



UK

Multi-Protocol Print / Fax Server

NC-8100h

USER'S GUIDE

Please read this manual thoroughly before using the printer. You can print or view this manual from the CD-ROM (supplied with your MFC) at any time, please keep the CD-ROM in a convenient place for quick and easy reference at all times.

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Shipment of the print server

If for any reason you must ship your print server, carefully package the print server to avoid any damage during transit. It is recommended that you save and use the original packaging. The print server should also be adequately insured with the carrier.

WARNING

When shipping the print server, put it into the anti-static bag to avoid damage.



Multi-Protocol Print / Fax Server

NC-8100h

USER'S GUIDE

For technical and operational assistance, please visit the Brother web site on
<http://solutions.brother.com>

If you have comments or suggestions, please write us at:

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INTERNET ADDRESS

For technical questions and downloading drivers: <http://solutions.brother.com>

Introduction

Overview

The Brother NC-8100h Print / Fax Server allows your Brother MFC to be attached and shared on a 10/100Mbit Ethernet Network. Web Based Management and Administration utilities provide easy configuration and management of your Brother MFC. Once installed and configured, the NC-8100h allows your MFC machine to FAX documents over the Internet; print and scan documents over a network. The NC-8100h is even supplied with Brother's Peer to Peer printing software allowing you to easily share the machine as a small department printer.

Features

Internet Fax

The Brother MFC can be assigned an E-mail address allowing you to send, receive and forward documents on a Local Area Network and the Internet to PC's or other Internet Fax machines.

Network Printing

The Print / Fax server can be utilized as a print server providing printing services for the Windows® 95/98/Me, Windows® NT® 4.0/2000, Unix Systems supporting the TCP/IP protocols, Novell Operating Systems supporting IPX/SPX and Macintosh Networks supporting AppleTalk.

Network Scanning

You can scan documents into the Brother MFC and then E-mail them to your PC for editing in Black & White or Color.

Management Utilities

The Web Based Management and BRAdmin Professional utilities provide powerful easy to use management of Fax, network and E-mail settings.

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IMPORTANT INFORMATION: REGULATIONS

Federal Communications Commission (FCC) Declaration of Conformity (For U.S.A. only)

Responsible Party: Brother International Corporation
100 Somerset Corporate Boulevard
Bridgewater, NJ 09907-0911, USA
TEL: (908) 704-1700

declares, that the products

Product Name: Brother Network Card (BR-net)
Model Number: NC-8100h

complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undersired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Important

Changes or modifications not expressly approved by Brother Industries, Ltd. could void the user's authority to operate the equipment.

Industry Canada Compliance Statement (For Canada only)

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Declaration of Conformity (Europe)

We, Brother Industries, Ltd.,
15-1, Naeshiro-cho, Mizuho-ku, Nagoya 467-8561, Japan

declare that this product is in conformity with the following normative documents.

Safety: EN 60950,
EMC: EN 55022 Class B, EN 55024

following the provisions of the Low Voltage Directive 73/23/EEC and the
Electromagnetic Compatibility Directive 89/336/EEC (as amended by 91/263/EEC
and 92/31/EEC).

Issued by: Brother Industries, Ltd.
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CHAPTER ONE

TCP/IP Configuration

Assigning TCP/IP Information

Overview

The TCP/IP protocol requires that each device on the network have its own unique IP address. Use the following information to learn about IP address configuration.

By default Brother Print / Fax servers have a sample IP address of 192.0.0.192, however, you can easily change this IP address number to match with the IP address details of your network. This can be done in any of the following ways:

1. MFC front panel setting.
2. BRAdmin application (for Windows® 95/98/Me/NT® 4.0/2000 using the IPX/SPX or TCP/IP protocol).
3. DHCP, Reverse ARP (rarp) or BOOTP.
4. The ARP command.
5. Brother BRCONFIG NetWare utility (A Novell Network is necessary).

Other ways to CHANGE the IP address once it is already set:

1. MFC front panel
2. TELNET
3. HTTP (Web browser)
4. Other SNMP based management utility

These configuration methods are described in the following paragraphs.



The IP address you assign to the Print / Fax server must be on the same logical network as your host computers, if it is not, you must properly configure the subnet mask and the router (gateway).

Using the MFC front panel to allocate an IP address.

Refer to chapter 2 for details on how to configure IP address information using the MFC control panel. By using the front panel of the MFC, you can program the IP address details at the same time that other MFC parameters are configured.

Using BRAdmin and the TCP/IP Protocol to set the IP address

If your PC has only the TCP/IP protocol, do the following:

1. Select TCP/IP filter in the left frame of the main window.
2. Select the "Device" menu and choose the "Search Active Devices".



If the Print / Fax server is set to its factory default settings, it will not appear in the BRAdmin screen, however, when you select the "Search Active Devices" option, it will be found as an un-configured device.

3. Select the "Device" menu and choose the "Setup Unconfigured Device".
4. Select the MAC address of your Print / Fax server and click the Configure button.

You can find the node name and MAC address by printing out the MFC configuration page. Refer to the Quick Setup Guide for information on how to print the configuration page on your Print / Fax server.

5. Input the IP address, Subnet mask and Gateway (If needed) of your Print / Fax server.
6. Click OK then select Close.
7. With the correctly programmed IP address, you will see the Brother Print / Fax server in the device list.

Using BRAdmin and the IPX/SPX Protocol to set the IP address

If your PC has Novell Netware Client software and is using the IPX/SPX protocol, do the following:

1. Select IPX/SPX filter in the left frame of the main window.
2. Check the Print / Fax server name (the default node name will be BRN_XXXXXX, where "XXXXXX" is the last six digits of the Ethernet address (MAC address)).

If you cannot find your server name, select the "Device" menu and choose "Search Active Devices" (you can also press the F4 key) and try again.

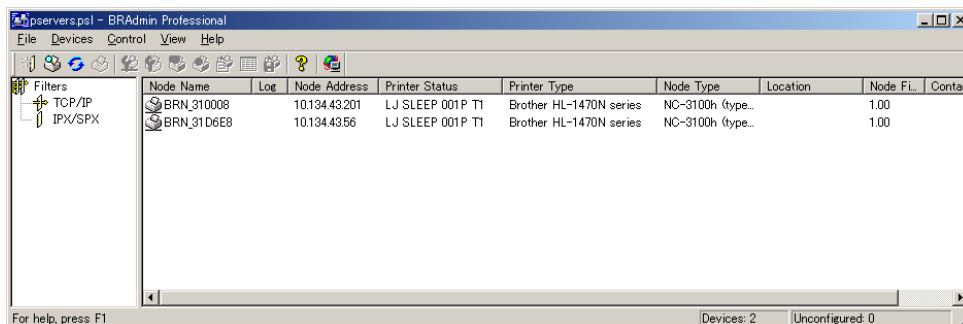


You can find the node name and MAC address by printing out the MFC configuration page. Refer to the NC-8100h Quick Setup Guide for information on how to print the configuration page on your Print / Fax server.

3. Select the Print / Fax server that you wish to configure and double click it. You will be asked for a password. The default password is "access".
4. Select the TCP/IP tab and set the IP address, Subnet mask and Gateway as needed.
5. Click OK.

Changing the IP Address using the BRAdmin application

Start the BRAdmin application (from Windows® 95/98/Me/NT® 4.0/2000).



The BRAdmin application can use the IPX/SPX or TCP/IP protocols to communicate with the Brother Print / Fax server. As the default IP address of Brother Print / Fax servers is 192.0.0.192, the Print / Fax server will probably be incompatible with the IP address numbering scheme on your network. If you are not using DHCP, BOOTP or RARP, you will want to change the IP address. There are two ways that you can do this from within BRAdmin.

1. Use the IPX/SPX protocol.
2. Use the TCP/IP protocol and let BRAdmin find the Brother Print / Fax server. Double click the Print / Fax Server you wish to change the IP Address and enter the password.
3. Select the TCP/IP tab and change the IP Address as necessary.

Using DHCP to Configure the IP address

Dynamic Host Configuration Protocol (DHCP) is one of several automated mechanisms for IP address allocation. If you have a DHCP Server in your network (typically a Unix, Windows® NT®/2000 or Novell Netware network) the Print / Fax server will automatically obtain its IP address from DHCP server and register its name with any RFC 1001 and 1002-compliant dynamic name services.



If you do not want your Print / Fax server configured via DHCP, BOOTP or RARP, you must set the BOOT METHOD to static, this will prevent the Print / Fax server from trying to obtain an IP address from any of these systems. To change the BOOT METHOD, use the MFC's front panel, TELNET (using the SET IP METHOD command), Web browser or by using the BRAdmin application.

Using ARP to Configure the Print / Fax server IP Address

If you are unable to use the BRAdmin application, MFC front panel and your network does not use a DHCP server, you can also use the ARP command. ARP is the simplest method of configuring the Print / Fax server IP address. The ARP command is available on Windows® systems that have TCP/IP installed as well as Unix systems. To use arp enter the following command the command prompt:

```
arp -s ipaddress ethernetaddress
```

Where ethernetaddress is the Ethernet address (MAC address) of the Print / Fax server and ipaddress is the IP address of the Print / Fax server. For example:

Windows® Systems

Windows® Systems require the colon ":" character in-between each digit of the Ethernet address.

```
arp -s 192.189.207.2 00:80:77:31:01:07
```

Unix Systems

Typically, Unix systems require the hash "-" character in-between each digit of the Ethernet address.

```
arp -s 192.189.207.2 00-80-77-31-01-07
```



You must be on the same Ethernet segment (that is, there cannot be a router between the Print / Fax server and operating system) to use the arp -s command. If there is a router, you may use BOOTP or other methods described in this chapter to enter the IP address.

If your Administrator has configured the system to deliver IP addresses using BOOTP, DHCP or RARP your Brother Print / Fax server can receive an IP address from any one of these IP address allocation systems, in which case, you will not need to use the ARP command. The ARP command only works once. For security reasons, once you have successfully configured the IP address of a Brother Print / Fax server using the ARP command, you cannot use the ARP command again to change the address. The Print / Fax server will ignore any attempts to do this. If you wish to change the IP address again, use a Web Browser, TELNET (using the SET IP ADDRESS command) the MFC's front panel or factory reset the Print / Fax server (which will then allow you to use the ARP command again).

To configure the Print / Fax server and to verify the connection, enter the following command ping ipaddress where the ipaddress is the IP address of the Print / Fax server.

For example:

```
ping 192.189.207.2
```

Using RARP to Configure the IP Address

Brother Print / Fax server IP address can be configured using the Reverse ARP (rarp) facility on your host computer. This is done by editing the `/etc/ethers` file (if this file does not exist, you can create it) with an entry similar to the following:

```
00:80:77:31:01:07    BRN_310107
```

Where the first entry is the Ethernet address of the Print / Fax server and the second entry is the name of the Print / Fax server (the name must be the same as the one you put in the `/etc/hosts` file).

If the rarp daemon is not already running, start it (depending on the system the command can be `rarpd`, `rarpd -a`, `in.rarpd -a` or something else; type `man rarpd` or refer to your system documentation for additional information). To verify that the rarp daemon is running on a Berkeley UNIX-based system, type the following command:

```
ps -ax | grep -v grep | grep rarpd
```

For AT&T UNIX-based systems, type:

```
ps -ef | grep -v grep | grep rarpd
```

The Brother Print / Fax server will get the IP address from the rarp daemon when it is powered on.

Using BOOTP to Configure the IP Address

BOOTP is an alternative to rarp that has the advantage of allowing configuration of the subnet mask and gateway. In order to use BOOTP to configure the IP address make sure that BOOTP is installed and running on your host computer (it should appear in the /etc/services file on your host as a real service; type `man bootpd` or refer to your system documentation for information). BOOTP is usually started up via the /etc/inetd.conf file, so you may need to enable it by removing the "#" in front of the bootp entry in that file. For example, a typical bootp entry in the /etc/inetd.conf file would be:

```
#bootp dgram udp wait /usr/etc/bootpd bootpd -i
```



Depending on the system, this entry might be called "bootps" instead of "bootp".

In order to enable BOOTP, simply use an editor to delete the "#" (if there is no "#", then BOOTP is already enabled). Then edit the BOOTP configuration file (usually /etc/bootptab) and enter the name, network type (1 for Ethernet), Ethernet address and the IP address, subnet mask and gateway of the Print / Fax server. Unfortunately, the exact format for doing this is not standardized, so you will need to refer to your system documentation to determine how to enter this information (many UNIX systems also have template examples in the bootptab file that you can use for reference). Some examples of typical /etc/bootptab entries include:

```
BRN_310107 1 00:80:77:31:01:07 192.189.207.3
```

and:

```
BRN_310107:ht=ethernet:ha=008077310107:\
ip=192.189.207.3:
```

Certain BOOTP host software implementations will not respond to BOOTP requests if you have not included a download filename in the configuration file; if this is the case, simply create a null file on the host and specify the name of this file and its path in the configuration file.

As with rarp, the Print / Fax server will load its IP address from the BOOTP server when the MFC is powered on.

Changing the IP Address settings with the TELNET Console

You can also use the TELNET command to change the IP address. Using TELNET is effective way, when you change the IP address. But a valid IP address must already be programmed into the Print / Fax server.

If you are using the TELNET, you will be expected to enter the password of the Print / Fax server. Press RETURN and enter the default password of "access" in response to the "#" prompt (it will not echo).

You will be prompted for a user name. Enter anything in response to this prompt.

You will then get the Local> prompt. Type SET IP ADDRESS ipaddress, where ipaddress is the desired IP address you wish to assign to the Print / Fax server (check with your network manager for the IP address to use). For example:

```
Local> SET IP ADDRESS 192.189.207.3
```

You will now need to set the subnet mask by typing SET IP SUBNET subnet mask, where subnet mask is the desired subnet mask you wish to assign to the Print / Fax server (check with your network manager for the subnet mask to use). For example:

```
Local> SET IP SUBNET 255.255.255.0
```

If you do not have any subnets, use one of the following default subnet masks:

255.255.255.0	for class C networks
255.255.0.0	for class B networks
255.0.0.0	for class A networks

The leftmost group of digits in your IP address can identify the type of network you have. The value of this group ranges from 192 through 255 for Class C networks (e.g., 192.189.207.3), 128 through 191 for Class B networks (e.g., 128.10.1.30), and 1 through 127 for Class A networks (e.g., 13.27.7.1).

If you have a gateway (router), enter its address with the command SET IP ROUTER routeraddress, where routeraddress is the desired IP address of the gateway you wish to assign to the Print / Fax server. For example:

```
Local> SET IP ROUTER 192.189.207.1
```

To verify that you have entered the IP information correctly, type SHOW IP.

Type EXIT or CTR-D (i.e., hold down the control key and type "D") to end the remote console session.

Other Sources of Information

Visit <http://solutions.brother.com/> for more information on the TCP/IP protocol.

CHAPTER TWO

Front Panel Setup Menu

LAN Main Setup Menu

The LAN menu selections allow you to setup the Brother MFC for your network and Internet Fax configuration. Press **[Menu]** then press the appropriate number for LAN, based on the selections displayed on your machine. After you have displayed the LAN Main Setup menu, there are five main selections: **1-Setup TCP/IP, 2-Setup Internet, 3-Setup Mail RX, 4-Setup Mail TX, 5-Setup Relay and 6-Setup MISC**. Proceed to the menu selection you wish to configure.

Please note that once you have specified a valid IP address for the machine, it is also possible to configure many aspects of the MFC using your favorite web browser. For added flexibility, the MFC is supplied with the BRAdmin Professional Windows® software, which also can be used to configure many aspects of the NC-8100h.

1-Setup TCP/IP

This menu has eight sections: 1-Boot Method, 2-IP Address, 3-Subnet Mask, 4-Gateway, 5-Host Name, 6-WINS Configuration and 7-WINS Server.

1-BOOT METHOD

1. Press the **[Menu]** button to display the configuration menu.
2. Select LAN.
3. Press **[1]** **[1]**.
4. Press **←** or **→** to select AUTO, STATIC, RARP, BOOTP or DHCP.
5. Press **[Set]** to accept the selection.
6. Press **[Stop/Exit]** to exit the configuration menu.
7. Now make sure that you power cycle the MFC.

STATIC mode

In this mode the MFC IP address must be manually assigned. Once entered the IP address is locked to the assigned address.

AUTO mode

In this mode, the MFC will scan the network for a DHCP server, if it can find one, and if the DHCP server is configured to allocate an IP address to the MFC, then the IP address supplied by the DHCP server will be used. If no DHCP server is available, then the MFC will scan for a BOOTP server. If a BOOTP server is available, and it is configured correctly, the MFC will take its IP address from the BOOTP server. After it is initially powered ON, it may take a few minutes for the MFC to scan the network for a server.



If your MFC supports "POWER SAVE mode" and you are using the AUTO Boot mode, POWER SAVE must be set to OFF.

RARP mode

Brother Print / Fax server IP address can be configured using the Reverse ARP (rarp) facility on your host computer. This is done by editing the /etc/ethers file (if this file does not exist, you can create it) with an entry similar to the following:

```
00:80:77:31:01:07    BRN_310107
```

Where the first entry is the Ethernet address of the Print / Fax server and the second entry is the name of the Print / Fax server (the name must be the same as the one you put in the /etc/hosts file).

If the rarp daemon is not already running, start it (depending on the system the command can be `rarpd`, `rarpd -a`, `in.rarpd -a` or something else; type `man rarpd` or refer to your system documentation for additional information). To verify that the rarp daemon is running on a Berkeley UNIX-based system, type the following command:

```
ps -ax | grep -v grep | grep rarpd
```

For AT&T UNIX-based systems, type:

```
ps -ef | grep -v grep | grep rarpd
```

The Brother Print / Fax server will get the IP address from the rarp daemon when it is powered on.

BOOTP mode

BOOTP is an alternative to rarp that has the advantage of allowing configuration of the subnet mask and gateway. In order to use BOOTP to configure the IP address make sure that BOOTP is installed and running on your host computer (it should appear in the /etc/services file on your host as a real service; type `man bootpd` or refer to your system documentation for information). BOOTP is usually started up via the /etc/inetd.conf file, so you may need to enable it by removing the "#" in front of the bootp entry in that file. For example, a typical bootp entry in the /etc/inetd.conf file would be:

```
#bootp dgram udp wait /usr/etc/bootpd bootpd -i
```



Depending on the system, this entry might be called "bootps" instead of "bootp".

In order to enable BOOTP, simply use an editor to delete the "#" (if there is no "#", then BOOTP is already enabled). Then edit the BOOTP configuration file (usually /etc/bootptab) and enter the name, network type (1 for Ethernet), Ethernet address and the IP address, subnet mask and gateway of the Print / Fax server. Unfortunately, the exact format for doing this is not standardized, so you will need to refer to your system documentation to determine how to enter this information (many UNIX systems also have template examples in the bootptab file that you can use for reference). Some examples of typical /etc/bootptab entries include:

```
BRN_310107 1 00:80:77:31:01:07 192.189.207.3
```

and:

```
BRN_310107:ht=ethernet:ha=008077310107:\
ip=192.189.207.3:
```

Certain BOOTP host software implementations will not respond to BOOTP requests if you have not included a download filename in the configuration file; if this is the case, simply create a null file on the host and specify the name of this file and its path in the configuration file.

As with rarp, the Print / Fax server will load its IP address from the BOOTP server when the printer is powered on.

DHCP mode

Dynamic Host Configuration Protocol (DHCP) is one of several automated mechanisms for IP address allocation. If you have DHCP Server in your network (typically a Unix, Windows® NT®/2000 or Novell Netware network) the Print / Fax server will automatically obtains its IP address from DHCP server and register its name with any RFC 1001 and 1002-compliant dynamic name services.



If you do not want your Print / Fax server configured via DHCP, BOOTP or RARP, you must set the BOOT METHOD to static, this will prevent the Print / Fax server from trying to obtain an IP address from any of these systems. To change the BOOT METHOD, use the print front panel (for those printers that have a LCD panel, TELNET (using the SET IP METHOD command), Web browser or by using the BRAdmin application.

2-IP ADDRESS

1. Press the [Menu] button to display the configuration menu.
2. Select LAN.
3. Press [1] [2].
4. Select [1] to change the IP address—OR—[2] to exit.
5. Enter the IP address.
6. Press [Set] to accept the IP address.
7. Press [Stop/Exit] to exit the configuration menu.

IP ADDRESS

This field displays the current IP address of the MFC. If you have selected a Boot Method of **STATIC**, enter the IP address that you wish to assign to the MFC (check with your network manager for the IP address to use). If you have selected a method other than **STATIC**, the MFC will attempt to determine its IP address using the DHCP or BOOTP protocols. The default IP address of the Brother network board in your MFC will probably be incompatible with the IP address numbering scheme of your network. We recommend that you contact your network manager for an IP address for the network the unit will be connected on.



When the **BOOT METHOD** is set to “**AUTO**”, the MFC cannot receive IP address from a BOOTP server in Windows® 2000. So please ensure that you use DHCP for Windows® 2000 server.

3-SUBNET MASK

1. Press the [Menu] button to display the configuration menu.
2. Select LAN.
3. Press [1] [3].
4. Select [1] to change the Subnet Mask—OR—[2] to exit.
5. Enter the Subnet Mask address.
6. Press [Set] to accept the IP address.
7. Press [Stop/Exit] to exit the configuration menu.

SUBNET Mask

This field displays the current subnet mask used by the MFC. If you are not using DHCP or BOOTP to obtain the subnet mask, enter the desired subnet mask. Check with your network manager for the subnet mask to use.

4-GATEWAY

1. Press the [Menu] button to display the configuration menu.
2. Select LAN.
3. Press [1] [4].
4. Select [1] to change the Gateway—OR—[2] to exit.
5. Enter the Gateway address.
6. Press [Set] to accept the selection.
7. Press [Stop/Exit] to exit the configuration menu.

GATEWAY

This field displays the current gateway or router address used by the MFC. If you are not using DHCP or BOOTP to obtain the gateway or router address, enter the address you wish to assign. If you do not have a gateway or router, leave this field blank. Check with your network manager if you are unsure.

5-HOST NAME

1. Press the [Menu] button to display the configuration menu.
2. Select LAN.
3. Press [1] [5].
4. Select [1] to change the Host Name—OR—[2] to exit.
5. Enter the Host Name.
6. Press [Set] to accept the selection.
7. Press [Stop/Exit] to exit the configuration menu.

HOST NAME

You can register the machine name on the Network. This name is often referred to as a NetBIOS name; it will be the name that is registered by the WINS server on your network. Brother recommends the name BRN-XXXXXX (where XXXXXX is the last six digits of the Ethernet address) (up to 15 characters).

6-WINS Configuration

1. Press the [Menu] button to display the configuration menu.
2. Select LAN.
3. Press [1] [6].
4. Press ◀ or ▶ to select AUTO, or STATIC.
5. Press [Set] to accept the selection.
6. Press [Stop/Exit] to exit the configuration menu.

WINS Configuration

This selection controls how the MFC obtains the IP address for the WINS Server.

AUTO

Automatically uses a DHCP request to determine the IP addresses for the primary and secondary WINS servers. You must set the Boot Method to Auto for this feature to work.

STATIC

Uses a specified IP address for the primary and secondary WINS servers.

OFF

Disables WINS resolution.

7-WINS SERVER

1. Press the [Menu] button to display the configuration menu.
2. Select LAN.
3. Press [1] [7].
4. Press ◀ or ▶ to select the Primary or secondary WINS Server.
5. Press [Set] to accept the selection.
6. Select [1] to change the WINS Server address—OR—[2] to exit.
7. Enter the WINS Server address.
8. Press [Set] to accept the selection.
9. Press [Stop/Exit] to exit the configuration menu.

PRIMARY WINS Server IP Address

This field specifies the IP address of the primary WINS (Windows® Internet Naming Service) server. If set to a non-zero value, the machine will contact this server to register its name with the Windows® Internet Name Service.

SECONDARY WINS Server IP Address

This field specifies the IP address of the secondary WINS server. It is used as a backup to the Primary WINS server address. If the Primary server is unavailable, the MFC still can register itself with a secondary server. If set to a non-zero value, the machine will contact this server to register its name with the Windows® Internet Name Service. If you have a primary WINS server, but no secondary WINS server, simply leave this field blank.

8-DNS SERVER

1. Press the [Menu] button to display the configuration menu.
2. Select LAN.
3. Press [1] [8].
4. Press ◀ or ▶ to select the Primary or secondary DNS Server.
5. Press [Set] to accept the selection.
6. Select [1] to change the DNS Server address—OR—[2] to exit.
7. Enter the DNS Server address.
8. Press [Set] to accept the selection.
9. Press [Stop/Exit] to exit the configuration menu.

PRIMARY DNS Server IP Address

This field specifies the IP address of the primary DNS (Domain Name Service) server.

SECONDARY DNS Server IP Address

This field specifies the IP address of the secondary DNS server. It is used as a backup to the Primary DNS server address. If the Primary server is unavailable, the MFC will contact the Secondary DNS server.

2-Setup Internet

This menu has five selections: 1- Mail Address, 2-SMTP Server, 3-POP3 Server, 4-Mailbox Name and 5-Mailbox PWD. You may find that it is more convenient to use your favorite web browser to configure these settings.

