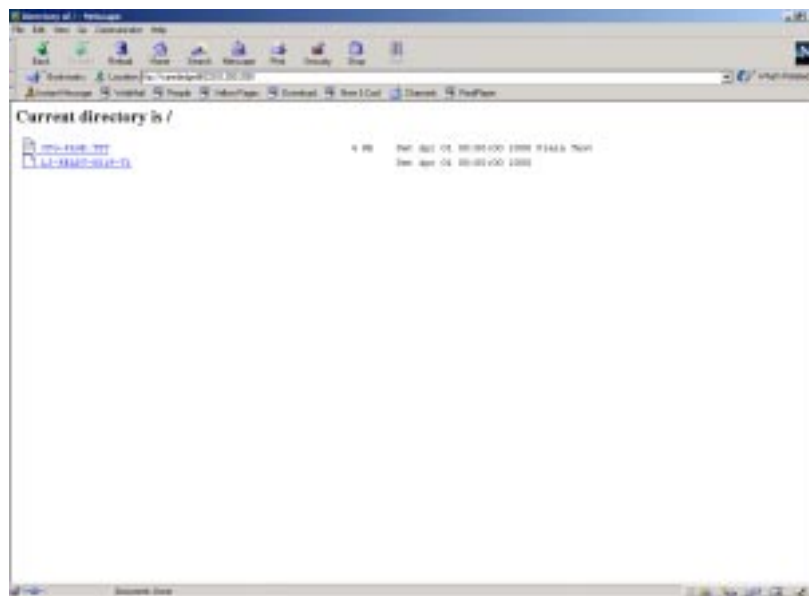
### Netscape or Internet Explorer software

Connect to the printer using the following for the URL: [password@ip\\_address](#) where:

Password = the password of the print server (in the screenshot below the password specified was "cambridge").

Ip\_address = The IP address of the print server. In the screen shot below, the IP address is 220.0.250.200. For example: [cambridge@220.0.250.200](#)

### Netscape Communicator 4.7



**Figure 1 Netscape Communicator**

From the File menu select File | Upload File, and then select the firmware file that contains the new firmware. The new firmware file will be transferred to the printer and the firmware upgrade process will start.

## Internet Explorer 5 and 5.5

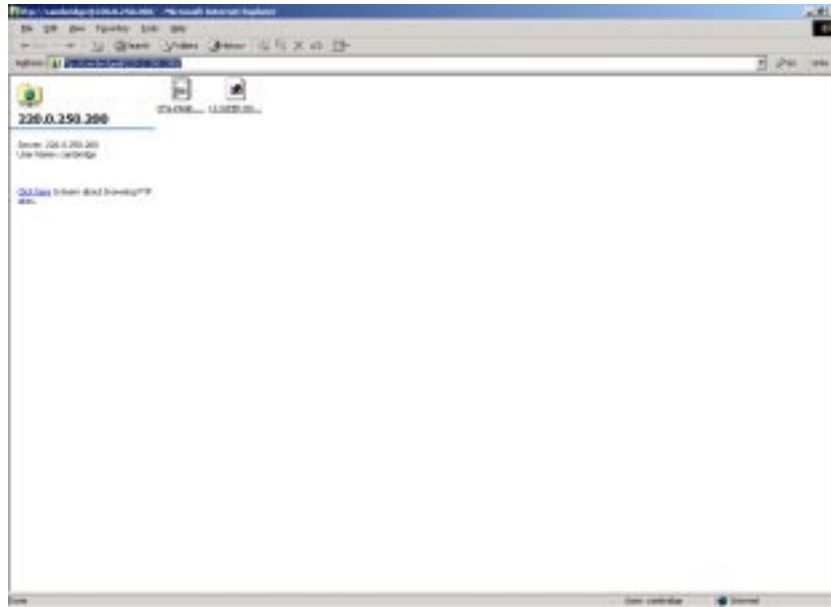


Figure 2 Internet Explorer

Go to the folder on your PC that contains the new firmware. Highlight the file and select the Copy option. The file is now in the clipboard of your PC.

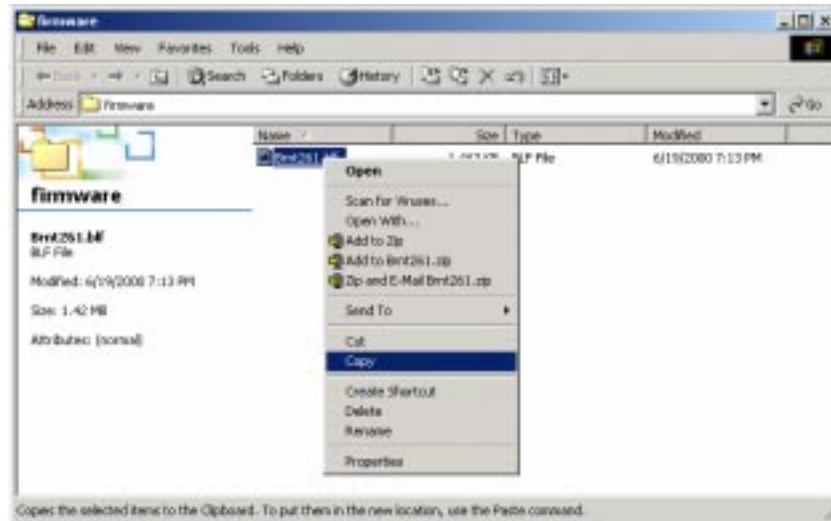


Figure 3 Copying the file into the clipboard

Switch back to the FTP connection you established in Internet Explorer and select Edit and Paste.

The new firmware file will be transferred to the printer and the firmware upgrade process will start.



## Changing the printer configuration using FTP

Brother Bradmin32 application allows you to mass configure Brother printers in a Windows environment, however, for non-Windows users, it is also possible to configure printer settings using the FTP protocol. This capability requires a special binary file that includes special printer commands (known as control codes).

In the example below, the file “ffof1270.bin” is sent to the printer, this file disables the form feed suppression capability of the printer (typically, the printer will not print a page if it contains no data, this sometimes occurs on bespoke software applications that work outside of the Windows operating system). By sending the file “ffof1270.bin”, the printer WILL print a blank page if it receives only the form feed command and no other data from the software application.

```
D:\>ftp 220.0.250.200
Connected to 220.0.250.200.
220 FTP print service:V-1.05/Use the network password for the ID if updating.
User (220.0.250.200:(none)): kaori
230 User kaori logged in.
ftp> bin
200 Ready command OK.
ftp> send ffof1270.bin
200 Ready command OK.
150 Transfer Start
226 Data Transfer OK.
ftp: 8 bytes sent in 0.00Seconds 8000.00Kbytes/sec.
ftp> close
221 Good bye.
ftp> quit
```

At this is a binary file, you MUST use the “bin” command to put the FTP connection into binary mode.

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