1-MAIL ADDRESS

1. Press the [Menu] button to display the configuration menu.
2. Select LAN.
3. Press [2] [1].

Refer to the following table (only for MFC-9700):

Key	Once	Twice	Three times	Four times
1	@	.	/	1
2	A	B	C	2
3	D	E	F	3
4	G	H	I	4
5	J	K	L	5
6	M	N	O	6
7	P	Q	R	S
8	T	U	V	8
9	W	X	Y	Z

If you want to enter a blank space, press ➡ twice.

To change the mode between upper case and lower case for entering the e-mail / I-Fax address press [▼ Shift] and [3].

Refer to the following table (for other models):

One Touch Dial Key Alphabet Conversion Table			
01 - a	02 - b	03 - c	04 - d
17 - q	18 - r	19 - s	20 - t
05 - e	06 - f	07 - g	08 - h
21 - u	22 - v	23 - w	24 - x
09 - i	10 - j	11 - k	12 - l
25 - y	26 - z	27 - .	28 - @
13 - m	14 - n	15 - o	16 - p
29 - space	30 - [special]	31 - [symbols]	32 - a<->A

Making corrections:

If you entered a letter incorrectly and want to change it, press ⬅ to move the cursor after the last correct letter. Then re-enter the correct text and/or digits. You can also back up and type over incorrect letters.

Repeating letters:

If you need to enter a character assigned to the same key as the previous character, press ➡ to move the cursor to the right.

Special characters and symbols (only for MFC-9700):

Press * for (space) ! “ # \$ % & ' () * + , - . /

Press # for : ; < = > ? @ [] ^ _

Press Ø for • À È Ê Î Ç Ë Ö 0

As you enter the E-mail address, it will appear character by character on the LCD panel.

If you specify more than 16 characters, the LCD panel will scroll the name to the left, character by character. You can enter up to 60 characters.

Please note that also you can connect to the MFC using a web browser and specify the E-mail address information through Web Based Management.

4. Press [Set] to accept the selection.
5. Press [Stop/Exit] to exit the configuration menu.

2-SMTP SERVER

1. Press the [Menu] button to display the configuration menu.
2. Select LAN.
3. Press [2] [2].
4. Select [1] to change the SMTP SERVER Address—OR—[2] to exit.
5. Select [1] IP ADDRESS or [2] NAME to select the method of the entering the SMTP SERVER Address.
6. Enter the SMTP SERVER Address.
7. Press [Set] to accept the selection.
8. Press [Stop/Exit] to exit the configuration menu.

SMTP SERVER Address

This field displays the Host Name or IP address of an SMTP mail server (outgoing E-mail Server) on your network.

(Ex, mailhost.brothermail.net -or- 192.000.000.001)

3-POP3 SERVER

1. Press the [Menu] button to display the configuration menu.
2. Select LAN.
3. Press [2] [3].
4. Select [1] to change the POP3 Server Address—OR—[2] to exit.
5. Select [1] IP ADDRESS or [2] NAME to select the method of the entering the POP3 Server Address.
6. Enter the POP3 Server Address.
7. Press [Set] to accept the selection.
8. Press [Stop/Exit] to exit the configuration menu.

POP3 SERVER address

This field displays the Host Name or IP address of the POP3 server (incoming E-mail server) used by the Brother MFC. This address is necessary for the Internet Fax features to function correctly.

(Ex, mailhost.brothermail.net -or- 192.000.000.001)

4-MAILBOX NAME

1. Press the [Menu] button to display the configuration menu.
2. Select LAN.
3. Press [2] [4].
4. Select [1] to change the Mailbox Name—OR—[2] to exit.
5. Enter the user account name assigned to the Brother MFC to login to the POP3 Server.
6. Press [Set] to accept the selection.
7. Press [Stop/Exit] to exit the configuration menu.

5-MAILBOX PWD

1. Press the [Menu] button to display the configuration menu.
2. Select LAN.
3. Press [2] [5].
4. Select [1] to change the Mailbox password—OR—[2] to exit.
5. Enter the user password assigned to the MFC to login to the POP3 Server. Please note that this password is case sensitive.
6. Press [Set] to accept the selection.
7. Press [Stop/Exit] to exit the configuration menu.

3-Setup Mail RX

This menu has Five selections 1-Auto Polling, 2-Poll Frequency, 3-Header, 4-Del Error Mail and 5-Notification.

1-AUTO POLLING

1. Press the [Menu] button to display the configuration menu.
2. Select LAN.
3. Press [3] [1].
4. Press ◀ or ▶ to select On or OFF.
5. Press [Set] to accept the selection.
6. Press [Stop/Exit] to exit the configuration menu.

AUTO POLLING

When set to ON the MFC automatically will check the POP3 server for new messages. “NO MAIL” will be displayed if there are no E-mail messages when the POP3 server is polled.

2-POLL FREQUENCY

1. Press the [Menu] button to display the configuration menu.
2. Select LAN.
3. Press [3] [2].
4. Enter the polling frequency.
5. Press [Set] to accept the selection.
6. Press [Stop/Exit] to exit the configuration menu.

POLLING FREQUENCY

Sets the interval for checking for new messages on the POP3 server (default is 10min).

3-HEADER

1. Press the [Menu] button to display the configuration menu.
2. Select LAN.
3. Press [3] [3].
4. Press ◀ or ▶ to select SUBJECT+FROM+TO or ALL or NONE.
5. Press [Set] to accept the selection.
6. Press [Stop/Exit] to exit the configuration menu.

HEADER

This selection allows the contents of the mail header to be printed when the received message is printed (Subject+From+To or All or NONE).

4-DEL ERROR MAIL

1. Press the [Menu] button to display the configuration menu.
2. Select LAN.
3. Press [3] [4].
4. Press ◀ or ▶ to select ON or OFF.
5. Press [Set] to accept the selection.
6. Press [Stop/Exit] to exit the configuration menu.

DELETE ERROR MAIL

When set to ON, the MFC automatically deletes error mails that the MFC can not receive from the POP server.

5-NOTIFICATION

1. Press the [Menu] button to display the configuration menu.
2. Select LAN.
3. Press [3] [5].
4. Press ◀ or ▶ to select ON or MDN or OFF.
5. Press [Set] to accept the selection.
6. Press [Stop/Exit] to exit the configuration menu.

NOTIFICATION

Notification feature allows a receive notification message to be transmitted to the sending station to indicate successful reception of the I-Fax.

“ON” send notification mail to all I-Fax machines only sends an e-mail to I-Fax that supports the “MDN” specification.

4-Setup Mail TX

This menu has three selections 1-Sender Subject, 2-Size Limit and 3-Notification.

1-SENDER SUBJECT

1. Press the [Menu] button to display the configuration menu.
2. Select LAN.
3. Press [4] [1].
4. Select [1] to change the Sender Subject—OR—[2] to exit.
5. Enter the subject information.
6. Press [Set] to accept the selection.
7. Press [Stop/Exit] to exit the configuration menu.

SENDER SUBJECT

This field displays the subject that is attached to the Internet Fax data being sent from the Brother MFC to a PC (default is “Internet FAX Job”).

2-SIZE LIMIT

1. Press the [Menu] button to display the configuration menu.
2. Select LAN.
3. Press [4] [2].
4. Press ◀ or ▶ to select ON or OFF.
5. Press [Set] to accept the selection.
6. Press [Stop] to exit the configuration menu.

SIZE LIMIT

Some E-mail servers do not allow you to send large E-mail documents. The MFC may display “Out of Memory” when trying to send E-mail documents (the System Administrator will often place a limit on the maximum E-mail size). With this function enabled, the MFC will display “Out of Memory” when trying to send E-mail documents over 1Mbyte in size. The document will not be sent and an error report will be printed. The document you are sending should be separated into smaller documents that will be accepted by the mail server. (Ex. A 42 page document of the CCITT#1 test chart is approximately 1Mbyte in size).

3-NOTIFICATION

1. Press the [Menu] button to display the configuration menu.
2. Select LAN.
3. Press [4] [3].
4. Press ◀ or ▶ to select ON or OFF.
5. Press [Set] to accept the selection.

Press [Stop] to exit the configuration menu.

Notification feature when switched to “ON” sends two fields of data in addition to the image data which requests a notification from the receiving station for successful reception. The receiving I-Fax station must support the “MDN” standard in order to be able to understand the request and consequently submit a notification message confirming successful receipt of the I-Fax.

5-Setup Relay

This menu has three selections 1-RLY Broadcast, 2-Relay Domain and 3-Relay Report. For details on Relay Broadcast refer to Chapter3, How to use the Web-Based Management Utility or Chapter 4 Internet Fax.

1-RLY BROADCAST

1. Press the [Menu] button to display the configuration menu.
2. Select LAN.
3. Press [5] [1].
4. Press ◀ or ▶ to select ON or OFF.
5. Press [Set] to accept the selection.
6. Press [Stop/Exit] to exit the configuration menu.

RELAY BROADCAST

This function allows the MFC to receive a document over the Internet, and then relay it to other fax machines through conventional analog landlines.

2-RELAY DOMAIN

1. Press the [Menu] button to display the configuration menu.
2. Select LAN.
3. Press [5] [2].
4. Press ◀ or ▶ to select the Relay Domain (01 – 10).
5. Press [Set] to accept the selection.
6. Enter the Relay Domain name for the Domain that is being allowed to request a Relay Broadcast.
7. Press [Set] to accept the selection.
8. Press [Stop/Exit] to exit the configuration menu.

RELAY DOMAIN

You can register the Domain Names (Max.10) that are allowed to request a Relay Broadcast.

3-RELAY REPORT

1. Press the [Menu] button to display the configuration menu.
2. Select LAN.
3. Press [5] [3].
4. Press ◀ or ▶ to select ON or OFF.
5. Press [Set] to accept the selection.

Relay Broadcast Report can be printed at the MFC used as the Relay Station for all Relay Broadcasts. Also, when the MFC is used with the Brother Network PC Fax software the MFC is acting as a Relay Station for fax transmissions from the network so a Relay Report can also be printed for confirmation of sent network faxes.

Its primary function is to print reports of Relay Broadcasts from external sources through the MFC. Please note that this is not possible without the consent of the Relaying Station as permission in the form of Relay Domain has to be given to external parties.

6-Setup Misc.

1-NETWARE

You can select to switch the NetWare feature “ON”, this allows you specify the Frame Type is item 2.

1. Press the [Menu] button to display the configuration menu.
2. Select LAN.
3. Press [6] [1].
4. Press ◀ or ▶ to select ON or OFF.
5. Press [Set] to accept the selection.

2-NET FRAME

1. Press the [Menu] button to display the configuration menu.
2. Select LAN.
3. Press [6] [2].
4. Press ◀ or ▶ to select AUTO/802.3/ENET/802.2/SNAP.
5. Press [Set] accept the selection.

AUTO sets the Frame type to automatic, the network card will detect the frame type being used by the NetWare server (Recommended).

802.3 sets the Frame type to Ethernet 802.3

ENET sets the Frame Type to Ethernet II

802.2 sets the Frame type to Ethernet 802.2

SNAP sets the Frame type to Ethernet SNAP

* NET Frame Setting is available when NetWare is “ON”

3-APPLETALK

1. Press the [Menu] button to display the configuration menu.
2. Select LAN.
3. Press [6] [3].
4. Press ◀ or ▶ to select ON or OFF.
5. Press [Set] accept the selection.

AppleTalk protocol is used with Macintosh Networks. If you are your MFC on a Macintosh network please select to ON.

4-DLC/LLC

1. Press the [Menu] button to display the configuration menu.
2. Select LAN.
3. Press [6] [4].
4. Press ◀ or ▶ to select ON or OFF.
5. Press [Set] accept the selection.

5-NETBIOS/IP

1. Press the [Menu] button to display the configuration menu.
2. Select LAN.
3. Press [6] [5].
4. Press ◀ or ▶ to select ON or OFF.
5. Press [Set] accept the selection.

The NC-8100h Print / Fax Server supports SMB (Server Message Block) over the TCP/IP protocol via the NetBIOS interface. This means that just like regular Windows® PC's the Brother MFC can appear in your network neighborhood. The main advantage of NetBIOS printing is that you are able to print from legacy DOS applications that are running on PC's that are connected to Microsoft networks.

6-ETHERNET

1. Press the [Menu] button to display the configuration menu.
2. Select LAN.
3. Press [6] [6].
4. Press ◀ or ▶ to select AUTO/100B-FD/100B-HD/10B-FD/10B-HD.
5. Press [Set] accept the selection.

Ethernet link mode. Auto allows the print server to operate in 100BaseTX full or half duplex, or in 10BaseT half duplex mode by auto negotiation. 100BaseTX Full Duplex (100B-FD) or Half Duplex (100B-HD) and 10BaseT Full Duplex (10B-FD) or Half Duplex (10B-HD) fix the print server link mode. This change is valid after the print server has been reset. NOTE: if you incorrectly set this value, you may not be able to communicate with your print server.

7-TIME ZONE

1. Press the [Function/Menu] button to display the configuration menu.
2. Select LAN.
3. Press [6] [7].
4. Press ◀ or ▶ to set the time.
5. Press [Set] to accept the selection.
6. Press [Stop] to exit the configuration menu.

TIME ZONE

This field displays the time zone you can set for your country. The time is the difference between your location and Greenwich Mean Time. This time will be shown on documents received via the Internet. For example the Time Zone for Eastern Time in the USA and Canada is GMT-05:00. You can determine the time difference for you location by using the Time Zone setting in Windows®. Windows® Time Zone Setting:

1. Click on Start.
2. Select Settings / Control Panel.
3. Double click on Date/Time.
4. Select Time Zone.

Verify your time zone setting from the pull-down menu (this menu displays the time difference from GMT).

User Setting List

1. Press the [Reports] button.
2. Select USER SETTINGS/SYSTEM SETUP.
3. Press [Start/Exit] to print the report.

This feature prints a report listing all the current user settings. The NC-8100h Print / Fax Server Settings will be printed on the second page of the report.

Other Sources of Information

For more information of this chapter please visit <http://solutions.brother.com/>

CHAPTER THREE

Web Based Management

How to Use the Web-Based Management Utility

Overview

The Web Based Management utility provides easy management and status information for your Brother MFC.

A standard World Wide Web Browser (we recommend Netscape Navigator version 4.xx /Microsoft Internet Explorer version 4.xx a or later) can be used to manage your Brother MFC using the HTTP (Hyper-Text Transfer Protocol).

The following are the main features of the Web Based Management utility:

1. Machine status information.
2. Change Fax configuration items, such as Initial Setup, One Touch Dial settings and Remote Fax.
3. You can also change network settings such as TCP/IP information, Internet Fax address information, etc.



You must use the TCP/IP protocol on your network and have a valid IP address programmed into the Brother MFC.

How to Connect Using a Browser

Type the IP address of the Brother MFC into your Web browser (Ex. <http://192.189.207.3>). You can also use the NetBIOS name (Host Name) of the Brother network board if you are in Microsoft Windows® domain/Workgroup environment (WINS Config/WINS Server must already be set).

If your MFC supports English, French, German, Dutch, Italian or Spanish, you must set the same language in your Web Browser. If your MFC does not support these languages set your Web Browser for English.

Password Information

Important Information:

Login names are not changeable. Login names and passwords are both case sensitive.

Web Based Management offers two levels of password access. Users are able to access to the General Setup, Fax settings, I-Fax Settings and Lists and Reports. The default user name for Users is **user** and the default password is **access**.

Administrators are able to access all settings. The login name for the Administrator is **admin** and the default password is **access**.

Other Sources of Information

The key information relating to Web Based Management differs slightly depending on the model number of your MFC. For further detailed description of this chapter please visit <http://solutions.brother.com/>

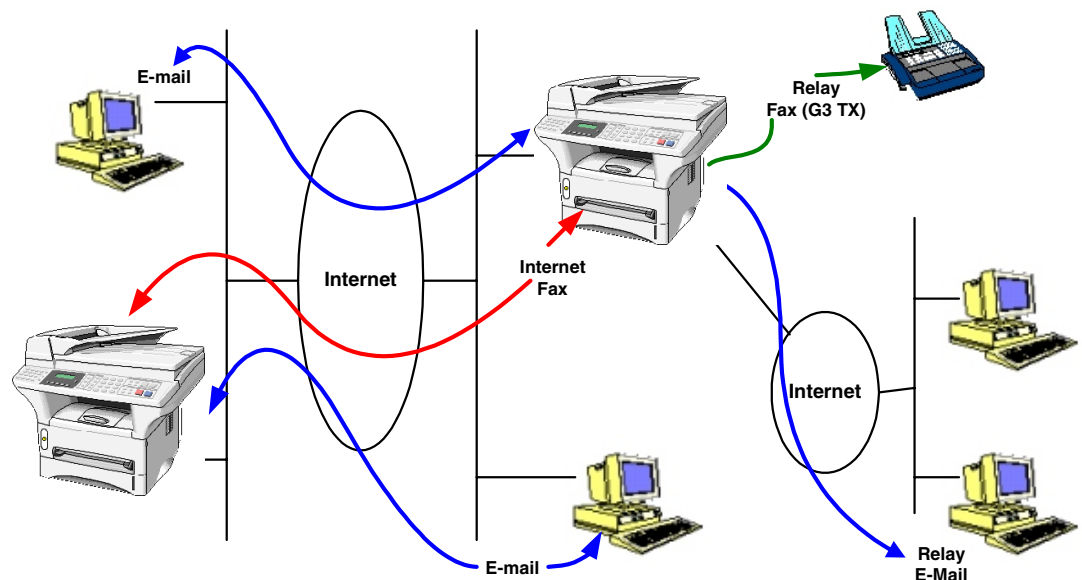
Refer to chapter 1 of this user guide to learn how to configure the IP address of the printer.

CHAPTER FOUR

Internet FAX

Overview

Internet Faxing (I-FAX) allows you to send and receive FAX documents using the Internet as the transport mechanism. Documents are transmitted in E-mail messages as attached TIFF-F files. This means that PC's are also able to receive and send documents, providing that the PC has as an application that can generate and view TIFF-F files, you can use Microsoft® Imaging or A TIFF-F viewer application [Pagis Viewer 2.0] is available as a download from the Brother Web site (<http://www.brother.com>). Any documents sent via the MFC will automatically be converted into a TIFF-F format. If you wish to send and receive messages to and from your MFC, your mail application on the PC must be able to support the MIME format.



Getting Connected

Before sending or receiving an Internet Fax you must configure your Brother MFC to communicate with your network and mail server. You must ensure the following: a correctly configured IP address for your MFC, an E-mail address for your MFC, the mail server(s) IP address, mailbox name and password for your Brother MFC. If you are unsure of any of these items, please contact your systems administrator. For details of how to configure this information, refer to the Web Based Management section (Internet Settings) of this User's Guide.

Front Panel Key Functions

Shift + [1]

Used to change input mode. You can use Dial Pad keys as Standard alphabet character keys.

Dial Pad

Used to enter Standard Alpha characters (26 letters), as well as @ . space ! " # % & ' () + / : ; < > = ? [] ^ _ \$, * , _ and Numbers.

Shift + [3]

To change between upper case and lower case for entering the e-mail / I-Fax address.

← or →

Moves the LCD cursor to the left or right.

Set

Used to store multiple numbers.

Fax Start

Begins transmitting the document.

Stop/Exit

Deletes entered data and stops the scanning or transmitting process.

One Touch Dial / Speed Dial / Tel Index / Group Dial

These functions work the same way as with conventional MFC's. However, please note that you cannot use chain dialling for E-mail addresses.

Shift + Start

Used to receive E-mail from the POP3 server manually.

Sending an Internet Fax

1. Set the document that you wish to send into the auto feeder of the Brother MFC.



When using the MFC over a network, documents will be transmitted and printed in Standard or Fine mode (i.e. 200×100 / 200×200 DPI). Even if you select S. Fine mode or Photo mode, your document always will be transmitted in Fine mode.

2. Press the Scan to E-mail button on the control panel of the MFC. The display will alternate between
 1. Connect to PC
 2. Connect to LAN

Select the number for your preferred connection and press the “Set” key. A submenu appears on the LCD so you can select the resolution and the scan to format. Use the arrow keys to scroll through the options.

- | | |
|-----------------|------------------------------|
| 1. B/W STD | (200×100dpi Black and White) |
| 2. B/W FINE | (200×200dpi Black and White) |
| 3. COLOR STD | (150×150dpi Color) |
| 4. COLOR FINE | (300×300dpi Color) |
| 5. COLOR S.FINE | (600×600dpi Color) |

* MFC-9660 doesn't include 3-5.

Select the number for your preferred resolution and format and press the “Set” key.

A method is available for already programmed One Touch or Speed Dial locations.

If you have already programmed this information into the MFC as a One Touch or Speed Dial, simply select the appropriate Dial location and press “Fax Start”.

To manually enter the address, continue to the following step.

Entering Text

Press [1], while holding down [▼ Shift] to change into the "alphabet" dialling mode.

MFC-9700:

You can now use the Dial Pad to dial the E-mail address. Refer to the following table: Most number keys have three or four letters printed above them. The keys for 0, #, * don't have printed letters because they are used for special characters. By pressing the appropriate number key the correct number of times, you can access the character you want.

Key	Once	Twice	Three times	Four times
1	@	.	/	
2	A	B	C	2
3	D	E	F	3
4	G	H	I	4
5	J	K	L	5
6	M	N	O	6
7	P	Q	R	S
8	T	U	V	8
9	W	X	Y	Z

Other models:

You can now use the One-Touch Dial keys to dial the E-mail address. Refer to the following table:

One Touch Dial Key Alphabet Conversion Table			
01 - a	02 - b	03 - c	04 - d
17 - q	18 - r	19 - s	20 - t
05 - e	06 - f	07 - g	08 - h
21 - u	22 - v	23 - w	24 - x
09 - i	10 - j	11 - k	12 - l
25 - y	26 - z	27 - .	28 - @
13 - m	14 - n	15 - o	16 - p
29 - space	30 - [special]	31 - [symbols]	32 - a<->A

If you want to enter a blank space, press ➡ twice.

To change the mode between upper case and lower case for entering the e-mail / I-Fax address press [▼ Shift] and [3].

If you specify more than 16 characters, the LCD panel will scroll the name to the left character by character. You can enter up to 60 characters.

Making corrections:

If you entered a letter incorrectly and want to change it, press ⬅ to move the cursor after the last correct letter. Then re-enter the correct text and/or digits. You can also back up and type over incorrect letters.

Repeating letters:

If you need to enter a character assigned to the same key as the previous character, press ➡ to move the cursor to the right.

Special characters and symbols (only for MFC-9700):

Press * for (space) ! " # \$ % & ' () * + , - . /

Press # for : ; < = > ? @ [] ^ _

Press Ø for • À È Ê Î Ç Ë Ö 0

As you enter the Internet Fax address, it will appear character by character on the LCD panel.

If you specify more than 16 characters, the LCD panel will scroll the name to the left character by character. You can enter up to 60 characters.

3. Press [Fax Start] to send the document.

After the document is scanned, it is transmitted to the Recipient Internet Fax Machine automatically via your SMTP server. You can cancel the send operation by pressing the [Stop] button during scanning. After the transmission is finished, the machine will return to standby mode.



Some E-mail servers do not allow you to send large E-mail documents (the System Administrator will often place a limit on the maximum E-mail size). You can enable the Limit Size of the Sent Mail feature. The machine will display “Out of Memory” when trying to send E-mail documents over 1Mbyte in size. The document will not be sent and an error report will be printed. The document you are sending should be separated into smaller documents that will be accepted by the mail server. You can turn on this feature through the Web Management utility or the LAN function mode.

Using Scan to E-mail

Scan to E-mail gives users the capability of scanning documents directly from the MFC to E-mail accounts anywhere in the world in either black and white (Mono) or color. The documents arrive in the E-mail inbox as file attachments. They can be viewed using Microsoft® Imaging supplied with the Windows® Operating Systems. Alternatively there is a viewer supplied on the CD-ROM of your MFC.

Before attempting to Scan to E-mail please see Getting Connected on Page 2.

The method of sending documents with Scan to E-mail is the same as sending an Internet Fax as described above on Page 3.

When using Mono Scan to E-mail, documents will be transmitted in TIFF-F file format at Standard or Fine mode (i.e. 200 × 100 / 200 × 200DPI). Even if you select S. Fine mode or Photo mode, your document always will be transmitted in Fine mode always will be transmitted in Fine mode.

Important Information.

When sending multi page data as a color JPEG the pages appear as separate JPEG attachments to the E-mail.

When using Color Scan to E-mail, documents can be transmitted as JPEG images in different resolutions 150×150dpi (Standard), 300×300dpi (Fine) or 600 × 600dpi (Super Fine) by the method described above.

Some E-mail servers do not allow you to send large E-mail documents (the System Administrator will often place a limit on the maximum E-mail size). You can enable the Limit Size of the Sent Mail feature. The machine will display “Out of Memory” when trying to send E-mail documents over 1Mbyte in size. The document will not be sent and an error report will be printed. The document you are sending should be separated into smaller documents that will be accepted by the mail server. You can turn on this feature through the Web Management utility or the LAN function mode.

Receiving E-mail or Internet Fax

There are 2 ways you can receive E-mail messages:

- POP3 receiving at regular intervals
- POP3 receiving (manually initiated)

Using POP3 receiving the MFC machine must poll the E-mail server to receive the print jobs. This polling can occur at set intervals (for example, you can configure the MFC to poll the E-mail server at 10 minute intervals) or you can manually poll the server by pressing the Shift + Start button.

If your MFC starts to receive E-mail print jobs, the LCD panel will reflect this activity. For example, you will see "RECEIVING" on the LCD panel followed by "xx MAIL(S)". If you press the Shift + Start buttons to manually poll the E-mail server for E-mail print jobs and there are no mail documents waiting to be printed, the MFC will display "NO MAIL" on the LCD panel for two seconds.

If your machine is out of paper when receiving data, the received data will be held in the MFC's memory. This data will be printed automatically after paper is re-inserted into the machine. Memory receive must be switched "ON".

If the received mail is not in a plain text format or an attached file is not in the TIFF-F format, the following error message will be printed: "ATTACHED FILE FORMAT NOT SUPPORTED. FILE NAME:XXXXXX.doc" If the received mail is too large, the following error message will be printed: "E-MAIL FILE TOO LARGE." If "Delete POP Receive Error Mail" is "ON" (default) then error mail is automatically deleted from the E-mail Server.

Receiving an Internet Fax to a PC

When a PC receives an Internet Fax document, the document is attached to a mail message that informs the PC that it is receiving a document from an Internet Fax. This is notified in the Subject field of the received mail message.

If the PC to which you wish to send a document is not running Windows® 95/98/98SE/Me or Windows® NT® 4.0/2000 operating system, please inform the PC's owner that software must be downloaded for documents in the TIFF-F format to be viewed.



You can download a TIFF-F viewer from the Brother Web site (<http://www.solutions.brother.com>). You can also use “Microsoft® Imaging” that is supplied with Windows® 95/98/Me or Windows® NT® 4.0/2000 but some older versions of Windows® 95 do not support viewing TIFF-F documents.

Forwarding Received E-mail and Fax Messages

You can forward received E-mail or standard fax messages to another E-mail address or fax machine. Received messages can be forwarded via E-mail to a PC or Internet Fax. They can also be forwarded via standard phone lines to another MFC.

Please see your MFC User guide to check that this feature is supported. This function is only for monochrome models.

This can be done using the Web Management Utility or through the front panel. The steps for configuring Fax Forward can be found in the User Guide supplied with your MFC.

Relay Broadcasting

This function allows the Brother MFC to receive a document over the Internet, and then relay it to other fax machines through conventional telephone lines.

If you wish to use your MFC as a relay broadcast device, you must specify the domain name that you trust at the MFC, in other words, the portion of the domain after the '@' sign.

A trusted domain refers to the E-mail address. For example, if your address is bob@brothernjk.com, then we identify the domain as brothernjk.com. If your E-mail address is jack@brothernjk.com, then we identify the domain as brothernjk.com.

Use care in selecting a trusted domain since any user on a trusted domain will be able to send a Relay Broadcast.



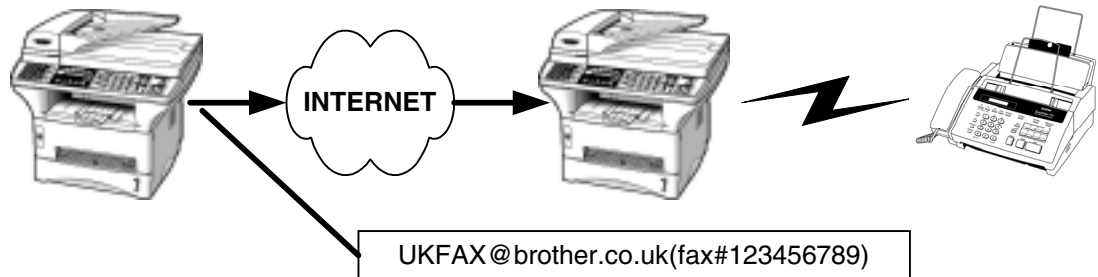
Relay Broadcast can support the relay of a document up to a maximum of 48 Fax machines through conventional telephone lines.

This function is only for monochrome models.

Relay Broadcast from a MFC

FAX@brother.com
123456789

UKFAX@brother.co.uk



Your MFC has an E-mail address of FAX@brother.com, you wish to send a document from this machine to another MFC in England with an E-mail address of UKFAX@brother.co.uk, this machine will then forward the document to a standard FAX machine using a conventional telephone line. If your E-mail address is FAX@brother.com, you must configure a trusted domain name of brother.com on the machine in England that will broadcast the document to the conventional FAX machine. If you do not enter the domain name information, then the machine in the middle (the machine that will broadcast the document) will not trust any internet jobs that it receives from the MFC machine in the @brother.com domain.

After the trusted domain is set you can send the document from your MFC [I.E. FAX@brother.com] by entering the E-mail address of the MFC [I.E. UKFAX@brother.co.uk] that will forward the document followed by the phone number of the fax that will receive the document. The following is an example of how to enter the E-mail address and phone number.

UKFAX@brother.co.uk(fax#123456789)

E-mail address

Fax Phone Number

The word "fax#" must be included with the phone number inside the parenthesis.

Sending to multiple phone numbers:

If you want to have the document relayed to more than one standard Fax machine the address can be entered using the following method:

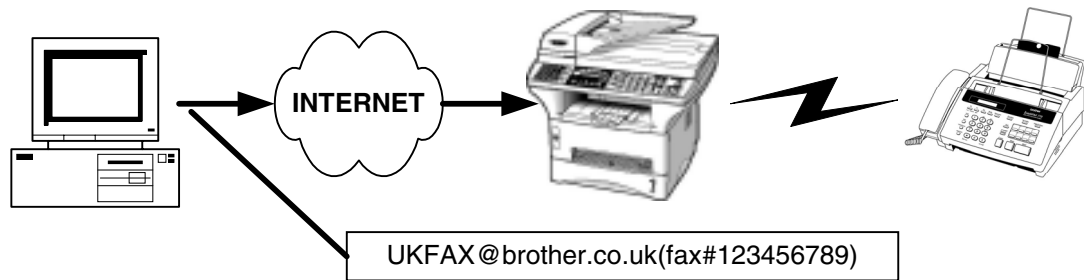
1. Enter the phone number of the first Fax machine
UKFAX@brother.co.uk(Fax#123).
2. Press the "Set" key.
3. Enter the phone number of the second Fax machine
UKFAX@brother.co.uk(Fax#456).
4. Press the "Start" key.

You can also store the address information in One-Touch Dial. For example: Store UKFAX@brother.co.uk(Fax#123) in One-Touch Dial key 01 and store UKFAX@brother.co.uk(Fax#456) in One-Touch Dial key 02. You can then press the One-Touch Dial Key for each number instead on entering each individual number.

Relay Broadcast from a PC

Your PC
123456789

UKFAX@brother.co.uk



You can also send E-mail from your PC and have it relayed to a conventional FAX machine. The method of entering the phone number of the conventional FAX machine that will receive the relayed E-mail will vary depending on the mail application you are using. The following are some examples of different mail applications:



Some E-mail applications do not support sending to multiple phone numbers. If your E-mail application cannot support multiple phone numbers you will only be able to relay to one Fax machine at a time.

Outlook 97/98 & 2001 / Outlook Express / Internet Explorer 4 & 5/ Netscape Communicator 4.5/ Eudora Ver 4.x and Pegasus (for Europe):

Enter the address of the relay MFC and phone number of the FAX in the “TO” box using the same method used when sending from an MFC.

UKFAX@brother.co.uk(fax#123456789)

TX Verification Mail

Transmission Verification Mail supports two separate functions. Verification Mail for sending allows you request notification from the receiving station that the I-Fax or E-mail was received and processed. Verification Mail for receiving allows you to transmit a default report back to the sending station after successfully receiving and processing an I-Fax or E-mail.

To use this feature you must set the “Notification” option within the “Setup Mail RX” and “Setup Mail TX” options.

Setup Mail (TX)

You can set the “Notification” option in the “Setup Mail TX” option to either ON or OFF. When switched to ON an additional field of information is sent with the image data. This field is named “MDN”.

MDN

Mail Disposition Notification – This field requests the status of the I-Fax / E-mail message after delivery through the SMTP (send mail transfer protocol) transport system. Once the message has arrived at the Receiving station this data is used when the MFC or user reads or prints the received I-Fax or E-mail. For example, if the message is opened for reading or is printed the receiving station sends back a notification to the original sending machine or user.

The receiving station must support the MDN field in order to be able to send a notification report, otherwise the request will be ignored.

Setup Mail (RX)

There are three possible settings for this option ON/MDN/OFF.

Receive Notification “ON”

When switched to “ON” a fixed message is sent back to the sending station to indicate successful reception and processing of the message. These fixed messages depend on the operation requested by the sending station.

Report messages consist of

SUCCESS:

or

FAILURE:

Receive Notification “MDN”

When switched to “MDN” a report as described above is sent back to the sending station if the originating station sent the “MDN” field to request confirmation.

Receive Notification “OFF”

OFF – Switches all forms of receive notification OFF, no messages are send back to the sending station regardless of the request.

Error mail

If there is a mail delivery error while sending an Internet Fax, the mail server will send an error message back to the MFC and the error message will be printed. If there is an error while receiving mail, an error message will be printed (Example: “The message being sent to the MFC was not in a TIFF-F format.”).

Important information on Internet Fax

Internet Fax Communication on a LAN system is basically the same as communication via E-mail; however, it is different from Fax communication using standard phone lines. The following is important information for using Internet Fax:

- Factors such as the receiver’s location, structure of the LAN system, and how busy the circuit (such as the internet) is, may cause the system to take a long time to send back an error mail. (normally 20 sec to 30 sec).
- In the case of transmission through the Internet, due to its low level of security, we recommend that you use standard phone lines to send confidential documents.
- If the receiver’s mail system is not compatible with the MIME format, you cannot transmit a document to the receiver. Depending on receiver’s server, there may be some cases in which the error mail will not be sent back.
- If the size of a document’s image data is huge, there is a possibility of unsuccessful transmission.
- You cannot change font and character size of Internet mail that you received.

Other Sources of Information

Visit <http://solutions.brother.com/> for more information on network scanning and Internet Fax frequently asked questions.

Refer to chapter 1 of this user guide to learn how to configure the IP address of the printer.

CHAPTER FIVE

TCP/IP Printing

Printing from Windows[®] NT[®] or Windows[®] 2000, LAN Server and Warp Server

Overview

Users of Windows[®] NT[®] can print directly to a network ready Brother MFC using the TCP/IP protocol. Microsoft Windows[®] NT[®] 3.5x and NT[®] 4.0 users must install Microsoft's "TCP/IP printing" protocol. Windows[®] 2000 users are able to send print jobs directly to the printer without installing any additional software.

Quick Tips:

1. The default IP address of Brother Print / Fax servers is 192.0.0.192. To change it, use the MFC's front panel, the BRAdmin application, or let your DHCP server allocate an IP address.
2. Refer to chapter 1 of this user guide to learn how to configure the IP address on your MFC.
3. The default password for Brother Print / Fax servers is "access".
4. Windows[®] NT[®] 3.51 and Windows[®] NT[®] 4.0 users must install the "Microsoft TCP/IP printing" protocol (available through the control panel applet).
5. Windows[®] 2000 users can print using TCP/IP using the standard Network Printing software and IPP protocol software built into any Windows[®] 2000 installation.
6. Windows[®] 95/98/Me users can send print jobs using the IPP protocol via a Windows[®] 2000 computer providing that the Microsoft Internet Print Services software is installed on the client PC, IIS is installed and running on the Windows[®] 2000 computer and that the client PC is using version 4 or later of Microsoft Internet Explorer.
7. The default name for a Brother Print / Fax server is usually BRN_XXXXXX (where XXXXXX is the last six digits of the Ethernet address of the Print / Fax server).

Windows[®] NT[®] 3.5x/NT[®] 4.0/2000 (TCP/IP) Configuration

If you have not already done so, install the TCP/IP protocol onto your Windows[®] NT[®] system. This is done via the Network icon in the Control Panel window of the Windows[®] NT[®] system (the Control Panel is in the Main window on NT[®] 3.5x systems, or use the Start button on NT[®] 4.0 to access the Settings/Control Panel menu). The default configuration of Windows[®] 2000 automatically installs the TCP/IP protocol. Refer to the appropriate section in this chapter for more information.

Windows® 2000 Printing (Printer Driver not yet installed)

By default, Windows® 2000 systems install with all the necessary software required for you to be able to print. This chapter describes the two most commonly used configurations, Standard TCP/IP Port printing and IPP (Internet Printing Protocol). If you have already installed the printer driver, jump to the printer driver already installed section.

Standard TCP/IP Port Printing

1. From the Printers Folder select "Add Printer", the "Add Printer Wizard" will now start. Click on "Next".
2. Now select the Local Printer option and deselect the "Automatically detect and install my Plug and Play printer" option.
3. Click on "Next".
4. You must now select the correct Network printing port. Select the "Standard TCP/IP Port" option as the port is installed by default on Windows® 2000 systems.
5. When you have done that click "Next".
6. The "Add Standard TCP/IP Port Wizard" will now appear. Click the "Next" button.
7. Enter the IP address, or name of the printer you wish to configure. The Wizard will automatically enter the Port name information for you.
8. Click the "Next" button.
9. Windows® 2000 will now contact the printer that you specified. If you did not specify the correct IP address or name then you will receive an error message.
10. Click the "Finish" button to complete the Wizard.
11. Now that you have configured the port, you must specify which printer driver you wish to use. Select the appropriate driver from the list of supported printers. If you are using a driver supplied on the CD-ROM supplied with your MFC then select the "Have Disk" option to browse to the CD-ROM disk. You can also click the "Windows® Update" button to connect directly to Microsoft's support Web site to download printer drivers.
12. When the driver is installed, click the Next button.
13. Specify a name and click the "Next" button.
14. Now specify if you wish to share the printer, enter the share name and click "Next".
15. Continue through the Wizard clicking the "Finish" button when complete.

IPP Printing from Windows® 2000 Clients

If you wish to print using the IPP protocol, follow these steps:

1. From the Printers Folder select "Add Printer", the "Add Printer Wizard" will now start. Click on "Next".
2. Select "Network Printer".
3. Click the "Connect to a printer on the Internet or on your intranet" option.
4. You must now enter a URL name, a typical example of a URL name for a printer that supports the IPP protocol is: `http://ip_address:631/ipp` (where ip_address is the IP address, NetBIOS name or DNS name of the Print / Fax server).
5. Click the "Next" button.
6. Windows® 2000 will now connect to the device that you specified and determine the model number of the printer, if the appropriate driver is installed on the PC, it will be used, if the appropriate driver is not available you will be asked to insert the driver diskette that was supplied with the printer.
7. Follow the Wizard through to the end of the installation.
8. Click the "Finish" button to complete the Wizard.

IPP printing from Windows® 95/98/Me Clients

It is also possible to send a IPP print jobs from a Windows® 95/98/Me client PC providing the PC has the ability to connect to and access Windows® 2000 resources. Visit the Microsoft web site (www.microsoft.com) and download the Windows® Internet Print Services support software for Windows® systems.

Once installed, this software will allow you to connect to a Windows® 2000 system that is also running IIS and send print jobs using the IPP protocol.

By using Microsoft's IPP software you can also send jobs to other printers that do not support the IPP protocol.

Windows® 2000 Printing (Printer Driver already installed)

If you have already installed the printer driver and wish to configure it for network printing, follow these steps:

1. Select the printer driver you wish to configure.
2. Select File and then chose Properties.
3. Click the Ports tab of the driver and click "Add Port".
4. Select the port that you wish to use, typically this would be "Standard TCP/IP Port", then click the "New Port..." button.
5. The standard TCP/IP Port Wizard will start. Follow steps 6-10 of the "Standard TCP/IP Port Printing" section.

Windows[®] NT[®] 4.0 Printing

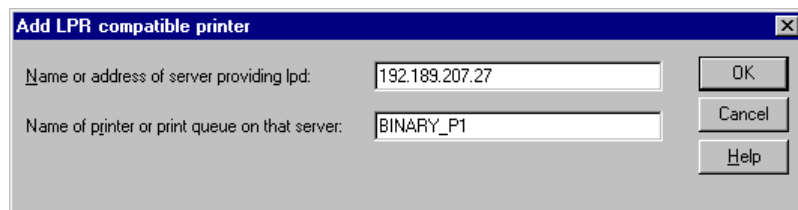
If you did not install the TCP/IP protocol or the Microsoft TCP/IP Printing protocol during the installation of your Windows[®] NT[®] 4.0 system (either workstation or server) follow these steps. Please note that it is essential that you install the Microsoft TCP/IP Printing protocol if you wish to print over the network using the TCP/IP protocol. If you have already installed the TCP/IP protocol and Printing protocol proceed to step 2.

Step 1: Running the Network applet, click on the Protocols tab.

1. Select Add, and double click on TCP/IP protocol.
2. Insert the requested disk(s), or CD-ROM, to copy the required files.
3. Click on the Services tab, click on Add and double click on Microsoft TCP/IP Printing.
4. Again insert the requested disk (s) or CD-ROM.
5. Click on the Protocols tab when then copying is finished.
6. Double click on the TCP/IP Protocol option and add the host IP address, subnet mask, and gateway address. Consult your system manager for these addresses.
7. Click OK twice to exit (your NT server will need to be re-booted).

Windows® NT® 4.0 Printing (Printer Driver not yet installed)

1. Go to the Start button, choose Settings, and then select Printers. Double click the Add Printer icon to get the Add Printer Wizard. Select My Computer (Not Network Printer) and click on Next.
2. Select Add Port, select LPR Port (LPR Port will not be displayed unless you install the "Microsoft TCP/IP Printing" protocol as described earlier) from the list of available ports and click on New Port.
3. Type in the IP address that you wish to assign to the Print / Fax server in the Name or address of server providing lpd: box. If you have edited your HOSTS file are using Domain Name System, enter the name associated with the Print / Fax server, instead of an IP address. As the Print / Fax server supports TCP/IP and NetBIOS names, you can also enter the NetBIOS name of the Print / Fax server. The NetBIOS name can be seen in your print configuration sheet. From default the NetBIOS name will usually appear as "BRN_XXXXXX" where XXXXXX is the last six digits of the Ethernet address.
4. Type in the Print / Fax server service name in the Name of printer or print queue on that server: box. If you do not know which service name to use, enter BINARY_P1 and then click on OK:



Note

Refer to How to configure TCP/IP printing for UNIX system for more information on Service Names.



5. Click on Close. The new Print / Fax server IP address should be listed and highlighted as an available port. Click on Next.
6. Select the desired printer model. If the correct model is not displayed, click on the "Have Disk" option and insert the CD-ROM supplied with your MFC.
7. If the driver already exists, select Keep Existing Driver (if it does not, this step will be skipped), and then click on Next.
8. If desired, change the name of the printer then click on Next.
9. If desired, make the printer shared (so other users can access it), and select the operating system(s) that these other computers will be running. Click on Next.
10. Select Yes when you are asked "Would you like to print a test page?" Click on Finish to complete the installation. You may now print to the printer as if it were a local printer.

Windows® NT® 4.0 Printing (Printer Driver already installed)

Follow these steps if the printer driver is already installed.

1. Click on Start then select Settings/Printers to display the currently installed printer drivers.
2. Double click the printer driver you wish to configure and select Printer menu and then choose Properties.
3. Select the Ports tab and click on Add Port.
4. Select LPR Port (LPR Port will not be displayed unless you install the "Microsoft TCP/IP Printing" protocol as described earlier) from the list of available ports and click on New Port.
5. Type in the IP address that you assigned to the Print / Fax server in the Name or address of server providing lpd: box. If you have edited your HOSTS file or are using Domain Name System, you can enter the name associated with the Print / Fax server, instead of an IP address. As the Print / Fax server supports TCP/IP and NetBIOS names, you can also enter the NetBIOS name of the Print / Fax server. The NetBIOS name can be seen in your print configuration sheet. From default the NetBIOS name will usually appear as "BRN_XXXXXX" where XXXXXX is the last six digits of the Ethernet address.
6. Type in the Print / Fax server service name in the Name of printer or print queue on that server: box. If you do not know which service name to use, enter BINARY_P1 and then click on OK:

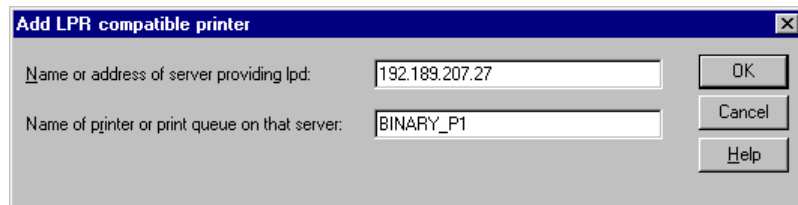


Figure 1 Add LPR compatible printer screen

7. Click on the Close button.
8. You should now see that the printer driver is configured to print to the IP address (or name) that you specified.
9. If you wish to share the printer, click on the Share tab and share the driver.

Windows® NT® 3.5x Printing

1. Go into the Control Panel and run the Network applet.
2. Select Add Software and TCP/IP Protocol and related components.
3. Select the TCP/IP Network Printing Support check box. And then click on the Continue button. (This option will be unavailable if the TCP/IP Network Printing Support protocol is already installed.
4. Insert the requested disk(s) to copy the required files. Your NT® server will need to be re-booted when the files are copied over.

Windows® NT® 3.5x Printing (Printer Driver not yet installed)

If you have Windows® NT® 3.5 or 3.51, use the following procedure to configure the Print / Fax server.

1. Go to the Main window and select the Print Manager icon.
2. Select Printer menu.
3. Select Create Printer.
4. Enter any name for the Printer Name.
5. Select Driver. Choose the appropriate driver.
6. Select Description. Enter anything for the description.
7. Select Print to and then select Other.
8. Select LPR Port.
9. Type in the IP address that you assigned to the Print / Fax server in the Name or address of host server providing lpd: box. If you have edited your HOSTS file or are using Domain Name System, enter the name associated with the Print / Fax server, instead of an IP address.
10. Type in the Print / Fax server service name in the Name of printer on that Machine. If you do not know which service name to use, enter BINARY_P1 and then click on OK.

Note

Refer to How to configure TCP/IP printing for Unix system for more information on Service Names.



Share the printer if necessary.

Other Sources of Information

1. Visit <http://solutions.brother.com/> for more information on network printing and for documents on the IPP protocol and how to configure a Windows® 2000/95/98/Me System.
2. Refer to chapter 1 of this user guide to learn how to configure the IP address of the printer.

CHAPTER SIX

Peer to Peer Printing

How to Print in a Windows® 95/98/Me Peer to Peer network

Overview

Microsoft's Windows® 95/98/Me operating systems features built-in networking capabilities. These capabilities allow a Windows® PC to be configured as a client workstation in a file server based network environment.

For smaller networks, Windows® 95/98/Me also allows the PC to operate in a peer-to-peer mode. In this mode, the PC can share resources with other PCs on the network without the need for a central file server.

Quick Tips:

1. The default IP address of Brother Print / Fax servers is 192.0.0.192. To change it, use the MFC's front panel, the BRAdmin application, or let your DHCP server allocate an IP address to the printer.
2. Refer to chapter 1 of this user guide to learn how to configure the IP address on your MFC.
3. The default password for Brother Print / Fax servers is "access".
4. Windows® 95/98/Me users can send print jobs using the IPP protocol via a Windows® 2000 computer providing that the Microsoft Internet Print Services software is installed on the client PC, IIS is installed and running on the Windows® 2000 and that the client PC is using version 4 or later of Microsoft Internet Explorer.
5. Brother printers are also compatible with HP JetDirect software, this means that you can use HP utilities to manage and to print to your Brother printer.

TCP/IP Printing

Our Peer to Peer printing software requires the TCP/IP protocol to be installed on your Windows® peer-to-peer computers and an IP Address has to be defined for the Print / Fax server. Refer to your Windows® documentation for more information on how to configure the TCP/IP protocol on your Windows® PC.

If you haven't already done so, configure the IP address of the MFC, for more information on IP address configuration, refer to chapter 1 of this user guide.

Installing the Brother Peer to Peer Software

1. Start the CD-ROM (supplied with your MFC) installation menu program according to the Quick Setup Guide and select Install Software.
2. From the Network Applications menu select Install Software.
3. Click "Install" Network Print Software.
4. Push the Next button in response to the Welcome message.
5. Select the Brother Peer to Peer Print (LPR) button.
6. Select the desired directory to install the Brother Network Direct Print files and push Next. The installation program will create the directory for you if it does not already exist on your disk.
7. Enter the Port name that you wish to use and click OK. The default port name is BLP1. Whichever name you choose, it must be unique and it MUST begin with BLP.
8. You must now enter the actual IP address of the Print / Fax server in the "Printer name or IP address" field. If you have edited the hosts file on your computer or are using Domain Name System, you can also enter the name of the Print / Fax server. As the Print / Fax server supports TCP/IP and NetBIOS names, you can also enter the NetBIOS name of the Print / Fax server. The NetBIOS name can be seen in your print configuration sheet. From default the NetBIOS name will usually appear as "BRN_xxxxxx" where xxxxxx is the last six digits of the Ethernet address.



Windows 95/98/Me store the hosts file in the default Windows® directory. By default, the Windows® hosts file is called hosts.sam. If you wish to use the hosts file you must rename the file to hosts with no extension, the .sam extension stands for sample.

9. Click the OK button. When prompted you must re-boot your computer.

Associating to the printer

You must now create a printer on your Windows® system using the standard Windows® printer setup procedure.

1. To do this, go the Start button, select Setting and then Printers.
2. Select Add Printer to begin the printer installation.
3. Click Next when you get the add Printer Wizard window.
4. Select Local Printer when you are asked how the printers are connected to your computer, and then push Next.
5. Select the correct driver. Click Next when you are done.
6. If you have selected a printer driver that is already being used, you have the option of either keeping the existing driver (recommended) or replacing it. Select the desired option and press Next.
7. Select the Brother LPR port (port name you assigned in step 4 of the Installing the Brother Peer to Peer Print (LPR) Software section) and press Next.
8. Enter any desired name for the Brother printer and press Next. For example, you could call the printer "Networked Brother Printer".
9. Windows® will now ask you if you wish to print out a test page, select Yes and then select Finish.

You have now finished installing the Brother Network Direct Print software.

Adding a Second Brother LPR Port

You do not re-run the install program to add a new Brother LPR port. Instead, press the Start button, select Settings, and open the Printers Windows®. Click on the icon of the printer that you wish to configure, select File from the Menu bar, and then choose Properties. Click on the Details tab and push the Add Port button. In the Add Port dialog, select the Other radio button and then highlight "Brother LPR port". Click OK and enter the port name. The default port name is BLP1. If you have already used this name, you will get an error message if you try to use it again, in which case use BLP2, etc... Once you have specified the Port name, click the OK button. You will then see the Port Properties Dialog.

Enter the IP address of the printer that you wish to print to and click OK. You should now see the port that you have just created in the "Print to the following port" setting of the printer driver.

Other Sources of Information

1. Visit <http://solutions.brother.com/> for more information on network printing.
2. Refer to chapter 1 of this user guide to learn how to configure the IP address of the MFC.

CHAPTER SEVEN

NetBIOS Peer to Peer Printing

How to Printing using NetBIOS on Windows[®] 95/98/Me/NT[®]/2000

Overview

Brother's Print / Fax server range supports SMB (Server Message Block) over the TCP/IP protocol via the NetBIOS interface. This means that just like regular Windows[®] PC's, Brother printers can appear in your network neighborhood. The main advantage of NetBIOS printing is that you are able to print from legacy DOS applications that are running on PC's that are connected to Microsoft networks.

Quick Tips:

1. The default IP address of Brother Print / Fax servers is 192.0.0.192. To change it, use the MFC's front panel, the BRAdmin application, or let your DHCP server allocate an IP address to the printer.
2. Refer to chapter 1 of this user guide to learn how to configure the IP address on your printer.
3. The default login names are "user" for users and "admin" for administrators and the default password for Brother Print / Fax servers is "access".
4. The default domain name of the Print / Fax server is WORKGROUP, to change it use your web browser or the BRAdmin application.

Print / Fax Server Configuration

In order for this function to work, you must correctly change the DOMAIN name or WORKGROUP name to match that of your network. Once this is done, the Print / Fax server will appear automatically in your network neighborhood and you will be able to send print documents to it without having to install additional software. However, in some instances you may find that your Windows® 95/98/Me and Windows® NT® 4.0/2000 systems may receive "Printer is busy" error messages when more than one person attempts to access the MFC. In this instance Brother has provided the "Brother NetBIOS Port Monitor" software which allows users to continue spooling print jobs while the printer is busy, down or out of paper. The port monitor will hold the jobs until the printer is again available.

When you install Windows® 95/98/Me you are asked which workgroup you belong to, the default workgroup name for Windows® 95/98/Me is "WORKGROUP", however you could change this to anything you want. With Windows® NT®, Microsoft introduced the concept of "Domains". A domain offers centralized security management where as a workgroup offers distributed security management. The Print / Fax server does not care if your network consists of a Workgroup or a Domain, the only thing you must tell it is the name of the workgroup or domain. The Brother Print / Fax server automatically has a default workgroup/domain name of "WORKGROUP". If you need to change name, you can configure the Brother Print / Fax server to recognize this. There are four ways of doing this (If you are unsure about the name of your workgroup or domain, look in the identification tab in your network applet).

- Use BRAdmin (this utility can use the TCP/IP protocol or Netware IPX protocol - no file server necessary).
- Use a Web browser, (the Print / Fax server must have a valid IP address and your computer must also have a valid IP address); you can configure the IP address by using BRAdmin.
- TELNET, again your computer and printer must have a valid IP address.
- Use BRCONFIG for DOS (this utility requires a Netware file server and the IPX protocol).



Because of the way that Microsoft networks work, the Print / Fax server may take several minutes to appear in the network neighborhood. You will also find that the Print / Fax server may take several minutes to disappear from the network neighborhood even if the printer is switched off. This is a feature of Microsoft workgroup and domain based networks.

Changing the workgroup/domain name using TELNET or BRCONFIG or a web browser

If you are unable to use the BRAdmin application or a web browser, you can use TELNET or the BRCONFIG Remote console program (BRCONFIG requires the IPX/SPX protocol to be installed on your PC).

When you are connected to the Print / Fax server, enter the default password "access" in response to the "#" prompt. Type in anything in response to the "Enter Username>" prompt, you will then be at the "Local>" prompt.

Now enter the command:

```
SET NETBIOS DOMAIN domainname  
EXIT
```

Where domainname is the name of the domain or workgroup that you are on. If you are not sure what your domain name or workgroup name is look in the Identification tab in your Windows® 95/98/Me/NT® 4.0 network applet.

You can also use a standard WWW browser to change the NetBIOS name, to do this connect to the Print / Fax server using its IP address and then select the "Configure NetBIOS" option from the Print / Fax server configuration screen, enter you workgroup/domain name into the "Domain Name" text box. Make sure you submit the changes.

NetBIOS Port Monitor for Windows® 95/98/Me, NT® 4.0/2000

This software requires the TCP/IP transport protocols to be installed on your Windows® 95/98/Me, NT® 4.0/2000 computer. To install those protocols refer to your Windows® documentation.

If you are using the TCP/IP protocol, the proper IP address should be defined on both the Brother Print / Fax server and your client PC.

Installing the Brother NetBIOS Port Monitor

1. Start the CD-ROM (supplied with your MFC) installation menu program according to the Quick Setup guide and select Install Software.
2. From the Network Applications menu select Install Software.
3. Click "Install" Network Print Software.
4. Push the Next button in response to the Welcome message.
5. Select Brother Peer-to-Peer Print (NetBIOS) installation.
6. Select the desired directory to install the Brother Network Direct Print files and push Next.
7. Enter the Port name that you wish to use. The port name must start with "BNT". For example BNT1. Whichever name you choose, it must be unique. Then press "OK". The name must be unique on your PC, however other computers can use the same port name as the name you specify on your PC.
8. You must now enter the server name and port name for actual Print / Fax server. You can use the Browse button for searching the Print / Fax server, select the domain/workgroup name, and then the server is listed. If the Print / Fax server does not automatically appear in your browse list, then you must ensure that the domain name is configured correctly. Otherwise you must enter the name manually. The name should be compliant with UNC (Universal Name Convention). For example "\\nodeName\ServiceName".

Where nodeName is the NetBIOS name of the Brother Print / Fax server (the default name is usually BRN_XXXXXX, where "XXXXXX" is the last six digits of the Ethernet address), and ServiceName is the service name for NetBIOS of the Print / Fax server, by default it is BINARY_P1. For example:

\\BRN_310107\BINARY_P1



You can find the NetBIOS name and MAC address by printing out the MFC configuration page. Refer to the User's Guide for information on how to print the configuration page on your Print / Fax server.

9. Then press "OK".
10. Click the Finish button. You must now restart your computer before you can continue.

Associating the printer

1. You must now create a printer on your Windows® 95/98/Me and NT® 4.0/2000 system using the standard Windows® printer setup procedure. To do this, go the Start button, select Setting and then Printers.

Windows® 95/98/Me

2. Select Add Printer to begin the printer installation.
3. Click Next when you get the add Printer Wizard window.
4. Select Local Printer when you are asked how the printer is connected to your computer, and then push Next.
5. Select the correct driver. Click Next when you are done.
6. If you have selected a printer driver that is already being used, you have the option of either keeping the existing driver (recommended) or replacing it. Select the desired option and press Next.
7. Select the Brother NetBIOS Port (Port name you assigned in step 7 of the Installing the Brother Peer-to-Peer Print (NetBIOS) section) and press Next.
8. Enter any desired name for the Brother MFC and press Next. For example, you could call the printer "Networked Brother Printer".
9. Windows® will now ask you if you wish to print out a test page, select Yes and then select Finish.

You are now ready to print. If necessary, you can share the printer on your PC so that all print jobs are routed through your computer.

Windows® NT® 4.0/2000

2. Select Add Printer to begin the printer installation.
3. Click Next when you get the add Printer Wizard window.
4. Select My Computer when you are asked how the printer is connected to your computer, and then push Next.
5. Select the Brother NetBIOS Port (Port name you assigned in step 6 of the Installing the Brother Peer-to-Peer Print (NetBIOS) section) and press Next.
6. Select the correct driver. Click Next when you are done.
7. If you have selected a printer driver that is already used, you have the option of either keeping the existing driver (recommended) or replacing it. Select the desired option and press Next.
8. Enter any desired name for the Brother printer and press Next. For example, you could call the printer "Networked Brother Printer".
9. Select not Shared or Shared and Share Name and press Next.
10. Windows® will now ask you if you wish to print out a test page, select Yes and then select Finish.

You are now ready to print. If necessary, you can share the printer on your PC so that all print jobs are routed through your computer.

Adding a Second NetBIOS Print Port

1. You do not need to re-run the installation program to add a new NetBIOS port. Instead, press the Start button, select Settings, and open the Printers Windows®. Click on the icon of the printer that you wish to configure, select File from the Menu bar, and then choose Properties.

Windows® 95/98/Me

2. Click on the Details tab and push the Add Port button. In the Add Port dialog, select the Other radio button and then highlight "Brother NetBIOS port". Click OK and enter the port name. The default port name is BNT1. If you have already used this name, you will get an error message if you try to use it again, in which case use BNT2, etc... Once you have specified the Port name, click the OK button. You will then see the Port Properties Dialog. Enter the Print / Fax server and port name of the printer that you wish to print to and click OK. You should now see the port that you have just created in the "Print to the following port" setting of the printer driver.

Windows® NT® 4.0/2000

2. Click on the Ports tab and push the Add Port button. In the Add Port dialog, highlight "Brother NetBIOS port". Click New Port and enter the port name. The default port name is BNT1. If you have already used this name, you will get an error message if you try to use it again, in which case use BNT2, etc... Once you have specified the Port name, click the OK button. You will then see the Port Properties Dialog. Enter the Print / Fax server and port name of the printer that you wish to print to and click OK. You should now see the port that you have just created in the "Print to the following port" setting of the printer driver.

Other Sources of Information

1. Visit <http://solutions.brother.com/> for more information on network printing.
2. Refer chapter 1 of this user guide to learn how to configure the IP address of the printer.

CHAPTER EIGHT

How to Configure Internet Printing for Windows[®] 95/98/Me/NT[®] 4.0/2000

Internet Printing Installation

Overview

Brother's Brother Internet Print (BIP) software, for Windows[®] 95/98/Me/NT[®] 4.0, allows a PC user at one location, to send a print job to a Brother Printer at a remote location via the Internet. For example, a user on a PC in New York could print a document directly from his Microsoft Excel application program to a printer in Paris.

Windows[®] 2000 users can also use this BIP software, but are recommended to use the IPP protocol support that is part of the Windows[®] 2000 operating systems. Skip to the "Windows[®] 2000 IPP Printing" section of this document.

Quick Tips:

1. The default IP address of Brother Print / Fax servers is 192.0.0.192. To change it, use the MFC's front panel, the BRAdmin application, or let your DHCP server allocate an IP address to the printer.
2. Refer to chapter 1 of this user guide to learn how to configure the IP address on your printer.
3. The default password for Brother Print / Fax servers is "access".
4. Windows[®] 2000 users can print using TCP/IP using the standard Network Printing software and IPP protocol software built into any Windows[®] 2000 installation.
5. Windows[®] 95/98/Me users can send print jobs using the IPP protocol via Windows[®] 2000 computer providing that the Microsoft Internet Print Services software is installed on the client PC, IIS is installed and running on the server and that the client PC is using version 4 or later of Microsoft Internet Explorer.

Brother Internet Print General Information

The BIP software is installed using a standard Windows® 95/98/Me/NT® 4.0 Installation Wizard. It creates a virtual port on the Windows® 95/98/Me/NT® 4.0 PC that operates in a similar way to the standard LPT1 printer port from the Application program point of view. The user can use the Windows® 95/98/Me/NT® 4.0 Print Manager to create a printer that uses this port along with a standard Windows® 95/98/Me, NT® 4.0-compatible printer. Any Windows® 95/98/Me/NT® 4.0 applications program can therefore print to this printer (and hence to the virtual port) without modification or operational procedure.

When a job is printed to the BIP virtual port, it is actually MIME-encoded (converted to a standard Internet E-mail message) and sent out to a Brother Print / Fax server at the remote location using Winsock. This means that BIP is compatible with most common E-mail software packages. The only requirement is that the E-mail server be capable of sending E-mail message over the Internet.

In more detail, the procedure works in the following way:

- If you are connected to a Local Area Network, the E-mail message is passed to the E-mail server, which in turn transmits the message out over the Internet using the SMTP protocol (Simple Mail Transport Protocol) to the remote Print / Fax server.
- If you are connecting via a modem directly to an Internet Service Provider (ISP), the ISP handles the routing of the E-mail to the remote Print / Fax server.
- At the remote site, an E-mail server receives the E-mail message. The remote Print / Fax server, which has its own E-mail address, uses the POP3 protocol (Post Office Protocol 3) to download the E-mail message from the server. It then decodes the attachment and prints it out on the printer.



If an E-mail is received that has not been configured to use the BIP virtual port driver, the printer will print the e-mail out as a text document.

Brother Internet Print

Configuring the Brother Print / Fax server

The Print / Fax server can be configured using BRAdmin, by using a web browser, or by using the TELNET command.

Print / Fax server Configuration Checklist



Before configuring the Print / Fax server to receive BIP jobs, be sure that the E-mail server at the remote site (the receiving end) is configured to handle the TCP/IP POP3, and SMTP protocols (SMTP is only required if the notification feature is enabled).

1. Configure the POP3 server on the E-mail server at the remote site with a mail account (Mailbox name) and password for the Brother Print / Fax server (generally, the mail account name will be the first part of the Email address; for example, if you assign the Email address emailprinter@xyz.com, then the mail account name would be emailprinter).
2. Make sure that the Print / Fax server is installed and running with TCP/IP enabled and has a valid IP address assigned to it.

Because access to the E-mail server on most networks is usually restricted, you may need to have your network administrator check the configuration and add the mail account.

Brother Internet Print

Using BRAdmin to Configure the Print / Fax server



Skip this section if you wish to use the Print / Fax server remote console or Web Browser to configure the Print / Fax server.

Using the BRAdmin application, you can configure the Brother Print / Fax server using the TCP/IP protocol, or the IPX protocol.

The steps required to configure the Print / Fax server to receive print jobs from a Windows® 95/98/Me/NT® 4.0. PC running the BIP software is as follows:

1. Start BRAdmin.
2. Select the node name of the desired Brother Print / Fax server from the list and double clicking on it. (the default node name is usually BRN_XXXXXX, where "XXXXXX" is the last six digits of the Ethernet address (MAC address)). You will be prompted for a password, the default password is "access".



You can find the node name and MAC address by printing out the MFC's configuration page. Refer to the Quick Network Setup Guide for information on how to print the configuration page on your Print / Fax server.

3. Click on the Internet tab.
4. Enter the IP address of the POP3 server (consult your network administrator if you do not know this address).
5. Enter the mailbox name for the remote Brother Print / Fax server. Usually this will be the first part of the E-mail address (for example, if the E-mail address of the Print / Fax server is emailprinter@xyz, then the mailbox name would be emailprinter).
6. Enter the password for the mailbox, if any.
7. The Print / Fax server is configured by default to poll the POP3 server every 10 minutes. You may change this value, if desired.
8. If you have enabled notification, enter the IP address of your SMTP server (consult your network administrator if you do not know this address).
9. Press the OK button and save the changes. Now exit the BRAdmin application. You have now configured the Print / Fax server to receive print jobs.

Brother Internet Print Using a Web Browser to configure the Print / Fax server

1. Connect to the printer server IP address using your web browser.
2. When you reach the network configuration screen, you will be prompted for a password. The default password is "access".
3. Select the Configure Internet option and enter the information as described above. Refer to "Using BRAdmin to Configure the Print / Fax server".
4. You should see a Segmented Message Timeout option. If a print job is separated into multiple E-mail messages using the Partial E-mail Print feature of the BIP, this value indicates how long the Print / Fax server will wait for all of the segments of the message to arrive.

Brother Internet Print

Using TELNET to Configure the Print / Fax server



Skip this section if you used BRAdmin or a Web Browser to configure the remote Print / Fax server.

As an alternative to BRAdmin, you can use the Print / Fax server remote console to configure the Print / Fax server. The console can be accessed via TELNET. When you access the Print / Fax server using these utilities, you will be asked for a password. The default password is "access".

1. When you get the "Local>" prompt after connecting to the console, enter the command:

```
SET POP3 ADDRESS ipaddress
```

where ipaddress is the IP address of your POP3 server (consult with your network administrator if you do not know this address).

2. Enter the command:

```
SET POP3 NAME mailboxname
SET POP3 PASSWORD emailpassword
```

where mailboxname is the name of the remote Print / Fax server mailbox and emailpassword is the password associated with this mailbox.

Usually the mailbox name is the same as the first part of the E-mail address that you defined previously (for example, usually if the E-mail address is emailprinter@xyz.com, then the mailbox name is emailprinter).

3. The Print / Fax server is set by default to poll the POP3 server every 10 minutes. If you wish to change this value, enter the command:

```
SET POP3 POLLING rate
```

where rate is the polling rate in minutes.

Type EXIT to exit the console and save the changes. You have now completed configuring the Print / Fax server.

Brother Internet Print Installing the BIP software on Windows® 95/98/Me/NT® 4.0/2000

To install the BIP software on a Windows® 95/98/NT® 4.0 PC, execute the following steps:



- Be sure that the PC is running an E-mail program (for example, Microsoft Outlook) that is capable of sending E-mail message using Winsock.
- Be sure that your E-mail server is capable of sending messages across the Internet.

Setup from CD-ROM

1. Start the CD-ROM (supplied with your MFC) installation menu program according to the Quick Setup guide and select Install Software.
2. From the Network Applications menu select Install Software.
3. Click "Install" Network Print Software.
4. Push the Next button in response to the Welcome message.
5. Select the Brother Internet Print button.
6. Select the desired directory to install the BIP files and then push Next. The installation program will create the directory for you if it does not already exist.
7. You will then be asked for a port name. Enter the name of the port. The port name must begin with the BIP and end with a number, for example, BIP1.
8. You will then see a message about Partial E-mail Print. Partial E-mail Print is the ability of the Brother Internet Print software to break down E-mail Print jobs into smaller sections to prevent a mail file size limitation problem for mail server.
9. Press OK to continue.

10. You will then be asked to enter the port settings for the remote Print / Fax server:

Enter any unique legal Internet E-mail address for the remote Print / Fax server (for example emailprinter@xyz.com). Note that Internet E-mail addresses cannot have spaces in them.

Enter your E-mail address and the IP address of your SMTP E-mail server (consult your network administrator if you do not know this address). Also specify if you are going to use the Partial E-mail Print option and Notification type.

11. Press OK to continue. You will then be asked to re-start your computer.
12. Once your computer has re-started you must create a printer on your Windows® 95/98/Me/NT® 4.0 system using the standard Windows® 95/98/Me/NT® 4.0 printer setup procedure. To do this, go the Start button, select Settings and then Printers.
13. Select Add Printer to begin the printer installation.
14. Click Next when you get the Add Printer Wizard window.

(For Windows® 95/98/Me user)

15. Select Local Printer, when you are asked how the printers are connected to your computer and push Next.

(For Windows® NT4.0/2000 user)

15. Select Local Printer, and then delete the check mark in Plug and Play check box.

<For Windows® 95/98/Me users>

15. Select the desired model of the remote printer (for example, Brother HL-series). If necessary, click Have Disk to load the driver from the installation CD ROM diskette. Click Next when you are done.
16. If you have selected a printer driver that is already being used, you have the option of either keeping the existing driver (recommended) or replacing it. Select the desired option and press Next.
17. Select the Brother Internet port (BIP...) which you select in step 6 and press Next.

<For Windows® NT® 4.0/2000 users>

15. Select the Brother Internet port (BIP...) which you select in step 6 and press Next.
16. Select the desired model of the remote printer (for example, Brother HL-series). If necessary, click Have Disk to load the driver from the printer's installation diskette. Click Next when you are done.
17. If you have selected a printer driver that is already being used, you have the option of either keeping the existing driver (recommended) or replacing it. Select the desired option and press Next.
18. Enter any desired name for the BIP remote printer and press Next. Note that this name does not need to match the Port name that you assigned in step 7, or E-mail address that you assigned in step 10.
19. Select No when asked if you want to print a test page, unless you have already configured the remote Print / Fax server to receive BIP print jobs.

You have now finished installing the BIP software. If you need to configure another remote Print / Fax server, go to next section, Adding a Second Brother Internet Port.

Adding a Second Brother Internet Port

You should not re-run the install program to add a new Brother Internet Port. Instead, press the Start button, select Settings, and open the Printers Windows®. Click on the icon of a printer that is using BIP, select File from the menu bar, and then choose Properties. Click on the Details (Ports on Windows® NT®) tab and push the Add Port button.

In the Add Port dialog, select the Other radio button (Windows® 95/98/Me only) and then "Brother Internet Port". Click OK (New Port on Windows® NT®) and it will give you the Port Name. Any unique name can be given here as long as it starts with "BIP" and another port does not already exist with the same name.

Windows® 2000 IPP Printing

Use the following instructions if you wish to use the IPP printing capabilities of Windows® 2000.

1. Run the Add Printer Wizard and click the Next button when you see the “Welcome to the Add Printer Wizard” screen.
2. You are now able to select “Local Printer” or “Network Printer”. Make sure that you select “Network Printer”.
3. You will see the “Add Printer Wizard” screen.
4. 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 or DNS name of your printer.)
5. 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.

6. Click “OK”, you will then see the following Printer selection screen in the Add Printer Wizard.
7. If your printer is not in the list of supported printers, click the “Have Disk” button. You will then be asked to insert the driver disk.
8. Click the “Browse” button and select the CD-ROM or network share that contains the appropriate Brother printer driver.
9. Now specify the model name of the printer.
10. 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.
11. 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 More 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 More Info” option will not display any printer data.

http://printer_ip_address:631/

If you forget the URL details, you can simply enter the above text and the printer will still receive and process data. Please note the “Get More Info” option will not display any printer data.

If you are using the built in service names that the Brother NC-8100h series Print / Fax server supports, you can also use the following (however, please note the “Get More 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.

Other Sources of Information

1. Visit <http://solutions.brother.com/> for more information on network printing and for documents on the IPP protocol and how to configure a Windows® 2000/95/98/Me System.
2. Visit Microsoft’s web site for the “Microsoft Internet Print Services” software for Windows® 95/98/Me.
3. Refer to chapter 1 of this user guide to learn how to configure the IP address of the printer.

CHAPTER NINE

Novell NetWare Printing

How to configure Novell NetWare Printing

Overview

Brother Print / Fax servers allow NetWare client PCs to print jobs on the same printer as TCP/IP or other network protocol users. All NetWare jobs are spooled through the Novell server and delivered to the printer when it is available.

Quick Tips:

1. The default IP address of Brother Print / Fax servers is 192.0.0.192. To change it, use the print front panel (if applicable), the BRAdmin application, or let your DHCP server allocate an IP address to the printer.
2. The default password for Brother Print / Fax servers is "access".

General Information

In order to use a Brother Print / Fax server on a NetWare network, one or more file servers must be configured with a print queue that the Print / Fax server can service. Users send their print requests to the file server's print queue, and the jobs are then spooled (either directly, or in the case of remote printer mode, via an intermediate Print / Fax server) to the appropriate Brother Print / Fax server.

The system administrator can create Bindery (NetWare 3), NDS (NetWare 3 and NetWare 4) based queues in a single environment without having to switch between applications by using the BRAdmin application.

NetWare 5 users wishing to configure an NDPS printer must use the NWADMIN application supplied with NetWare 5. Please note that it is possible to create IPX BINDERY or NDS based queues on a NetWare 5 system using the BRAdmin application.

You must install the Novell NetWare Client 32 if you wish to create queue information on your NetWare servers using the BRAdmin application.

If you can't use the BRAdmin application in your environment, you can create the queue using the traditional NetWare PCONSOLE utility or NWADMIN utilities, but you will then also need to use the Brother BRCONFIG utility, TELNET or a WWW browser to configure the Print / Fax server as described later in this chapter.

Brother Print / Fax servers can service up to 16 file servers and 32 queues.

Creating a NDPS Printer Using NWADMIN for NetWare5

With NetWare 5, Novell has released a new preferred printing system called Novell Distributed Print Services (NDPS). Before the Print / Fax server can be configured, NDPS must be installed on the NetWare 5 server and an NDPS Manager configured on the server.



For further information regarding NDPS printers and printing please refer to the “Other Sources of Information” section at the end of this chapter.

NDPS Manager

This creates a NDPS manager that interacts with services running at the server and manages an unlimited number of printer agents.

You have to create an NDPS manager within an NDS tree before creating server-based printer agents. If the NDPS manager controls a printer attached directly to the server, you must load the manager on the server that the printer is attached to.

1. In NetWare administrator, navigate to the area you want the NDPS manager to reside. Select Object | Create | NDPS Manager and click OK.
2. Enter an NDPS manager name.
3. Browse to a server (which has NDPS installed but no NDPS manager installed) where you want to install the NDPS manager and then to the volume you want the NDPS manager database assigned to. Click create.

NDPS Broker

When NDPS is installed, an NDPS broker is loaded onto the network. One of the Broker services Resource Management Service allows Printer Drivers to be installed onto the server for use with Printer Agents.

To add a Printer Driver to the Broker:

4. Make sure the Resource Management Service is enabled.
5. Open the Broker Object's main window in NetWare Administrator.
6. Select the Resource Management view.
7. The Resource Management dialog appears. Select the Add Resources button.
8. When the Manage Resources dialog appears, select the icon for the type of driver you want to add. This will be a 3.1x, 95/98/Me or NT4.0 driver for NetWare 5. If you are using NDPS version 1 with NetWare 4.x only 3.1x and 95/98/Me options will be available. NDPS version 2 for NetWare 4.x will support NT drivers automatic download.

9. A complete list of currently loaded resources of that type appears in the Current Resources window. Click the Add button.
10. The Add <resource type> dialog appears. The listed resources that appear on this screen are currently installed.
11. Press the Browse button to locate the driver you want to add to the list. The driver list appears possibly showing several printers. This should be the driver in different languages supported.

Creating a Printer Agent

1. In NetWare Administrator, select object | create | NDPS Printer. Enter the NDPS printer name.



For further information regarding NDPS printers and printing please refer to the “Other Sources of Information” section at the end of this chapter.

2. If this is a new printer select create A New Printer Agent.
3. If there is already an NDS printer and you are upgrading it to use the NDPS scheme, select Existing NDS printer object. You will then have to select which printer object you wish to upgrade.
4. Enter the name you wish the Printer Agent to be referred to and either type the name of the NDPS Manager or click the radio button and select a NDPS Manager. Select the type of Port for the Printer Agent and Click OK.
5. You must now specify the type of connection that you are going to use. There are four possible options. Select the LPR over IP option.
6. Enter the relevant details of the printer and Brother recommend typing Binary_P1 for the printer name. Click finish and wait. Select the printer drivers for the client operating systems.

You are now ready to print.

Configuring Netware 3 and NetWare 4 systems

Brother's BRAdmin application provides similar functionality to the NetWare PCONSOLE utility (or the NWADMIN utility in NetWare 4.1x or later). To use the BRAdmin application to configure a Brother Print / Fax server under NetWare, make sure that you are logged in as SUPERVISOR (NetWare 2.xx or 3.xx) or ADMIN (NetWare 4.1x or later) and perform the appropriate steps as detailed in the following pages.



You must install the Novell NetWare Client 32 if you wish to create queue information on your NetWare servers by BRAdmin.

Configuring the Brother Print / Fax server (Queue Server Mode in Bindery emulation mode) using BRAdmin

1. Make sure that you logged in as SUPERVISOR (NetWare 2.xx or 3.xx) or ADMIN (NetWare 4.xx or later).
2. Start BRAdmin.
3. One or more Print / Fax server will appear in the list (the default node names are BRN_XXXXXX, where "XXXXXX" is the last six digits of the Ethernet address (MAC address)).



You can find the node name and MAC address by printing out the MFC's configuration page. Refer to the Quick Network Setup Guide for information on how to print the configuration page on your Print / Fax server.

4. Select the Print / Fax server that you wish to configure and double click it. You will be asked for a password. The default password is "access".
5. Select the NetWare tab.



If necessary change the "Print / Fax server Name", the default NetWare Print / Fax server name will usually be BRN_XXXXXX_P1 where XXXXXX is the Ethernet address of the Print / Fax server. Be careful! Changing the name may impact the configuration of other protocols because the Print / Fax server service names will be altered.

- a. If it is not already selected, select Queue Server mode.
- b. Click the Change Bindery Queues button.
- c. Select the NetWare server which you wish to configure.
- d. Select the New Queue button and type in the queue name which you wish to create.
- e. Once you have done that highlight the queue name you created and click on the Add button.
- f. Click on Close and then OK.

Now exit the BRAdmin application. You are ready to print.

Configuring the Brother Print / Fax server (Queue Server Mode in NDS mode) using BRAdmin

1. Make sure that you logged in as ADMIN in NDS mode.
2. Start BRAdmin.
3. One or more Print / Fax server services will appear in the list of printers (the default node names are BRN_XXXXXX, where "XXXXXX" is the last six digits of the Ethernet address (MAC address)).



You can find the node name and MAC address by printing out the MFC's configuration page. Refer to the Quick Network Setup Guide for information on how to print the configuration page on your Print / Fax server.

4. Select the printer that you wish to configure and double click it. You will be asked for a password. The default password is "access".
5. Select the NetWare tab.
 - a. If it is not already selected, select Queue Server mode.
 - b. Select the correct NDS tree and NDS context (you can manually enter this information, or by clicking on the down arrow by the side of NDS tree and the Change button by the side of NDS Context, you can let BRAdmin display your choices automatically. Once you have specified this information, click on the Change NDS queues button.
 - c. In the NetWare Print Queues screen select the appropriate TREE and Context and then Click the New Queue button.
 - d. Enter the queue name and specify the volume name. If you do not know the volume name, select the Browse button to browse the NetWare volumes. When the information is entered correctly, select the OK button.
 - e. Your queue name will appear in the TREE and Context that you specified. Select the queue and click on Add. The queue name will then be transferred to the Service Print Queues Window. You will be able to see the TREE and Context information along with the queue name information in this Window.
 - f. Click on the Close button. Your Brother Print / Fax server will now log into the appropriate NetWare server.

Now exit the BRAdmin application. You are ready to print.

Configuring the Brother Print / Fax server (Queue Server Mode in NDS mode) using Novell NWADMIN and BRAdmin

If you do not wish to use the Brother BRAdmin application solely to configure your NetWare file server, use the following instructions for configuration using the NWADMIN application in conjunction with the BRAdmin application.

1. Make sure that you are logged in as ADMIN in NDS mode on the NetWare 4.1x (or later) file server and start the NWADMIN application.
2. Select desired Context that will contain the Printer and then click on Object from the menu bar and then Create. When you get the New Object menu, select Printer and then OK.
3. Enter the name of the printer and select Create.
4. Select the desired Context that will contain the default print queue, and then click on Object and Create to get New Object menu.
5. Select Print Queue and then OK. Make sure that Directory Service Queue is selected and then type in a name for the default print queue.
6. Click on the button to select the print queue volume. Change the directory context if necessary, then select the desired volume (from Available Objects) and click OK. Click Create to create the print queue.
7. Change context if required and then double click the name of the printer you created in step 3.
8. Click Assignments and then Add.

Change the context if necessary and select the print queue you created in step 5.

9. Click Configuration and set the Printer type to Other/Unknown. Click OK and then OK again.
10. Change the context if required, select Object from the menu bar and then Create. When you get the New Object menu, select Print / Fax server and then OK.
11. Enter the name of the Print / Fax server and select Create.



Enter the NetWare Print / Fax server name of the Print / Fax server exactly as it appeared in the NetWare tab of the BRAdmin application (this will generally be the BRN_XXXXXX_P1 default service name, unless you changed the name).

You can find the current service name and MAC address by printing out the MFC's configuration page. Refer to the Quick Network Setup Guide for information on how to print the configuration page on your Print / Fax server.

Important:

Do not assign a password to the Print / Fax server or it will not log in.

12. Double click on the name of your Print / Fax server. Click on Assignments and then Add...
13. If necessary, change the directory context. Select the printer you created in step 3 and click OK and then OK again.
14. Exit NWADMIN.
15. Start the appropriate BRAdmin application, and select the correct Print / Fax server from the list (by default, the node name is BRN_XXXXXX, where "XXXXXX" is the last six digits of the Ethernet address (MAC address)).

Double click the appropriate Brother Print / Fax server. You will be prompted for a password, the default password is "access". Now select the NetWare tab.

16. Select Queue Server as the operating mode.

The same service assigned by NetWare server name cannot be used for both queue server mode and remote printer mode.



If you want to enable queue server capabilities on services other than the default NetWare services, you must define new services that are enabled for NetWare and for the desired port. Refer to the Appendix in this manual for information on how to do this.

17. Enter the NDS tree name (note that a Print / Fax server can service both NDS and bindery queues).
18. Type in the name of the context where the Print / Fax server resides.
19. Exit the BRAdmin application making sure that you save the changes that you have made. You are now ready to print.

Configuring the Brother Print / Fax server (Remote Server Mode in NDS mode) using Novell NWAdmin and BRAdmin

To configure a Brother Print / Fax server for remote printer mode with NWADMIN (NetWare Administrator utility) and BRAdmin, you will need to perform the following steps:

1. Make sure that the PSERVER NLM (NetWare Loadable Module) is loaded on your file server and that you are logged in as ADMIN in NDS mode on the NetWare 4.1x file server.
2. Start NWADMIN by double clicking on the icon. Select the desired Context that will contain the new printer.
3. Select Object from the menu bar and then Create. When you get the New Object menu, select Printer and then OK.
4. Enter the name of the printer and select Create.
5. Double click on the Print / Fax server name of your PSERVER NLM. Click on Assignments and then Add.
6. If necessary, change the directory context. Select the printer you created and click OK. Note the number of the printer, as you will use this later, then click OK.
7. Select the desired Context that will contain the default print queue, and then click on Object and Create to get New Object menu.
8. Select Print Queue and then OK. Make sure that Directory Service Queue is selected, and then type in a name for the default print queue.

9. Click on the button to select the print queue volume. Change the directory context if necessary, then select the desired volume (Objects) and click OK. Click Create to create the print queue.
10. Change context if required and then double click the name of the printer you created previously.
11. Click Assignments and then Add.
12. Change context if necessary and select the print queue you created. Click OK and then OK again, and then exit NWADMIN.
13. Start the appropriate BRAdmin application, and select the correct Print / Fax server you wish to configure (by default, the node names will begin with BRN_XXXXXX_P1).



You can find the NetWare server name and MAC address by printing out the MFC's configuration page. Refer to the Quick Network Setup Guide for information on how to print the configuration page on your Print / Fax server.

14. Double click the appropriate Print / Fax server. You will be prompted for a password, the default password is "access".
15. Now select the NetWare tab.
16. Select Remote Printer as the Operating Mode, select the name of your PSERVER NLM as the Print / Fax server Name and select the number of the printer from step 6 as the Printer Number.



The same service assigned by NetWare Print / Fax server cannot be used for both queue server mode and remote printer mode. If you want to enable remote printer capabilities on a service other than the default NetWare service, you must define new services that are enabled for NetWare and for the desired port. Refer to Appendix B in this manual for information on how to do this.

17. Click OK. And exit BRAdmin.

You must now unload the PSERVER NLM from your NetWare file server console and then reload it in order for the changes to take effect.

As an alternative to Brother's BRAdmin application or the Novell NWADMIN application, you can use the standard Novell PCONSOLE utility in conjunction with Brother's BRCONFIG program to set up your print queues. BRCONFIG program will be installed at the same time when you install the BRAdmin and you can find the BRCONFIG in the menu "Start/Program/Brother BRAdmin utilities". Otherwise you can find it on the CD-ROM supplied with your MFC. Note that if desired, you may use a WWW browser or TELNET utility - instead of the BRCONFIG utility).

Configuring the Brother Print / Fax server (Queue Server Mode in Bindery emulation mode) using PCONSOLE and BRCONFIG

1. Login as Supervisor (NetWare 3.xx) or ADMIN (NetWare 4.1x or later; be sure to specify the /b option for bindery mode).
2. Execute the BRCONFIG from the Windows[®] menu or insert the "Print / Fax server Configuration Utility diskette in drive A: and type the following at the DOS prompt:

A:BRCONFIG or A:BRCONFIG PrintServerName

Where PrintServerName is the NetWare print service name of the Brother Print / Fax server (the default name is BRN_XXXXXX_P1, where "XXXXXX" is the last six digits of the Ethernet address (MAC address)).



You can find the NetWare print service name and MAC address by printing out the MFC's configuration page. Refer to the Quick Network Setup Guide for information on how to print the configuration page on your Print / Fax server.

3. If you did not specify the Print / Fax server name in the BRCONFIG command, select the corresponding server name from the list of Print / Fax servers.
4. When you get the message that the Print / Fax server is connected, type the default password "access" in response to the "#" prompt (the password will not echo), and then press the ENTER key in response to the Enter Username> prompt.
5. When you get the Local> prompt, type:
6. SET NETWARE SERVER servername ENABLED
7. Where servername is the name of the file server on which the print queue will reside. If there is more than one file server that you wish to print from, repeat this command as many times as necessary.

8. Type EXIT to exit the BRCONFIG remote console program and save the changes and start the Novell PCONSOLE utility.
9. Select Print / Fax server Information (NetWare 3.xx) or Print / Fax servers (NetWare 4.1x; ignore the warning message) from the Available Options menu.
10. You will be shown a list of current Print / Fax servers. Press the INSERT key to create a new entry, type in the NetWare Print / Fax server name (BRN_XXXXXX_P1 or BRO_XXXXXX_P1 by default, where "XXXXXX" is the last six digits of the Ethernet address) and press ENTER. Return to the main Available Options menu by pressing ESCAPE.
11. Select the Print Queue Information (NetWare 3.xx) or Print Queues (NetWare 4.1x) menu option to see list of configured print queues.
12. Press INSERT to create a new queue on the file server, type the new queue name and press ENTER. The name does not have to be related to the name of the Print / Fax server resources, but should be short and convenient for users to remember.
13. Make sure that the new queue name is highlighted, and then press ENTER to configure the queue.
14. Select Queue Servers (in NetWare 4.1x, this item is called Print / Fax servers) and press ENTER to specify which network Print / Fax servers can print jobs from this print queue. The list will be empty, since none have been selected yet if this is a new queue.
15. Press INSERT to get a list of the queue server candidates and select the Print / Fax server service name from step 11, Press ENTER.
16. Press ESCAPE several times until you return to the Available Options menu.
17. Force the Print / Fax server to rescan file servers for print jobs. You may either turn the printer off and on again or you may down the Print / Fax server in PCONSOLE as follows:
 - In the Available Options menu, highlight Print / Fax server Information, and press ENTER.
 - Select the Print / Fax server name (BRN_XXXXXX_P1) and press ENTER. If you have NetWare 4.1x, highlight Information and Status and press ENTER, and then skip to the next bullet.

If you have NetWare 3.xx or 2.xx:

- Highlight Print / Fax server Status/Control and press ENTER.
- Highlight Server Info and press ENTER.
- Push ENTER and then select Down and press ENTER again. This will force the Print / Fax server to rescan the available file servers for new queue entries.
- Alternatively, use the BRCONFIG or TELNET command SET NETWARE RESCAN to make the Print / Fax server rescan for file servers.

Configuring the Brother Print / Fax server (Queue Server Mode in NDS mode) using PCONSOLE and BRCONFIG

1. Make sure that you are logged in as ADMIN in NDS mode on the NetWare 4.1x file server.
2. Run the PCONSOLE utility from PC workstation.
3. Select Print / Fax servers from the Available Options menu.
4. Press INSERT and enter the Print / Fax server Name.



Enter the NetWare print service name of the Print / Fax server exactly as it appeared in the printer configuration page (the default name is BRN_XXXXXX_P1, where "XXXXXX" is the last six digits of the Ethernet address (MAC address), unless you changed the name to something else). You can find the NetWare print service name and MAC address by printing out the printer configuration page. Refer to the Quick Setup Guide for information on how to print the configuration page on your Print / Fax server.

Important:

Do not assign a password to the Print / Fax server or it will not log in.

5. Return to the main Available Options menu by pressing ESCAPE.
6. Select Print Queues.
7. Press INSERT type in the desired print queue name (you will also be asked for a volume name. Press INSERT and select the appropriate volume), and press ESCAPE to return to the main menu.
8. Make sure that the new queue name is highlighted, and press ENTER.
9. Select Print / Fax servers and press ENTER to specify which network Print / Fax servers can print jobs from this print queue. The list will be empty, since none have been selected.
10. Press INSERT to get a list of the queue server candidates and select the NetWare Print / Fax server name from step 4, which will then be added to the list. Press ENTER.
11. Select Printers from the Available Options menu.
12. Press INSERT and enter a descriptive name for the printer.
13. Press ESCAPE and go back to the Available Options menu.
14. Select Print / Fax servers and select the name of the printer server that you entered in Step 4.
15. Highlight the Printers option in the Print / Fax server Information menu.
16. Press INSERT and select the name of the printers you entered in Step 12.
17. Press ESCAPE several times to return to DOS.

18. Execute the BRCONFIG from the Windows[®] menu or insert the CD-ROM that came with your MFC into the CD-ROM Drive of your PC and type: X:BRCONFIG (X: is the drive letter of your CD-ROM Drive).

Select the Print / Fax server from the list of Print / Fax servers. When you get the message that the Print / Fax server is connected, press the ENTER key and type the default password of "access" in response to the "#" prompt (the password will not echo), and then press the ENTER key again in response to the ENTER Username> prompt. When you get the Local> prompt, type:

```
SET SERVICE service TREE tree
SET SERVICE service CONTEXT Context
```

- Where tree is the NDS tree name.
- Where context is the name of context where the Print / Fax server resides.
- Service is the name of the service assigned by NetWare Print / Fax server name (where the default services are BRN_XXXXXX_P1 for the Brother printer, where "XXXXXX" is the last six digits of the Ethernet address (MAC address)).
- You can also enter the TREE and CONTEXT name using your web browser by connecting to the Brother Print / Fax server using the TCP/IP protocol and selecting the NetWare protocol configuration.

19. Use the BRCONFIG command or TELNET command: SET NETWARE RESCAN to force the Print / Fax server to rescan for file servers, or power cycle the printer.

The same services assigned by NetWare Print / Fax server names cannot be used for both queue server mode and remote printer mode.



The same service assigned by NetWare Print / Fax server cannot be used for both queue server mode and remote printer mode. If you want to enable remote printer capabilities on a service other than the default NetWare service, you must define new services that are enabled for NetWare and for the desired port. Refer to Appendix B in this manual for information on how to do this.

Configuring the Brother Print / Fax server (Remote Printer Mode using PCONSOLE and BRCONFIG)

1. Make sure that the PSERVER NLM (NetWare Loadable Module) is loaded on your file server.
2. Log into the file server from your PC workstation as ADMIN if you are using NetWare 4.1x (if you want NDS support, do not login under bindery mode). If you are using NetWare 2.xx or 3.xx, login as SUPERVISOR.
3. Run the PCONSOLE utility from your PC workstation.
4. If you are creating a new print queue, select Print Queue Information (NetWare 3.xx) or Print Queues (NetWare 4.1x) from the Available Options menu.
5. Press INSERT, type in the desired print queue name (with NetWare 4.1x, you will also be asked for a volume name; press INSERT and select the appropriate volume), and press ESCAPE to return to the main menu.

The following steps apply to configuring a remote printer with NDS support on NetWare 4.1x systems:

6.
 - a. Select Print / Fax servers from the PCONSOLE menu and then select the name of the PSERVER NLM on your host computer.
 - b. Select Printers.
 - c. Press INSERT to get Object, Class menu.
 - d. Press INSERT and enter the Printer Name (any unique name is OK).
 - e. Highlight the printer name and press ENTER twice to get Printer Configuration Menu.
 - f. PCONSOLE will assign a Printer Number. Remember this number, since it will be used later.
 - g. Highlight Print Queues Assigned and press ENTER and then INSERT to get a list of available queues.
 - h. Highlight the name of the print queue you wish to assign to the remote printer and press ENTER.
 - i. The other settings in the menu are not required. Push ESCAPE several times to exit PCONSOLE.
 - j. Skip to the Assigning the remote printer name and number sections below.

The following steps apply to configuring a remote printer on NetWare 3.xx systems:

6.
 - a. Select Print / Fax server Information from the PCONSOLE main menu and choose the name of the PSERVER NLM.
 - b. Select Print / Fax server Configuration and then Printer Configuration. Select any "Not Installed" printer and press Enter. Remember the number of this printer, since it will be used later in the configuration process.
 - c. If desired, type in a new name for the printer.
 - d. Go to Type, press ENTER, highlight Remote Other/Unknown and press ENTER again. The other settings in this menu are not required.
 - e. Push ESCAPE and save the changes.
 - f. Push ESCAPE and select Queues Serviced by Printer.
 - g. Highlight the printer name that you just configured and press ENTER.
 - h. Press INSERT, choose the desired print queue, and press ENTER (you can accept the default priority).
 - i. Press ESCAPE several times to exit PCONSOLE.

Assigning the Remote printer name and number using BRCONFIG

7.
 - a. Execute the BRCONFIG from the Windows[®] menu or insert the Brother Print / Fax server Software diskette in Drive A: of your PC and type:
A:BRCONFIG
 - b. Select the Brother Print / Fax server from the list of Print / Fax servers. When you get the message that the Print / Fax server is connected, press the ENTER key and type Where the default password "access" in response to the "#" prompt (the password will not echo) and then press the ENTER key again in response to the Enter Username> prompt. When you get the Local> prompt, type:

```
SET NETWARE NPrinter nlm number ON service
SET NETWARE RESCAN
EXIT
```

- Where nlm is the name of the PSERVER NLM on your file server.
- Number is the printer number (must match the printer number you selected during the PCONSOLE configuration in the previous steps).
- Service is the name of the service assigned by NetWare Print / Fax server name (where the default services are BRN_XXXXXX_P1 for the Brother printer, where "XXXXXX" is the last six digits of the Ethernet address (MAC address)).

For example, to set up remote "Printer 3" for a Brother MFC with the Print / Fax server BRN_310107_P1 using the PSERVER NLM called BROTHER1PS, you would type:

```
SET NETWARE NPrinter BROTHER1PS 3 ON BRN_310107_P1
SET NETWARE RESCAN
EXIT
```

- You can also enter the remote printer name using your web browser by connecting to the Brother Print / Fax server using the TCP/IP protocol and selecting the NetWare protocol configuration.



The same services assigned by NetWare Print / Fax server name cannot be used for both queue server mode and remote printer mode.

You must now unload the PSERVER NLM from your NetWare file server console and then reload it in order for the changes to take effect.

Other Sources of Information

1. Visit <http://solutions.brother.com/> for more information on network printing.
2. Refer to chapter 1 of this user guide to learn how to configure the IP address of the MFC.

CHAPTER TEN

Printing From a Macintosh®

System Requirements

For AppleTalk connection

Computer	Ethernet ready Power Macintosh
RAM	32MB or more (64MB or more recommended)
OS	Mac OS 8.6 - 9.1
	Open Transport 1.3 or later

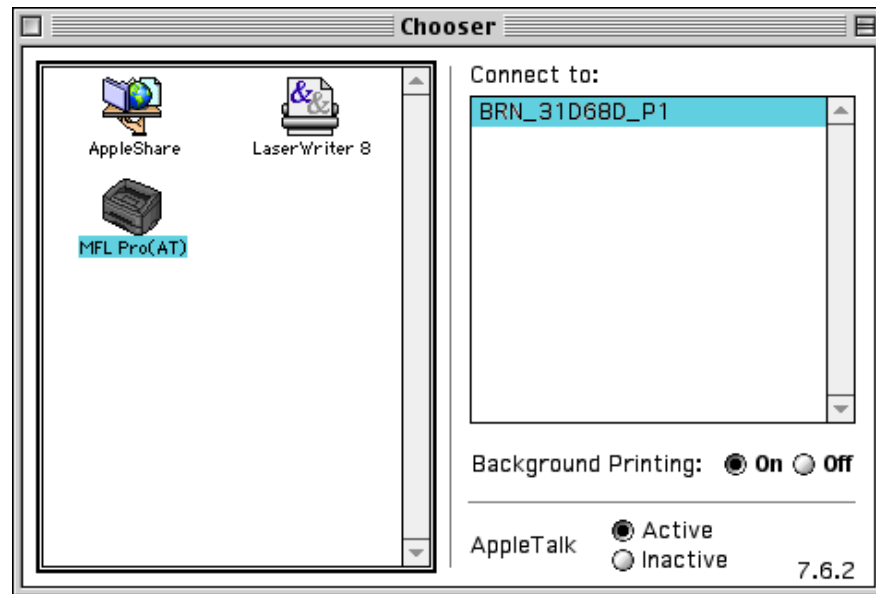
Printer Driver Installation

1. After starting up the Macintosh, insert the CD-ROM supplied with your MFC.
2. Double click the "MFL Pro Suite Driver Installer" icon.
3. Proceed according to the instructions on the installer screen.

Printer Driver Selection

After installing the printer driver, use the following steps to select the printer driver. If no printer driver is selection, application software will not be able to print.

1. Turn the power of the printer ON.
2. After starting up the Macintosh, click and open the Chooser from the Apple menu.
3. Click the printer driver icon appropriate to the connection type.
For AppleTalk MFL Pro (AT)



4. Select the printer connection destination.

For AppleTalk connections, the printer's AppleTalk service name (factory shipment number BRN_XXXXXX_P1, XXXXXX for Ethernet (MAC address) end 6 digits) will be shown in the connection destination list box.



Printing the configuration page will allow you to confirm the MAC address. Please refer to the Quick Network Setup Guide on how to print the configuration page.

5. Click the close box on the upper left of the dialog to end the setting.

Other Sources of Information

1. Visit <http://solutions.brother.com/> for more information on network printing.
Refer to chapter 1 of this user guide to learn how to configure the IP address of the MFC.

CHAPTER ELEVEN

DLC Printing

Printing from Windows[®] NT[®] or Windows[®] 2000

Overview

DLC is a simple protocol that is included in Windows[®] NT[®] and Windows[®] 2000 as standard. It can be used on other operating systems (such as Windows[®] 3.x) with the addition of vendor-supplied software that supports the Hewlett-Packard JetDirect card.

Quick Tips:

1. One way to print the details of all network settings is to print a configuration page. Refer to the NC-8100h Quick Network Setup Guide for information on how to print the configuration page.



Because DLC is a non-routable protocol, there cannot be a router between the Print / Fax server and the sending computer.

Configuring DLC on Windows[®] NT[®]/2000

To use DLC on Windows[®] NT[®], you must first install the DLC protocol.

1. Log into Windows[®] NT[®] with administrative privileges. Go to the NT Control Panel and double click on the Network icon. Windows[®] 2000 users select the properties of the Local Area Connection.
2. On Windows[®] NT[®] 3.5x systems, select Add Software. On Windows[®] NT[®] 4.0 systems, click on the Protocol tab, and click Add. Windows[®] 2000 users click the Install button from the General Tab.
3. Select DLC Protocol and then OK or Add if using Windows[®] 2000. You may be asked for the location of the files, for Intel based computers, the necessary files are stored in the i386 directory of the Windows[®] NT[®] CD-ROM. If you have a non-Intel platform, specify the correct directory on your Windows[®] NT[®] CD-ROM. Click Continue (for 3.5x systems) or Close (for 4.0 systems).
4. Reboot your system to make the change take effect. Windows[®] 2000 should not require a re-boot.

Windows® 2000 Printer Setup

1. Log into Windows® 2000 with administrative privileges. From the Start menu, select Settings and then Printers.
2. Select Add Printer (If you have already installed a Brother printer driver, double click the printer driver that you wish to configure and then select Printers/Properties, select the Ports tab, Click on “Add Port” and continue from Step 6 (ignoring steps 11-14) about installing the correct driver).
3. Click Next.
4. Select Local Printer and make sure that “Automatically detect and install my Plug and Play printer” is not checked.
5. Click Next.
6. Select the “Create a new port:” option and highlight “Hewlett-Packard Network Port”.
7. Click Next.
8. A list of available Print / Fax server MAC addresses (Ethernet addresses) appears in the larger box under Card Address. Select the address of the desired Print / Fax server (you can see the Ethernet address on the printer configuration page).



You can find the node name and MAC address by printing out the printer configuration page. Refer to the NC-8100h Quick Network Setup Guide for information on how to print the configuration page on your Print / Fax server.

9. The selected Print / Fax server address will then appear in the smaller box under Card Address.
10. Type in any desired name for the port (the name must not be the name of an existing port or DOS device, such as LPT1) and click OK then on the Printer Ports screen, click Next.
11. Select the correct driver click Next.
12. Give a name to the printer and specify if you wish to be able to print from DOS application. Then click Next.
13. Specify the share name (if you are going to share the printer).
14. Enter the Location and Comment information and click Next until you see the “Completing the Add Printer Wizard” screen.
15. Click Finish.

Windows® NT® 4.0 Printer Setup

Log into Windows® NT® with administrative privileges. From the Start menu, select Settings and then Printers.

1. Select Add Printer (If you have already installed a Brother printer driver, double click the printer driver that you wish to configure and then select Printers/Properties, select the Ports tab and continue from Step 4 (ignoring steps 9-11) about installing the correct driver).
2. Select My Computer and then click Next.
3. Select Add a Port.
4. Select Hewlett-Packard Network Port and then click New Port.
5. A list of available Print / Fax server MAC addresses (Ethernet addresses) appears in the larger box under Card Address. Select the address of the desired Print / Fax server (you can see the Ethernet address on the printer configuration page).



You can find the node name and MAC address by printing out the printer configuration page. Refer to the Quick Network Setup Guide for information on how to print the configuration page on your Print / Fax server.

6. The selected Print / Fax server address will then appear in the smaller box under Card Address.
7. Type in any desired name for the port (the name must not be the name of an existing port or DOS device, such as LPT1) and click OK then on the Printer Ports screen, click Close.
8. The name you selected in the above step will appear as a checked port in the list of available ports. Click Next.
9. Select the correct driver click Next.
10. Give a name to the printer. If desired, select the printer as the default.
11. Select Shared or Not Shared. If shared, specify the share name and operating systems that will be printing to it.
12. Select whether or not you want a test page, and then select Finish.

Windows® NT® 3.5x Setup

1. From the Windows® NT® Main group, double click on the Print Manager icon.
2. Select Printer from the menu bar and click on Create Printer.
3. Enter any desired name for the printer in the Printer Name box.
4. Select the printer model in the Driver menu.
5. Choose Other (or Network Printer for V3.1 systems) from the Print to menu.
6. Click on Hewlett-Packard Network Port.
7. Type in your desired name for the port (this name must not be an existing port or DOS device, such as LPT1).
8. The MAC addresses (Ethernet addresses) of available Print / Fax servers will appear in the Card Address menu. Select the desired address (You can see the Ethernet address on the printer configuration page).



You can find the node name and MAC address by printing out the printer configuration page. Refer to the User's Guide for information on how to print the configuration page on your Print / Fax server.

9. Click OK.
10. If you want to share the printer, click Share the Printer on the Network.
11. Click OK.
12. If necessary, select the appropriate printer options and then click OK.

Configuring DLC on Other Systems

To use DLC on other network systems, you will generally need vendor-supplied software. Typically such software will support the Brother Print / Fax servers. Follow the vendor's instructions to install the DLC protocol on your system.

Once the protocol is installed, create a network port in the same way that you did for Windows® NT® in the previous sections. The MAC address (Ethernet address) of the Print / Fax server should automatically appear during the configuration process.

The final step is to create a printer using the normal operating system printer setup method. The only difference is that instead of connecting the printer to the LPT1 parallel port, you point it to the network port you just created.



Brother does not recommend using the DLC protocol with Windows® for Workgroup 3.11 in a peer-to-peer configuration if the printer will be heavily used. This is because jobs may be rejected due to print spooler timeouts. The best solution in these situations is to set up one PC as a server for handling network print jobs. All of the other PCs send their print jobs to the server PC using NetBEUI or TCP/IP, and the server PC then uses DLC to send the print jobs to the Brother Print / Fax server.

Other Sources of Information

1. Visit <http://solutions.brother.com/> for more information on network printing.

CHAPTER TWELVE

Unix Printing

Printing from Unix/Linux using TCP/IP

Overview

Brother Print / Fax servers are supplied with the Transmission Control Protocol/Internet Protocol (TCP/IP) protocol suite. Since virtually all UNIX host computers support TCP/IP, this capability allows a printer to be shared on a UNIX Ethernet network.

The Linux operating system uses the same setup procedures as standard Berkeley UNIX systems. Refer to this chapter for a typical GUI based Linux installation.



Quick Tips:

1. The default IP address of Brother Print / Fax servers is 192.0.0.192. To change it, use the print front panel (if applicable), the BRAdmin application or let your DHCP server allocate an IP address to the MFC.
2. Refer to 'chapter 1' of this user guide to learn how to configure the IP address on your MFC.
3. The default password for Brother Print / Fax servers is "access".
4. The default name for a Brother Print / Fax server is usually BRN_XXXXXX (where XXXXXX is the last six digits of the Ethernet address of the Print / Fax server).
5. When configuring the PRINTCAP file, pay particular attention to the service names, BINARY_P1 and TEXT_P1.

TCP/IP

Brother Print / Fax servers appear to the network as a UNIX host computer with a unique IP address running the lpd, line printer daemon, protocol. As a result, any host computer that supports the Berkeley remote LPR command can spool jobs to Brother Print / Fax servers without the need for any special software on the host computer. For special applications, raw TCP ports are also available.

The Brother NC-8100h Print / Fax server also support the FTP protocol. This protocol can be used to send print jobs from Unix systems.

The Brother Print / Fax server is pre-configured to run on a TCP/IP network with a minimum of setup. The only mandatory configuration the Print / Fax server is the allocation of an IP address, which can be either automatically assigned using DHCP, BOOTP etc., or manually assigned using the ARP command, BRAdmin, the MFC's front panel, etc.



For setting the IP address of the Print / Fax server, refer to chapter 1 of this user guide.

General TCP/IP UNIX Host Configuration

The configuration process for most UNIX systems is described in the following steps. As this process varies, we recommend that you refer to your system documentation (or man pages) for additional information.

1. Configure the `/etc/hosts` file on each UNIX host that needs to communicate with the Print / Fax server. Use your favorite editor to add an entry to the `/etc/hosts` file containing the IP address and node name of the device. For example:

```
192.189.207.3      BRN_310107
```

The actual format of the entry may vary depending on your system, check your system documentation and also note the format of other entries in the `etc/hosts` file.



The node name in this file does not necessarily need to be the same as the one that is actually configured into the Brother Print / Fax server (the name that appears on the printer configuration page), however, it is good practice to make the names the same. Some operating systems, such as HP/UX, do not accept the "_" character in the default name, for these systems you must use a different name).

In any case, the node name in the `/etc/hosts` file must match the node name in the `/etc/printcap` file.

Some systems such as HP/UX and AIX allow you to enter the IP address as the host name when setting up the print queue. If this is the case, you do not need to configure the hosts file.

2. Choose which Print / Fax server service you want to use. There are several types of services available on Brother Print / Fax servers. Binary services pass data through unmodified and are therefore required for PCL or PostScript rasterized graphics printouts. Text services add a carriage return at the end of each line for proper formatting of UNIX text files (which end in linefeed and do not have carriage returns). The text service can also be used for non-rasterized graphics, such as ASCII PostScript graphics or many types of PCL graphics.

Choose one of the available services (a service name will be used in step 3):

BINARY_P1	Binary data
TEXT_P1	Text data (CR added)

You may set up multiple print queues on your UNIX host computer for the same Print / Fax server, each one with a different service name (for example, one queue for binary graphics jobs and one for text jobs).

3. Configure the `/etc/printcap` file on each host computer to specify the local print queue, the Print / Fax server name (also called remote machine or `rm`), and the Print / Fax server service name (also called remote printer, remote queue, or `rp`), and the spool directory.



This step applies to the majority of UNIX systems, including Linux, Sun OS (but not Solaris 2.xx), Silicon Graphics (`lpr/lpd` option required), DEC ULTRIX, DEC OSF/1, and Digital UNIX. SCO UNIX users should follow these steps, but should also refer to the SCO UNIX Configuration section. Users of RS/6000 AIX, HP/UX, Sun Solaris 2.xx, and other systems that do not use the `printcap` file should skip to section 3-a. SCO user's should also skip to section 3a (SCO uses the `printcap` file, but this file is automatically configured via the `rlpconf` command).

An example of a typical printcap file:

```
laser1|Printer on Floor 1:\
:lp=:\
:rm=BRN_310107:\
:rp=TEXT_P1:\
:sd=/usr/spool/lpd/laser1:
```



Make sure this information is added to the end of the printcap file. Also make sure that the last character in the printcap file is a colon ":".

This will create a queue named `laser1` on the host computer that communicates to a Brother Print / Fax server with a node name (`rm`) of `BRN_310107` and a service name (`rp`) of `TEXT_P1` printing text files to a Brother printer through spool directory `/usr/spool/lpd/laser1`. If you are printing binary graphics files, you would use the service `BINARY_P1` instead of `TEXT_P1`.



The `rm` and `rp` options are not available on some UNIX systems, so if necessary check your documentation (or man pages) to determine the equivalent options.

Users of Berkeley-compatible UNIX systems can use the `lpc` command to obtain the printer status:

```
%lpc status
laser1:
queuing is enabled
printing is enabled
no entries
no daemon present
```

Users of AT&T-compatible UNIX systems can generally use the `lpstat` or `rlpstat` commands to obtain similar status information. Because this procedure varies from system to system, refer to your system documentation for the exact usage.

4. Skip this section if you have completed Step 3, unless you have an SCO UNIX system.

If you have an HP/UX system, IBM RS/6000 AIX computer, or Sun Solaris 2.xx, there is no printcap file. This is also true for some other AT&T-based UNIX systems, as well as many VMS-based TCP/IP software packages (for example, UCX, TGV Multinet, etc.). On SCO systems, there is a printcap file, but it is automatically configured by the `rlpconf` command. Most of these systems generally use a printer setup program to define the service name (remote printer), the Print / Fax server name (remote machine) or IP address, and the local queue name (spool directory). Refer to the appropriate section depending on your version of Unix.

Linux Configuration

If you do not wish to use the command line interface to configure your Linux distribution, you may wish to use the Linux Printer System Manager application on your GUI. To do this, do the following:

1. From the Linux Printer System Manager screen, click the "Add" button.
2. You will now be asked to specify which Printer type you are using, select the "Remote Unix (lpd) Queue" option and click "OK".
3. You must now specify the remote host name, remote queue name and the input filter to use.
4. The "Remote Host" name is the IP address of the printer, or the name from the hosts file which corresponds to the IP address of the printer.
5. The "Remote Queue" name is the service name that the printer will use when processing the data. Generally we recommend that you use the name "BINARY_P1", however, if you are planning to send text documents that do not have a carriage return and a line feed, then use "TEXT_P1".
6. Select the appropriate "Input Filter" from the list of available printers on your particular build of Linux.

In order to make your settings work, select the "Restart lpd" option. As soon as the lpd server restarts, you will be able to send printed documents from your server.

HP/UX Configuration

In the case of HP/UX10.xx, the sam program is used to set up the remote printer. The steps are as follows:

1. Execute the sam program. From the list of options, select Printers and Plotters.
2. Select LP Spooler.
3. Select Printers and Plotters.
4. Select Actions and then Add Remote Printer/Plotter.
5. Enter any name as the Printer Name (this will be the name of the print queue).
6. Enter the IP address of the Print / Fax server as the Remote System Name.
7. Enter the desired Print / Fax server service name as the Remote Printer Name.
8. Check the box next to Remote Printer is on BSD system.
9. You may accept the default values for the remaining items.
10. Click OK to configure the printer.

You should now be able to print using the lp-d command with the printer name.

If you are using the HP distributed print service, the configuration procedure is slightly different because you are sending the print jobs to a file server, which in turn spools the job to the Print / Fax server. You must therefore know the name of the file server (spooler host) in addition to the above information. You will add a physical and a remote printer and a remote printer, and then assign a logical printer to the remote printer (a unique name that does not match any other name). To print, use the lp -d command with the logical printer name.

Earlier versions of HP/UX use similar procedures to 10.xx users:

1. Enter sam and select Peripheral Devices and then Add Remote Printer (not Networked printer).
2. Enter the following remote printer settings (the other settings do not matter):
3. Line printer name (user-selectable).
4. Remote system name (the Print / Fax server name; must match what is in hosts file or use Print / Fax server IP address).
5. Remote printer queue (Printserver binary or text service name, e.g. BINARY_P1 or TEXT_P1).
6. Remote Printer is on a BSD System (Yes).

IBM RS/6000 AIX Configuration

The RS/6000 AIX operating system uses the smit program to set up the remote printer. The procedure is as follows for AIX 4.0 and later:

1. Enter smit and select "devices".
2. Select "Printer/Plotter".
3. Select "Print Spooling".
4. Select "Add a Print Queue".
5. Select "Remote".
6. Enter the following Remote Printer Settings:

Name of queue (user selectable)

Host name of Remote Printer (Print / Fax server name; must match name in /etc/hosts file or use the Print / Fax server IP address)

Name of queue on remote printer (Print / Fax server binary or text service name, eg. BINARY_P1 or TEXT_P1).

Type of print spooler. BSD (press the LIST button and choose BSD)

The procedure for pre-V4.0 systems is as follows.

1. Enter smit and select "devices".
2. Select "printer/plotter".
3. Select "manage remote printer subsystem".
4. Select "client services".
5. Select "remote printer queues".
6. Select "add a remote queue".
7. Enter the following remote queue settings:
8. Name of queue to add (user selectable)
9. Activate the queue (Yes).
10. Destination host (Print / Fax server name; must match name in /etc/hosts file or use the Print / Fax server IP address)
11. Name of queue on remote printer (Print / Fax server binary or text service name, eg. BINARY_P1 or TEXT_P1)
12. Name of device to add (user selectable; for example lp0)

Sun Solaris 2.x Configuration

Sun Solaris 2.x uses the `lpsystem` and `lpadmin` programs for remote printer configuration:

```
lpsystem -t bsd prnservername
lpadmin -p queue -s prnservername!prnserver-service
accept queue      (not required on newer Solaris
systems)
enable queue      (not required on newer Solaris
systems)
```

Where `queue` is the name of the local print queue.

`prnservername` is the name of the Print / Fax server (must match the entry in the `/etc/hosts` file or IP address).

`prnserver-service` is the Print / Fax server `BINARY_P1` or `TEXT_P1` service.

If this is the first printer configured, you must also use the `lpsched` command prior to the `accept` command.

As an alternative, you may use Printer Manager in the `Admintool` utility under `OpenWindows`. Select `Edit`, `Add`, and `Add Access to Remote Printer`. Then enter the Print / Fax server name in the format

`prnservername!\prnserver-service` as described above. Make sure that the Printer Server OS is set to `BSD` (the default setting), and click `Add`.

Note that we recommend that you use the `/etc/hosts` file for the printer name rather than `NIS` or other name services. Also note that due to a bug in the Sun `lpd` implementation on Solaris 2.4 and earlier releases, you may experience problems printing very long print jobs. If this is the case, a workaround is to use the raw TCP port software as described later in this chapter.

SCO UNIX Configuration

To configure a printer in version Version 5.x of SCO Unix, use the SCOADMIN program.

1. Select Printers and then Print Manager.
2. On the menu select Printer and then Add Remote followed by Unix...
3. Enter the IP address of the Print / Fax server and type in the printer name to be used to spool to.
4. Deselect "Use External remote Printing Protocol...".
5. Edit the /etc/printcap file to include formfeed add the text rp=lpaf .

SCO UNIX requires TCP/IP V1.2 or later to work with Brother Print / Fax servers. You must first configure the /etc/hosts and /etc/printcap files as described in step 2. Then run the sysadmsh program as follows:

1. Select Printers.
2. Select Configure.
3. Select Add.
4. Enter the name of the print queue you entered in the /etc/printcap file as the Printer name.
5. Enter anything as the Comment, and Class name.
6. For the Use printer interface select "Existing".
7. Press the F3 key to get a list of available interface, and select the desired one as the Name of interface using the cursor keys ("Dumb" is a good choice).
8. Select "Direct" as the Connection.
9. Enter the desired Device name (/dev/lp generally works).
10. Select "Hardwired" as the Device.
11. Select "No" for the Require banner field.

Older SCO Unix Systems

The Brother NC-8100h Print / Fax servers supports the FTP protocol. Earlier SCO Unix systems are often configured to print using the FTP protocol.

DEC TCP/IP Servers for VMS(UCX)

You need to run the `sys$system:ucx:$lprsetup` command, specify a printer name, and then enter the Print / Fax server IP address as the remote system name. Specify one of the Print / Fax server services (see beginning of this section for options) as the remote system printer name (accept the defaults for other questions).

TGV's Multinet

TGV's Multinet requires you to run the `MULTINET CONFIGURE /PRINTERS` command, then use the `ADD` command to add a printer, specifying the Print / Fax server IP address, a protocol type of LPD, and one of the service options described at the beginning of this section as the remote print queue.

Wollongong's PATHWAY

First make sure that you have the Access option with `lpd` enabled. Then enter the Print / Fax server name and IP address in the `TWGTCP:[NETDIST.ETC]HOSTS` file, run the `LPGEN` program, and execute the command: `add queue/rmachine=prnservername/rprinter=prnservername`, where `queue` is the name of the queue, `prnservername` is the Print / Fax server name from the hosts file, and `prnservername` is the Print / Fax server service name.

IBM/AS400

To use a Brother Print / Fax server with an IBM AS/400 running IBM's TCP/IP gateways services for OS/400 (the OS/400 system must be v3.1 or later).

Use the `CFGTCP` command at your OS/400 prompt to add the Print / Fax server's TCP/IP address to the AS/400 host table.

Use the following one-line OS/400 command to create the LPD queue:

```
CRTOUTQ OUTQ(<queuename> RMSTSYS
(*INTNETADR) RMTPRTO(<service>)
AUTOSTRWTR(1) CNNTYPE(*IP) DESTTYPE (*OTHER)
MFRTYPMDL (<driver>)
INTNETADR('<ipaddress>') TEXT
('<description>')
```

where `<queuename>` is the new AS/400 print queue name, `<service>` is the Print / Fax server service name, `BINARY_P1` or `TEXT_P1`, `<driver>` is the OS/400 printer driver name (`*HP4` is recommended if in doubt), and `<ipaddress>` is the IP address of the Print / Fax server. Note that the IP address and description must be enclosed in single quotes.

Other Systems

Other systems use similar programs to set up Print / Fax servers. These programs will generally ask for the following information:

Requested information:	You should use:
remote printer	Binary or Text service name
remote host computer name	Any name (must match the name in the printcap file, if any) or in some cases, you may enter the Print / Fax server IP address here
remote host IP address	IP address of Print / Fax server.

Technical support specialists for these companies can usually answer configuration questions if you provide them with the equivalent UNIX configuration information (tell them that the Print / Fax server looks like a remote UNIX host computer running the lpd line printer daemon).

If you have not created a spool directory for the Brother Print / Fax server on your UNIX host computer, you will need to do so now (the printer setup utilities in HP/UX, AIX, Solaris 2.xx, and other systems will automatically create the spool directory). The lpd spool directory is usually located in the /usr/spool directory (check with your system manager to see if the location is different for your system). To create a new spool directory, use the mkdir command. For example, to create a spool directory for the queue laser1, you would enter:

```
mkdir /usr/spool/lpd/laser1
```

On some systems it is also necessary to start the daemon. This is done on Berkeley-compatible UNIX systems with the lpc start command as shown in the following example:

```
lpc start laser1
```


Other Sources of Information

1. Visit <http://solutions.brother.com/> for more information on network printing.
2. Refer to chapter 1 of this user guide to learn how to configure the IP address of the printer.

CHAPTER THIRTEEN

Troubleshooting



Overview

This chapter describes procedures for troubleshooting problems you may encounter with a Brother Print / Fax server, it is divided into the following sections:

1. Installation Problems
2. Intermittent Problems
3. Protocol-Specific Troubleshooting
4. Internet Fax Troubleshooting

Installation problems

If you cannot print over the network, check the following:

1. Make sure that the printer is powered on, is on-line and ready to print.

Verify that the printer and the configuration are good by printing the configuration page. Refer to the NC-8100h Quick Network Setup Guide for information on how to print the configuration page on your Print / Fax server. If the test fails, check:

- a. If the LED is not blinking after connected to the network, then the network firmware settings may be corrupted. Please refer to step 3.
 - b. In this event, try to restore the factory default settings of the Print / Fax server by pressing the TEST switch on the back panel of the printer for longer than 5 seconds. Once you have done that, switch the printer off and then on again, and try to print out the configuration page.
2. If the configuration page prints but you cannot print documents, try the following.



If none of the following steps are successful, there is almost certainly a hardware or network problem!

a. If you are using TCP/IP:

Try pinging the Print / Fax server from the host operating system command prompt with the command:

```
ping ipaddress
```

Where ipaddress is the Print / Fax server IP address (note that in some instances it can take up to two minutes for the Print / Fax server to load its IP address (after setting the IP address). If a successful response is received, then proceed to the UNIX, TCP/IP Windows® NT®/LAN Server, Windows® 98/95/Me Peer to Peer (LPR), Internet Printing or Web Browser troubleshooting section. Otherwise, proceed to step 3, and then go to TCP/IP Troubleshooting section.

b. If you are using Novell system:

Verify that the Print / Fax server can be seen on the network. To do this, login as the SUPERVISOR (not as someone with supervisor privileges) or ADMIN (for Netware 4 or later servers), go into PCONSOLE or NWADMIN, select PRINT / FAX SERVER INFORMATION, and select the name of the Print / Fax server (make sure that you have entered the Print / Fax server name). If you can see Print / Fax server Status and Control in the menu, then the Brother Print / Fax server is visible to the network, proceed to the Novel NetWare Installation Troubleshooting Section. Otherwise, go to step 3.

c. If you are running Apple Talk for Macintosh:

Make sure that you can see the Print / Fax server name under the HL-1200/MFL-Pro icon in the Chooser. If it is visible, then the connection is good, so proceed to the AppleTalk for Macintosh Section. Otherwise, go to step 3.

3. If you cannot make any of the connections in step 2, check the following:
 - a. Make sure the printer is powered on and on-line.
 - b. Verify that the cabling, network connection, and print out a configuration page in the Network STATISTICS information to see if bytes are being transmitted and received.
 - c. Check to see if there is LED activity.
 - No Light:
If the LED (Link Activity) is off, then the Print / Fax server is not connected to the network.
 - Orange: Fast Ethernet
The LED will be Orange if the Print / Fax server is connected to a 100BaseTX Fast Ethernet network.
 - Green: 10BaseT Ethernet
The LED will be Green if the Print / Fax server is connected to a 10BaseT Ethernet network.
The LED will blink if the Print / Fax server is receiving or transmitting data.
When the Print / Fax server is receiving packets continuously, the LED might look 'off'.
If you are using a repeater or hub, make sure that SQE (heartbeat) is turned off at the hub (if applicable). Also, if you have a hub or multi-port repeater, verify that the hub or repeater port is good by trying the Print / Fax server on a different port or on the other hub or multi-port repeater.
4. If you have a bridge or router located between the Print / Fax server and host computer, make sure that the device is set up to allow the Print / Fax server to send and receive data from the host. For example, a bridge can be set up to only allow certain types of Ethernet addresses to pass through (a process known as filtering); therefore, such a bridge must be configured to allow Brother Print / Fax server addresses. Likewise, a router can be set up to pass only certain protocols, so be sure that the desired protocol can be passed through to the Print / Fax server.

Intermittent Problems

If the Print / Fax server and printer start up OK, but you intermittently have problems printing, check the following:

1. If you can print small jobs but large graphics jobs are distorted or incomplete, make sure that you have adequate memory in your printer and the latest printer driver installed on your computer. The latest Brother printer drivers can be downloaded from <http://solutions.brother.com>.
2. Check the individual protocol troubleshooting sections in this chapter for additional causes of intermittent printer problems.

TCP/IP Troubleshooting

If you are using TCP/IP and cannot print to the Print / Fax server and you have checked the hardware and network as described in the previous steps, then check the following:



It is always a good idea to try following in order to eliminate the possibility of Setup errors.

Turning off the printer and then again,
Deleting and recreating the Print / Fax server and creating a new print queue in order to eliminate the possibility of setup errors.

1. The problem may be the result of mismatched or duplicate IP address. Verify that the IP address is correctly loaded into the Print / Fax server (via the configuration page). Make sure that no other nodes on the network have this address (**DUPLICATE IP ADDRESS ARE THE BIGGEST CAUSE OF TCP/IP PRINTING PROBLEMS**).
2. If you used BRCONFIG, NCP or ccr to enter the IP address, make sure that you exited the remote console properly with a CTRL-D or EXIT and that you turned the printer off and then again (it may take up to two minutes for the IP address to take effect).
3. Make sure that the TCP/IP protocol of the Print / Fax server is enabled.
4. If you used rarp, make sure that you started the rarp daemon on any workstation using the rarpd, rarpd-a, or equivalent command. Verify that the /etc/ethers file contains the correct Ethernet address and that the Print / Fax server name matches the name in the /etc/hosts file.
5. If you used bootp, make sure that you started the bootp daemon on any UNIX workstation and bootp is enabled (i.e., the "#" is removed from the bootp entry) in the /etc/bootptab file is correctly configured.
6. Also verify that host computer and the Print / Fax server are either on the same subnet, otherwise that the router is properly configured to pass data between the two devices.

UNIX Troubleshooting

1. Make sure that the `/etc/printcap` file (if applicable) is typed in correctly. In particular, look for missing ":" and "\" characters, because a small error anywhere in the file can have major consequences. Also check the `/usr/spool` directory to make sure that you have created a valid spool directory.
2. If you are using a Linux operating system, the X-Window Print tool program that is included with Linux may not properly configure the `etc/printcap` file for `lpd` operation, then you might also edit the `etc/printcap` file and change the following line in the entry for the printer.

```
if
:lp = /dev/null: \

then to
:lp = :\
```

3. If you are using a Berkeley-based UNIX, make sure that the daemon is started on Berkeley based systems with the command `lpc start printer`, where `printer` is the name of the local print queue.
4. If you are using an AT&T-based UNIX, make sure the printer is enabled (`enable printer`, where `printer` is the name of the local print queue).
5. Make sure that the `lpr/lpd` remote line printer service are running on the host computer (refer to your host computer documentation for information on how to do this).

6. If you are having trouble printing more than one job at a time, try increasing the IP timeout using the SET IP TIMEOUT command or using BRAdmin.
7. If text or PCL jobs are run together, try setting the service (remote printer) with EOT set to string number 2 (<ESC>E). For example:


```
SET SERVICE BRN_XXXXXX_P1 EOT 2
```
8. If the lines of a text file are staggered, make sure that you have specified a remote printer (rp) name of TEXT in your /etc/printcap file.
9. If you are using Sun Solaris V2.4 or earlier, there is a bug which causes long print jobs to fail when using a Print / Fax server. If you are having trouble printing long jobs (over 1MB), add the line mx#0 to your etc/printcap file entry.
10. If you cannot print from DEC TCP/IP Service for VMS (UCX), make sure that you have version 2.0B or later of this software, because earlier versions will not work with Brother Print / Fax servers.

Windows[®] NT[®]/LAN Server (TCP/IP) Troubleshooting

If you are having trouble printing with Windows[®] NT[®] or LAN Server, check the following:

1. Make sure that TCP/IP and TCP/IP print service are installed and running on the Windows[®] NT[®] system or the LAN Server file server.
2. If you are using DHCP and you have not created a reservation for the Print / Fax server, make sure that you enter the NetBIOS name of the Print / Fax server in the "Name or address of server providing lpd" box.

Windows[®] 95/98/Me Peer to Peer Print (LPR) Troubleshooting

If you are having trouble printing on a Windows[®] 95/98/Me Peer-to-Peer network (LPR method), check the following:

1. Make sure that the Brother LPR Port driver is correctly installed and configured according to the Windows[®] 95/98/Me Peer-to-Peer chapter 7.

You may find that during the installation of BLP software, the screen that prompts you for a Port name is not displayed. This may happen on some Windows[®] 95/98/Me computers. Press the ALT and TAB keys to make it appear.

Windows® 95/98/Me Peer-to-Peer (HP JetAdmin compatible method) Troubleshooting

If you are having trouble printing on a Windows® 95/98/Me Peer-to-Peer network, check the following (HP JetAdmin compatible method):

1. If the Print / Fax server does not show up under JetAdmin on a Windows® 95/98/Me Peer-to-Peer network, try removing all of the Windows® 95/98/Me network software from the Network Control panel and then reinstalling them as follows:
 - First install the IPX/SPX-Compatible Protocol (or the TCP/IP protocol if you are using a later version of JetAdmin), the Client for Microsoft Networks, and the network adapter card driver.
 - Install the Latest HP JetAdmin software.
 - Restart the system, and then add the HP JetAdmin service.

Windows® 95/98/Me/NT®4.0 Peer-to-Peer Print (NetBIOS) Troubleshooting

If you are having trouble printing on a Windows® 95/98/Me/NT®4.0 (or later) Peer-to-Peer network (NetBIOS), check the following:

1. Make sure that the Brother NetBIOS Port driver is securely installed and configured according to the Windows® 95/98/Me/NT®4.0 Peer-to-Peer (NetBIOS) chapter 7. You may find that during the installation of the port driver, the screen that prompts you for a Port name is not displayed. This happens on some Windows® 95/98/Me/NT®4.0 computers. Press the ALT and TAB keys to make it appear.
2. Make sure that the Print / Fax server is configured to be in the same workgroup or domain as the rest of your computers. It may take several minutes for the Print / Fax server to appear in the network neighborhood.

Brother Internet Print (TCP/IP) Troubleshooting

1. The first step in troubleshooting is to make sure that you have a valid E-mail connection on both the sending PC and the receiving Print / Fax server. Try sending an E-mail message from the PC to a user at the remote site who can receive mail via the POP3 server. If this does not work, there may be an E-mail configuration problem on the PC, on the local E-mail server, or on the remote POP3 server. Double check to make sure that the E-mail parameters that you configured on the PC and on the remote Print / Fax server match those that are configured on the E-mail servers.
2. If you can print small files OK but are having problems printing large files, the problem may be in the e-mail system! Some E-mail systems have difficulties printing large files. If the file does not reach its destination intact, then the problem is with the E-mail system.
3. You can also enable the partial e-mail print facility on your client PC, this will split the e-mail up into fragments which should then not overwhelm your e-mail server. To do this, select the property dialog of the Brother Internet Print Port.

Windows® 95/98/Me/2000 FTP/IPP Troubleshooting

Want to use a different Port number other than 631

If you are using Port 631 for IPP printing, you may find that your firewall may not let the print data through. If this is the case, use a different port number (port 80), or configure your Firewall to allow Port 631 data through.

To send a print job using IPP to a printer using Port 80 (the standard HTTP port) enter the following when configuring your Windows® 2000 system.

`http://ip_address/ipp`

Get More Info option in Windows® 2000 not working

If you are using a URL of:

`http://ip_address:631` or `http://ip_address:631/ipp`, the “Get More Info” option in Windows® 2000 will not function. If you wish to use the “Get More Info” option use the following URL:

`http://ip_address`

This will then force Windows® 2000 to use Port 80 to communicate with the Brother Print / Fax server.

Windows® 95/98/Me clients not able to get the driver from a Windows® 2000 system.

You must be using version 4.0 or later of Internet Explorer and the “Microsoft Internet Print Services” software must be installed on your client computers.

Novell NetWare Troubleshooting

If you cannot print from NetWare and you have checked the hardware and network as described in the previous steps, first verify that the Brother Print / Fax server is attached to the server queue by going to PCONSOLE, selecting PRINT QUEUE INFORMATION, and then CURRENTLY ATTACHED SERVERS. If the Print / Fax server does not appear in the list of attached servers, then check the following:



It is always a good idea to try followings in order to eliminate the possibility of setup errors.

- Turning off the printer and then on again to force to rescan the Netware queue.
 - Deleting and recreating the Print / Fax server and creating a new print queue in order to eliminate the possibility of setup errors.
1. If you changed the login password, you must change the password in both the Brother Print / Fax server (using the SET NETWARE PASSWORD command if you are using the BRConfig software) or by using a web browser or the BRAdmin application and in the file server (using the PCONSOLE Print / Fax server Information Change Password command).
 2. If you created the print queue using PCONSOLE and instead of BRAdmin, make sure that you have enabled at least one NetWare file server using the SET NETWARE SERVER servername ENABLED command.
 3. Have you exceeded your NetWare user limit?
 4. Make sure that the Print / Fax server name you used in PCONSOLE exactly matches the name that is configured in the Print / Fax server, and make sure it is defined as a Queue Server for the print queue.
 5. If you are running both 802.3 and Ethernet II frames on different file servers on your network, there is a possibility that the Print / Fax server may not make a connection to the desired file server. Try forcing the frame type to the desired one using the SET NETWARE FRAME command from the Print / Fax server remote console or using BRAdmin.
 6. If you are using DOS CAPTURE statement and losing portions of your print job, try setting the TIMEOUT parameter in your CAPTURE statement to a higher value (at least 50 seconds for Windows®).

AppleTalk Troubleshooting

If you cannot print from an AppleTalk for Macintosh computer and you have checked the hardware and network as described in the previous steps, then check the following:

1. Make sure that you are running Phase 2 AppleTalk and that you have selected the correct network interface from the AppleTalk Control Panel on the Macintosh.
2. Make sure that the AppleTalk protocol of the Print / Fax server is enabled.
3. Verify that you have selected the correct AppleTalk zone. Because the Print / Fax server gets its zone information from router broadcasts, it may not be in the zone you expect, and will therefore not show up in the Chooser. If this is the case, you may need to force the zone name using a web browser or the SET APPLETALK ZONE command from TELNET.

DLC/LLC Troubleshooting

If you are having trouble printing with DLC/LLC, check the following:

1. Make sure that the DLC/LLC protocol is enabled using either BRAdmin, a web browser or TELNET.
2. Make sure that the MAC address of the Windows[®] setting is as same as the print configuration page result.

Web Browser Troubleshooting (TCP/IP)

1. If you can not connect to the Print / Fax server using your web browser it may be worth checking the Proxy Settings of your browser. Look in the Exceptions setting and if necessary, type in the IP address of the Print / Fax server. This will stop your PC from trying to connect to your ISP or proxy server every time you wish to look at the printer server.
2. Make sure that you are using the proper Web Browser, we recommend Netscape Navigator version 4.xx or later/ Microsoft Internet Explorer version 4.xx or later.

Internet Fax Troubleshooting

1. If there is a mail delivery error while sending an Internet Fax, the mail server will send an error message back to the FAX/MFC and the error message will be printed. If there is an error while receiving mail, an error message is printed (Ex. The message being sent to the MFC was not in a TIFF-F format.) All documents transmitted to the MFC via E-mail must be in a TIFF-F format.
2. If an error message is printed while receiving E-mail text from a PC "ATTACHED FILE FORMAT NOT SUPPORTED" the senders mail application may not be set for a "Plain Text" format or "Vcard" the virtual business card feature may be set to ON.
3. If the receiver's mail system is not compatible with the MIME format, you cannot transmit a document to the receiver. Depending on the receiver's server, there are some cases that the error mail will not be sent back.
4. Messages cannot be received in an HTML format. This format is not supported. All messages must be received in a TIFF-F Format.
5. If the size of a documents image data is huge, there is a possibility of unsuccessful transmission if the system administrator has imposed a limit on the maximum size of E-mails and their attachments. The document you are sending should be separated into smaller documents that will be accepted by the mail server. (Ex. A 42 page document of the CCITT#1 test chart is approximately 1Mbyte in size).
6. If you do not receive E-mail, check the Auto Polling setting and Polling frequency.
7. If you cannot retrieve mail from the mail server, check the settings for the POP3 server and Mailbox name. Check that the POP3 password is entered correctly. This setting is case sensitive.
8. If Relay Broadcast is not forwarding E-mail to a G3 Fax, check the Relay Broadcast settings and Relay Domain registration. A Relay Domain must be entered for this function to work.
9. The Relay Broadcasting and Broadcasting features cannot be used at the same time.
10. Relay Broadcast can support the relay of a document up to a maximum of 48 Fax machines through conventional telephone lines. If sending to more than 48 locations the sender must divide the transmission locations into 48 locations or less for each relay broadcast.
11. When receiving E-mail messages from the POP server, the MFC can receive a maximum of 32 mail messages. If there are more than 32 mail messages in the POP server, the MFC will receive a maximum of 32 mail messages and then receive the remaining after the next polling interval.
12. The NC-8100h Print / Fax Server requires a portion of the user memory for operation. With the NC-8100h installed the number of Fax sheets that can be sent or received will be reduced (by approximately 30 pages of the brother No1 Test Chart) from the standard MFC capacity.

CHAPTER FOURTEEN

Brother Network PC Fax Software

Installing and using the Brother Network PC Fax Software

Overview

Important Information:

Please check Brother Solutions centre for the latest updates available for Brother Network PC Fax. Visit

<http://solutions.brother.com/>

The Brother NETWORK PC FAX feature allows you to use your PC to send any application or document file as a standard fax. You can create a file in any application on your PC, and then send it as a NETWORK PC FAX. You can even attach a cover page note. All you have to do is set up the receiving parties as Members or Groups in your PC FAX Address Book or simply enter the destination address or fax number into the User Interface. You can use the Address Book Search feature to quickly find members to send your fax.

Quick Tips:

Please refer to the “**Important Information**” sections before using Brother Network PC Fax.

1. Ensure that Network PC Fax is set to “Enable” in the Sending tab of Setup.
2. To send an E-mail from Brother Network PC Fax you can either enter the E-mail address in the To: field or in the display for Facsimile Style using the PC keyboard or select the member from the Address Book. The member must have E-mail selected as the chosen destination for that member.
3. To send an Internet Fax from Brother Network PC Fax you can either enter the Internet Fax address in the To: field or in the display for Facsimile style using the PC keyboard or select the member from the Address Book. The member must have MFC Mail Address selected as the chosen destination for that member.
4. To send a Network Fax simply select a member from the address book or enter the fax number into the User Interface with the PC keyboard. The member must have Fax selected as the chosen destination for that member.

Installing Network PC Fax

Important Information:

If the installer screen does not appear automatically select Start | Run and type X:/setup.exe (X:/ should be the drive letter of your CD ROM drive on your PC).

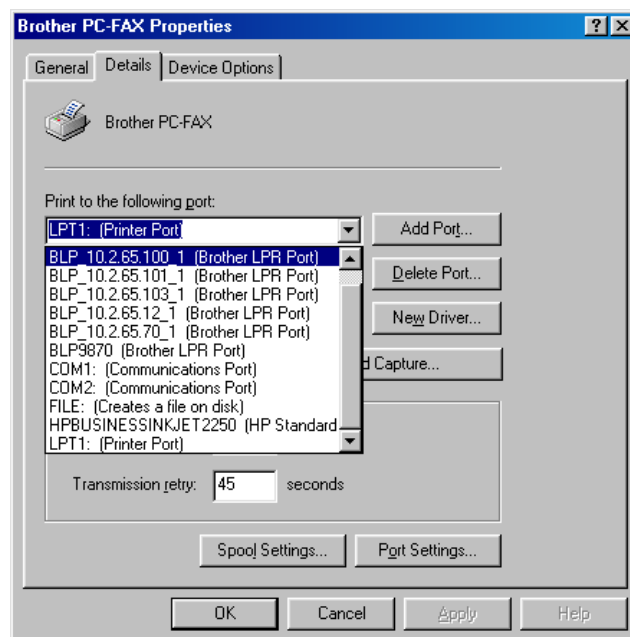
Insert the CDROM supplied with your Brother MFC, the installer screen will automatically start. From the installer screen select your model and language (if these options are present), then select Network Applications for (optional NC-8100h Print / Fax Server), then select Brother PC Fax and follow the screen prompts. When prompted reboot your PC.

It is now necessary to install the Brother Network Print Software from the CDROM so you need to reinsert the CDROM. Select Network Applications for (optional NC-8100h Print / Fax Server), then select Network Print Software. Follow the screen prompts, you will be prompted for the IP address of the NC-8100h. If in any doubt contact your Network Administrator.

Note: If you have already installed the MFC as a network printer you may have already installed the Brother Network Print Software.

To check select Start | Settings | Printers.

Highlight the Brother PC Fax driver from the list and right click the mouse button and select properties then select the details tab.



Select the "Print to Following Port" as illustrated above, if Brother LPR Port is listed for your MFC you can just specify for Brother Network Fax to use this previously installed port. If you have multiple Brother LPR ports please ensure that you select the correct port address. If in any doubt please contact your Network Administrator.

Setting Up User Information

1. Access the User Information from the FAX Sending dialog box by clicking



OR—From the Start menu, select Program File, Brother, Brother MFL Pro, and then select PC-FAX Setting.

The Brother PC Fax Setup dialog box will appear:

The screenshot shows the 'Brother PC-FAX Setup' dialog box with the 'User Information' tab selected. The dialog box contains several text input fields for user details. The fields are filled with the following information:

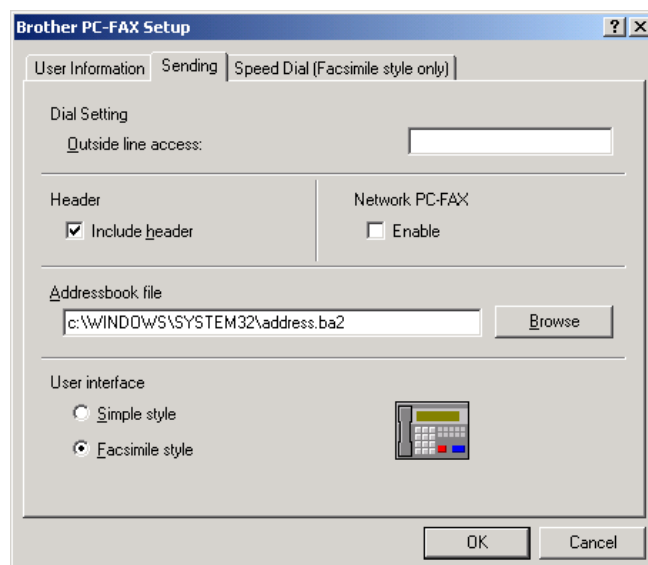
Field	Value
Name:	John Doe
Company:	International Spring Board Assoc.
Department:	U56
Phone Number:	908-555-1212
Fax Number:	908-555-1212
E-mail:	JDoe@springboard.org
Address 1:	123 Rose Hill Drive
Address 2:	Potsville, NJ 08888

At the bottom right of the dialog box are 'OK' and 'Cancel' buttons.

2. Enter the required User information. This information is required to create the Fax Header and Cover Page.
3. To save the User Information, click OK.

Setting Up Sending Information

Brother Network PC Fax can be configured through the Sending tab.



Important Information
Please ensure that Network Fax is “Enabled”.

This software can be used in a network environment and with a locally connected machine. It is important that when used in a network environment the Network PC Fax is set to enable.

The include header option sends an additional page of information along with fax or E-mail data which contains user and subject information.

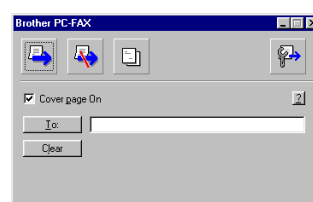
If the Network PC Fax is being used, a private telephone exchange system and an outside line access number is needed this can be pre programmed in the Dial Settings on the Sending Information page.

The user has the choice of two interfaces. To change the user interface change the interface setting above.

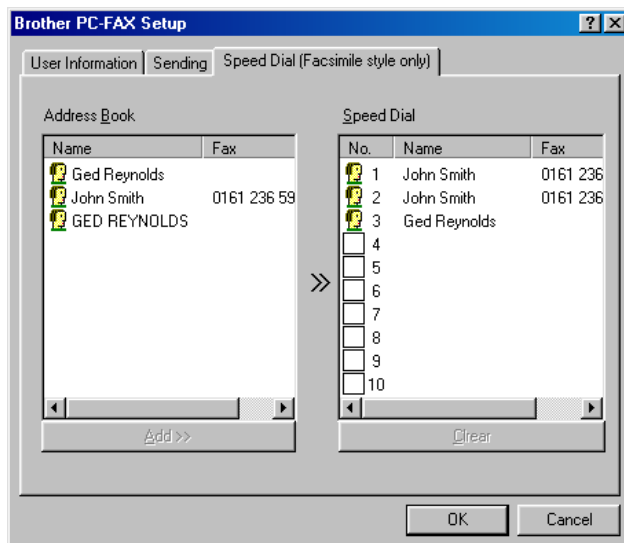
Facsimile Style



Simple Style



Setting Up Speed Dial



Access **the Speed Dial** tab from the **Brother PC-FAX Setup** dialog box by clicking the **Speed Dial** tab. (To use the feature you must select the Facsimile Style user interface.) You can register any address or group on one of the ten Speed Dial buttons.

To register an address on a Speed Dial location:

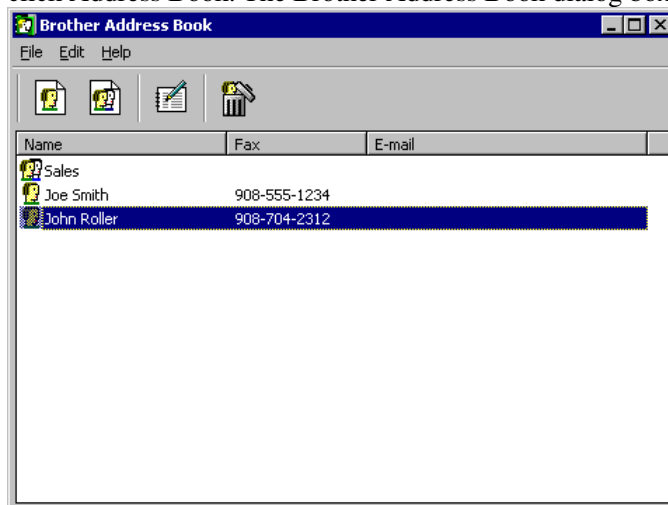
1. Click the Speed Dial location you want to program.
2. Click the address or group you wish to assign to the Speed Dial location.
3. Click the **Add>>** button to program the Speed Dial location.

To clear a Speed Dial location:

1. Click the Speed Dial location you want to clear.
2. Click the **Clear** button.


The Address Book

From the Start menu, select Program File, Brother, Brother MFL Pro, and then click Address Book. The Brother Address Book dialog box will appear:



Setting Up a Member in the Address Book

In the Brother Address Book dialog box you can add, edit and delete stored information for members and groups.

1. In the Address Book dialog box, click the  icon to add a member.
The Brother Address Book Member Setup dialog box will appear:

Important Information:
When creating the Address Book member please select the method of default delivery.

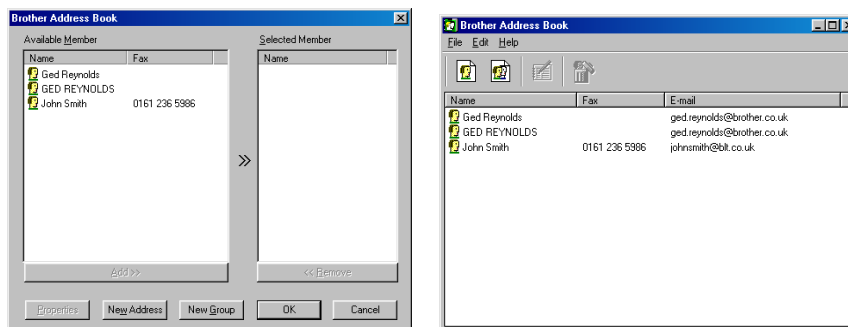
2. In the Brother Address Book Member Setup dialog box, type the member's information.

Name and Fax are required fields. You can also enter the an E-mail contact address and MFC address for the address book member Click the OK button to save the member's information.

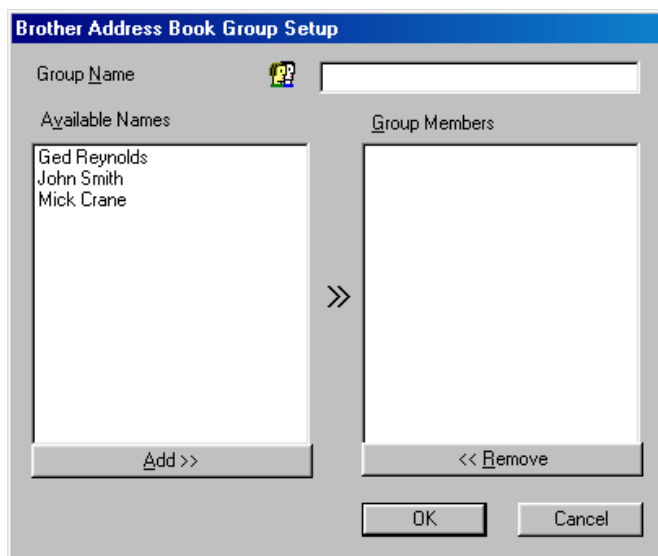
Setting Up a Group for Broadcasting

If you repeatedly send the same PC-FAX to multiple recipients, you can combine members into a Group.

1. In the **Brother Address Book** dialog box, click the “New Group” button to create a group.



2. The Brother Address Book Group Setup dialog box appears:



3. Type the name of the new group in the **Group Name** field.
4. In the **Available Names** box, select each member to be included in the Group, and then click **Add>>**.
5. Members you add to the group will be listed in the **Group Members** box.
6. After all the members have been added, click **OK**.

Editing Member Information**To edit a Member or Group:**

1. Select the Member or Group you want to edit.



2. Click the **Edit** icon.

3. Edit the Member or Group information.

4. Click **OK** to save your changes.

Deleting a Member or Group**To delete a Member or Group:**

1. Select the Member of Group you want to delete.



2. Click the **Delete** icon.

3. Click **OK** when the **Delete OK?** dialog appears.

Exporting the Address Book

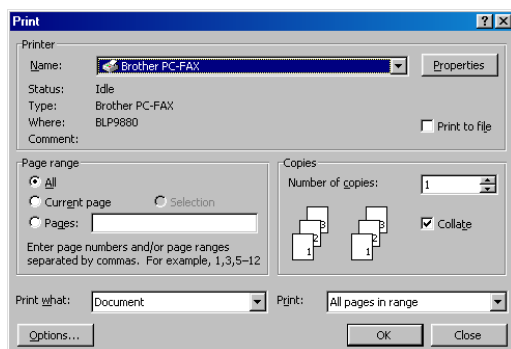
You can export the address book to an ASCII text file (*.csv).

To export the current telephone book:

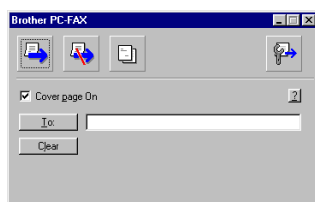
1. From the Address Book select **File**, point to **Export**, and then click **Text—OR**—Click **Vcard** and go to Step 5.
2. Select the data fields you wish to Export from the **Available Items** column, and then click **Add>>**.
3. If you are exporting to an ASCII file, select **Divide Character - Tab** or **Comma**. This selection inserts a Tab or Comma between each data field when it is Exported.
4. Select the **OK** button to save the data.
5. Type in the name of the file, and then select **Save**.
6. If you are creating a Vcard, you must first select the member.
7. Select items in the order you want them listed.

Sending a File as a PC FAX Using the Simple Style


1. Create a file in Word, Excel, Paint, Draw, or any other application on your PC.
2. From the **File** menu, select **Print**.
3. The **Print** dialog box will appear:




4. Select **Brother PC-FAX** as your printer, and then click **OK**.
5. The FAX Sending dialog box will appear:



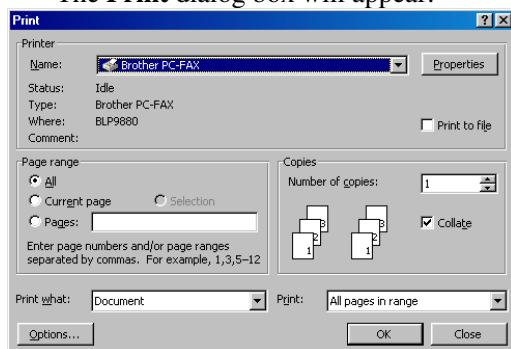
6. In the **To:** field, type the fax number of the receiving party. By click **To:** button, you can also use the Address Book to select destination fax numbers. If you made a mistake entering a number, click the **Clear** button to clear all entries.
7. To send a Cover Page and note, click the **Cover page On** check box.

8. When you are ready to send your fax, click the **Send**  icon.

9. If you wish to cancel the fax, click the  icon.

Sending a File as a PC FAX using the Facsimile Style

1. Create a file in Word, Excel, Paint, Draw, or any other application on your PC.
2. From the **File** menu, select **Print**.
The **Print** dialog box will appear:



3. Select **Brother PC-FAX** as your printer, and then click **OK**.
The FAX Sending dialog box will appear:
4. Enter a telephone number by using any of the following methods:
 - a. Enter the number using the numeric keypad.
 - b. Click any of the 10 **Speed Dial** buttons.
 - c. Click the **Address Book** button, and then select a Member or Group from the Address Book.

If you make a mistake you can use the **Clear** button to clear all the entries.



5. To include a cover page, check the **Cover Page On**. You can also click the icon to create or edit an existing cover page.
6. Click **Start** to send the fax.
7. If you wish to cancel the fax, click **Stop**.

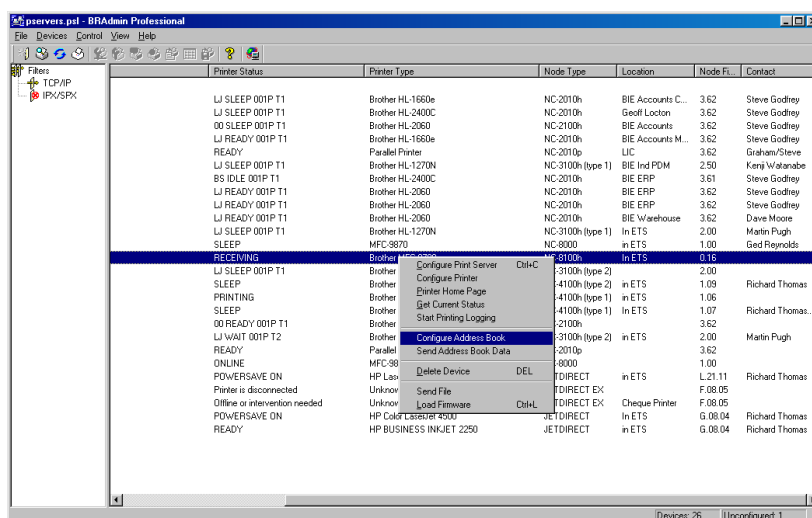
Redial:

If you wish to redial a number, press Redial to scroll through the last five fax numbers.

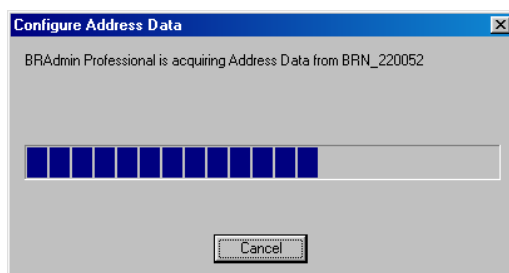
Updating other MFC's through the Network.

It is possible to program Brother MFC's on the network with either settings from an already programmed MFC or with data from the Brother Network PC Fax Address Book.

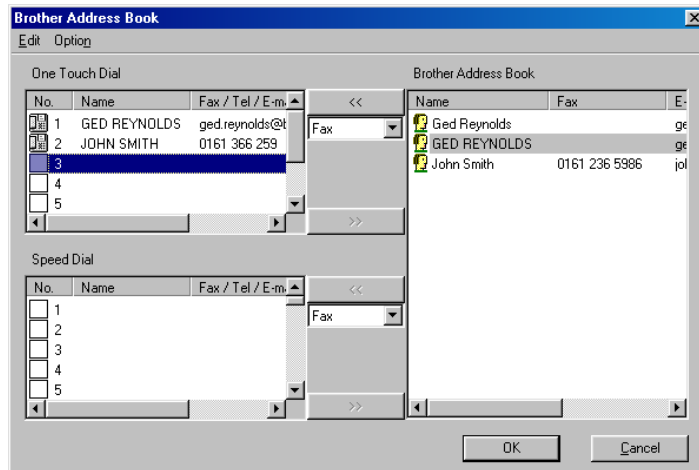
When Brother Network PC Fax is used from a PC that has BRAdmin Professional installed, an extra option appears in BRAdmin. By selecting a networked MFC in the BRAdmin main window and right clicking it you will be presented with an extra option, Configure Address Book.



When you select this option BRAdmin reads the telephone settings from that machine (if there are any programmed) into Brother PC Fax Address Book.

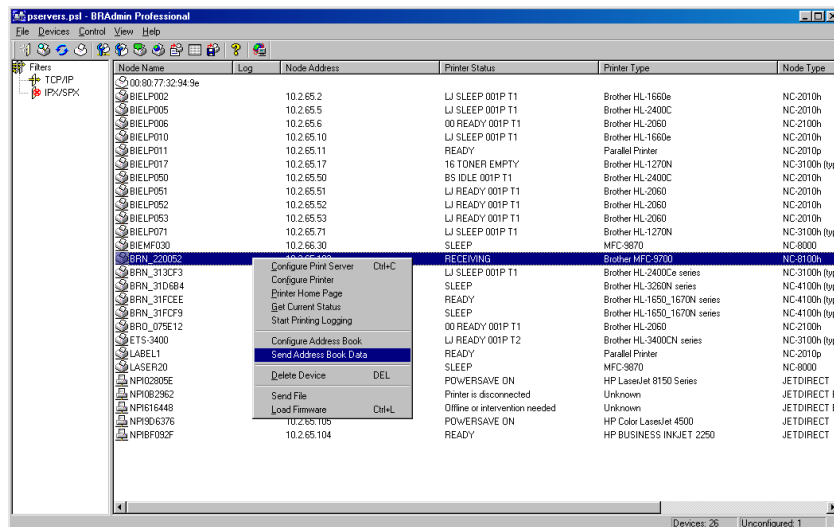


Illustrated below is the Brother Address Book, on the left are One Touch / Speed Dial numbers read from the machine. On the right is the Brother Address Book. It is now possible to allocate One Touch / Speed Dial numbers from the MFC into the Brother Address Book and also use members of the Brother Address Book and send them to the MFC. You can now make changes to the data in the Brother Network PC Fax Address Book and click OK.

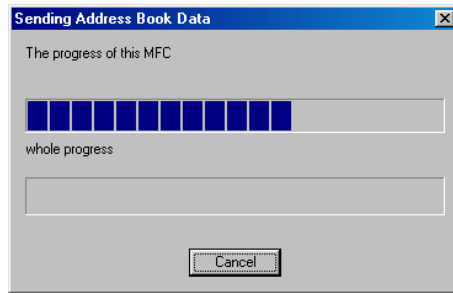


This data is then stored in the Windows Temp Folder and can be used to update singular or multiple MFC's on the network.

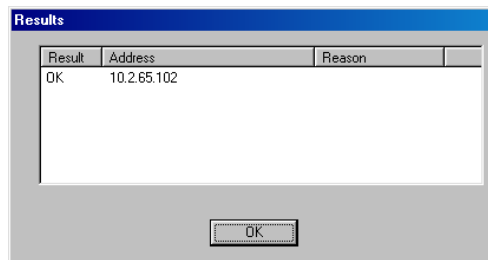
Highlight singular or multiple networked Brother MFC's in the main BRAdmin window by highlighting and pressing the shift key on your keyboard. Right click the highlighted MFC's and press Send Address Book Data. The new data is then sent to all the highlighted MFC's.



A dialogue box is displayed showing the upload status of current MFC and beneath this the whole progress is displayed if updating multiple MFC's.



When the process is finished a dialogue box is displayed showing which MFC's on the network have been updated.



Other Sources of Information

1. Visit <http://solutions.brother.com/> for more information on Brother Network PC Fax.
2. Refer to chapter 1 of this user guide to learn how to configure the IP address of the MFC.

APPENDIX

Appendix A



General Information

You can change the configuration of your Print / Fax server using any of the following methods.

- Brother BRAdmin application for Windows® 95/98/Me/NT® 4.0/2000
- HTTP (using a web browser)
- WebJetAdmin Software
- TELNET (command utility)
- Brother BRCONFIG NetWare Utility (command utility)

BRAdmin (Recommended)

The Brother BRAdmin application can use the TCP/IP or IPX/SPX protocol. This utility allows you to graphically manage aspects of the network and printer. It can also be used to upgrade the firmware of the Print / Fax server.

HTTP (Recommended)

Use your favorite web browser to connect to the Brother Print / Fax server. This will allow you to configure the MFC and/or Print / Fax server parameters.

WebJetAdmin

Brother's Print / Fax server range is HP WebJetAdmin compatible.

TELNET

To connect to the Print / Fax server using TELNET on UNIX, Windows® NT®, or most other TCP/IP systems, type: TELNET ipaddress at the command prompt of the system prompt, where ipaddress is the IP address of the Print / Fax server. When you are connected, push RETURN or ENTER to get the "#" prompt, enter the password "access" (the password will not appear on the screen), and type anything in response to the Enter Username> prompt. When you see the Local> prompt, you are ready to enter commands.

Enter HELP at the command prompt for a list of supported commands.

BRCONFIG

Brother BRCONFIG utility runs on the DOS system prompt and is installed with BRAdmin. To connect the Print / Fax server using the Brother BRCONFIG NetWare utility, Choose the BRCONFIG utility from the Brother BRAdmin utilities. If you have only one Print / Fax server, you will be immediately connected to that server. If you have more than one Print / Fax server, you will be given a list of available Print / Fax servers. Type the number of the Print / Fax server to which you wish to connect. When you are connected, enter the password "access" (the password will not appear on the screen) at the "#" prompt, and type anything in response to the Enter Username> prompt. When you get the Local> prompt, you are ready to enter commands. To use BRCONFIG, a Novell Server (running the IPX protocol) is necessary and an active connection must be made to the server.

Enter HELP at the command prompt for a list of supported commands.

Appendix B

Using Services

General

A service is a resource that can be accessed by computers that wish to print to the Brother Print / Fax server. The Brother Print / Fax server provides the following predefined services (do a SHOW SERVICE command in the Brother Print / Fax server remote console to see a list of available services):

Service (Example)	Definition
BINARY_P1	TCP/IP binary service
TEXT_P1	TCP/IP text service (adds carriage return after each line feed).
POSTSCRIPT_P1	PostScript service (switches PJJL-compatible printer to PostScript mode)
PCL_P1	PCL service (switches PJJL-compatible printer to PCL mode)
BRN_XXXXXX_P1_AT	AppleTalk with Quickdraw Driver for Mac OS 8.6 – 9.1
BRN_XXXXXX_P1	NetWare service and NetBIOS service (TCP/IP is enabled for backwards compatibility)

where "XXXXXX" is the last six digits of the Ethernet address (for example, BRN_310107_P1).

Appendix C

Reloading the Print / Fax Server Firmware

General

The firmware on the Print / Fax server is stored in flash memory. This means that you can upgrade the firmware by downloading the appropriate update file. To get the latest firmware update, access the Brother Solutions web site at <http://solutions.brother.com/>

The Print / Fax server supports multiple MFC models so when inserted into the MFC the version of the NC-8100h hardware is checked against the firmware of your machine. If the firmware for your NC-8100h has been superseded with a later version of firmware for your model a message is displayed on the LCD. "Please update your firmware".



Some firmware versions that we provide will automatically factory reset your Print / Fax server parameters. We try to avoid doing this, however, if we add a significant new feature to our Print / Fax server, it can result in the Print / Fax server being factory reset.

Because of this, we **STRONGLY** recommend that you make a note of the current Print / Fax server configuration before you upgrade. To do this, Print out a configuration page by referring to the Quick Setup Guide that was supplied with the NC-8100h for details on how to print a configuration page.

There are three methods of upgrading the firmware in your Brother Print / Fax server:

1. Use the BRAdmin application (**Recommended**).
2. Use the FTP protocol (**Recommended if running on Macintosh or Unix network**).
3. Use another system (such as a Novell or Unix system to send the new firmware file to the Print / Fax server).

Reloading firmware using BRAdmin

The BRAdmin application can be used to easily re-program your Brother Print / Fax server.

1. Start BRAdmin.
2. Highlight the appropriate Print / Fax server. Then press select the Control menu and choose Load Firmware. You can select more than one Print / Fax server by pressing CTRL+<select> or SHIFT+<select> on each additional Print / Fax server.

There are three possible ways of sending the new software version to the Print / Fax server. For whichever method you select, you must enter a password for the Print / Fax server. The default password for the Print / Fax server is "access".

3. TFTP PUT from this host

Use this method if you have TCP/IP already installed on your PC. BRAdmin will use the TFTP protocol to send the new firmware data to the Print / Fax server.

4. TFTP GET from a server

If you have a TFTP server installed in your network (many Unix systems provide TFTP support), you may wish to use this option. The new firmware file must be located in the TFTP BOOT directory on your TFTP server. In this case, your PC makes the Print / Fax server read the firmware data from the assigned TFTP server. If you do not provide the correct file name, then the upgrade will fail. You must also ensure that the firmware file is set so that the Print / Fax server can read the file. On Unix systems you can use the chmod command to specify file attributes. For example, chmod filename 666 allows the filename to be accessed by anyone. Also make sure that the TFTP service is running on your Unix server.

5. Netware GET from a server

You must have a Netware server on your network (running IPX/SPX) and you must store the new firmware file in the SYS/Login directory of the server. In this case, your PC makes the Print / Fax server read the firmware data from the assigned Netware server, the Print / Fax server attaches to the Netware server and reads the firmware itself.

NOTE:

AFTER SENDING FIRMWARE TO THE MFC, DO NOT TURN OFF THE MFC UNTIL AFTER THE MFC HAS PERFORMED AN AUTOMATIC RESTART.

Reloading using the FTP Protocol from a command prompt

By specifying the Print / Fax server PASSWORD AS THE USERNAME when logging on, it becomes possible to upgrade the firmware of the Print / Fax server or printer. The following example assumes that the Print / Fax server password is “cambridge”

```
D:\>ftp
ftp> open 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)): cambridge
230 User cambridge logged in.
ftp> bin
200 Ready command OK.
ftp> hash
Hash mark printing on ftp: (2048 bytes/hash mark) .
ftp> send brnt261.blf
200 Ready command OK.
150 Transfer Start
#####
#####
#####
#####
###
226 Data Transfer OK/Entering FirmWareUpdate mode.
ftp: 1498053 bytes sent in 8.52Seconds 175.77Kbytes/sec.
ftp> close
226 Data Transfer OK.
ftp> quit
```

When you see “226 Data Transfer OK/Entering FirmWareUpdate mode.” You can be sure that the firmware file is being transferred to the Print / Fax server. If you do not see this message, the file you are sending to the MFC will either be ignored or the printer will print garbage.



You must use the “bin” command to put the FTP client into Binary communications mode. If you do not specify the bin command the upgrade process will not function correctly.

NOTE:

AFTER SENDING FIRMWARE TO THE MFC, DO NOT TURN OFF THE MFC UNTIL AFTER THE MFC HAS PERFORMED AN AUTOMATIC RESTART.

Reloading using the FTP Protocol from a Web Browser

Please visit the Brother Solutions Web site at <http://solutions.brother.com> for more information on upgrading the Print / Fax server using a web browser.

Appendix D

Specifications and Function Table

Specifications

Operating System Support

- Windows® 95/98/98SE/Me/NT® 4.0 and Windows® 2000
- Unix systems supporting LPD
- Mac OS 8.6-9.1

Protocol Support

- TCP/IP(including the following)
 - RARP, BOOTP, DHCP, NetBIOS, WINS, LPR/LPD, Port9100, SMTP/POP3, SMB(NetBIOS/IP), IPP, FTP, TELNET, HTTP, SNMP, TFTP
- IPX/SPX
- AppleTalk (EtherTalk)
- DLC/LLC

Network

- 10/100Base-TX Ethernet Network

Network Printing

- Windows® 95/98/Me Peer-to-Peer Printing
- Windows® NT® 4.0 / Windows® 2000 TCP/IP Printing
- Unix TCP/IP Printing
- Novell NetWare Printing
- Quick Draw over AppleTalk

Network Scanning

- B/W Resolution (TIFF-F): 200×100, 200×200dpi
- Color Resolution (JPEG): 150×150, 300×300, 600×600dpi

Internet Fax

- T.37 Simple mode
- Tiff-F Profile-S
- Resolution: 200×100, 200×200, 204×98, 204×196dpi
- Coding System: MH
- Width: 1728 dot
- Fax / E-mail / I-Fax Forwarding / Paging feature.
(Please check the User Guide for your Brother MFC to verify if this feature is available).
- Internet Fax Relay
- E-mail Relay
- Relay Broadcast

Computer Requirements (for drivers, BRAdmin Professional, Peer-to-Peer software, etc.)

- CPU: Pentium 75MHz or Higher for Windows® 95/98/98SE/NT® 4.0
Pentium 150MHz or Higher for Windows® Me
Pentium 133MHz or Higher for Windows® 2000
- RAM: 24MB or greater (32MB recommended) for Windows® 95/98/98SE
32MB or greater (64MB recommended) for Windows® Me/NT® 4.0
64MB or greater (128MB recommended) for Windows® 2000

For AppleTalk connection

- Computer Ethernet ready Power Macintosh
- RAM 32MB or more (64MB or more recommended)
- OS Mac OS 8.6-9.1
Open Transport 1.3 or later

Management Utilities

- Web Based Management
Internet Explorer 4.xx or later
Netscape Navigator 4.xx or later
- BRAdmin Professional

Function Table and Default Factory Settings

Level One Function	Level Two Function	Options	Factory Setting
1.SETUP TCP/IP	1.BOOT METHOD	AUTO/STATIC/RARP/BOOTP/DHCP	AUTO
	2.IP ADDRESS	[000-255].[000-255].[000-255].[000-255]	192.000.000.192
	3.SUBNET MASK	[000-255].[000-255].[000-255].[000-255]	000.000.000.000
	4.GATEWAY	[000-255].[000-255].[000-255].[000-255]	000.000.000.000
	5.HOST NAME	(up to 15 characters) BRN_XXXXXX=(last 6 figures of Ethernet address)	BRN_XXXXXX
	6.WINS CONFIG	AUTO/STATIC	AUTO
	7.WINS SERVER	PRIMARY/SECONDARY 000.000.000.000/000.000.000.000	000.000.000.000
	8.DNS SERVER	PRIMARY/SECONDARY 000.000.000.000/000.000.000.000	000.000.000.000
2.SETUP INTERNET	1.MAIL ADDRESS	(60 characters)	brnxxxxxx@examp le.com
	2.SMTP SERVER	IP ADDRESS / NAME [000-255].[000-255].[000-255].[000-255]	000.000.000.000
	3.POP3 SERVER	/ NAME (up to 30 characters) IP ADDRESS / NAME [000-255].[000-255].[000-255].[000-255]	000.000.000.000
	4.MAILBOX NAME	/ NAME (up to 30 characters) (up to 20 characters)	
	5.MAILBOX PWD	PASSWORD:***** VERIFY:***** (up to 20 characters)	
3.SETUP MAIL RX	1.AUTO POLLING	ON/OFF	ON
	2.POLL FREQUENCY	01 - 60 MIN	10 MIN
	3.HEADER	ALL/SUBJECT+FROM+TO/NONE	NONE
	4.DEL ERROR MAIL	ON/OFF	ON
	5.NOTIFICATION	ON/MDN/OFF	OFF
4.SETUP MAIL TX	1.SENDER SUBJECT	(up to 40 characters)	Internet FAX Job
	2.SIZE LIMIT	ON/OFF	ON
	3.NOTIFICATION	ON/OFF	OFF
5.SETUP RELAY	1.RLY BROADCAST	ON/OFF	OFF
	2.RELAY DOMAIN	RELAYXX: XX=01-10 RELAY01*YYYYYY YYYYYY=(up to 30 characters)	01
	3.RELAY REPORT	ON/OFF	OFF
6.SETUP MISC.	1.NETWARE	ON/OFF *1	ON
	2.NET FRAME *1	AUTO/8023/ENET/8022/SNAP	AUTO
	3.APPLTALK	ON/OFF	ON
	4.DLC/LLC	ON/OFF	ON
	5.NET BIOS/IP	ON/OFF	ON
	6.ETHERNET	AUTO/100B-FD/100B-HD/10B-FD/10B-HD	AUTO
	7.TIME ZONE	GMTXXX:XX XXX:XX=-12:00/-11:30.....+11:30/+12:00	GMT-5:00

*1: 'NET FRAME' setting is available when 'NETWARE' is 'ON'.

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