lenovo 联想

Multi-Protocol On-board Print Server

Network User's Guide

for LJ2050N

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

Please visit our website at www.lenovo.com for product support and information.

Version 0

Statement

Welcome to Lenovo products.

Please read carefully all the materials accompanying the machine before installing and using this product for the first time. It will help you make better use of the product.If you fail to operate the product in accordance with the instructions and requirements provided in this manual or mishandle the product due to misunderstanding or other causes, Lenovo (Beijing) Limited shall not be responsible for any losses arising out thereof, except for the loss resulting from improper installation or caused during the process of operation by professional maintenance personnel from Lenovo.

Lenovo (Beijing) Limited has conducted a strict and careful collation of the manual. However, we cannot guarantee that the manual is completely free of any error or omission.

Lenovo (Beijing) Limited is committed to continuously improve product usage and service quality. Accordingly, it reserves the right to make changes to any product or software program described in the manual and information contained herein without prior notice.

The manual is intended to help you use Lenovo products in a correct way, which does not represent any description of software or hardware configuration for the product. In relation to product configuration, please refer to relevant contract(if any) and packing list or consult with the distributor who delivered the product to you. Pictures contained in the manual are for reference only. In case of inconsistency between particular pictures and actual display of the product, please follow the actual display of the product.

© 2004 Lenovo (Beijing) Limited. This manual is protected by copyright laws and regulations. Without prior written authorization from Lenovo (Beijing) Limited, you shall not reproduce or copy the manual in any way, or transmit the manual via any wireline or wireless network in any form, or translate the manual into any language.

Lenovo is either registered trademarks or trademarks of Lenovo (Beijing) Limited. Other names and products mentioned herein may be the registered trademarks or trademarks of Lenovo or other companies.

If you find any inconsistency between product reality and this manual during the operational process or would like to obtain the latest information or have any problems or suggestions, please contact or log onto:

SUNSHINE consulting hotline: 010-82879600

SUNSHINE service hotline: 400-810-1234

SUNSHINE service website: http://www.lenovo.com

Definitions of notes

We use the following icon throughout this User's Guide:

Notes tell you how you should respond to a situation that may arise or give tips about how the current operation works with other features.

Trademarks

The Lenovo logo is a registered trademark of Lenovo Group Limited.

UNIX is a registered trademark of The Open Group.

Apple, Macintosh, Quick Draw and LaserWriter are registered trademarks of Apple Computer, Inc.

HP, Hewlett-Packard, Jetdirect and PCL are registered trademarks of Hewlett-Packard Company.

Microsoft, Windows and Windows NT are registered trademarks of Microsoft Corporation.

All other terms, brand and product names mentioned in this User's Guide are registered trademarks or trademarks of their respective companies.

Compilation and publication notice

Under the supervision of Levono Group Limited, this manual has been compiled and published, covering the latest product's descriptions and specifications.

The contents of this manual and the specifications of this product are subject to change without notice.

Lenovo reserves the right to make changes without notice in the specifications and materials contained herein and shall not be responsible for any damages (including consequential) caused by reliance on the materials presented, including but not limited to typographical and other errors relating to the publication.

Table of contents

4 Network printing from Windows®: NetBIOS Peer-to-Peer printing 4-1

5 Internet printing for Windows® 5-1

6 Network printing from Macintosh® 6-1

7 Using the control panel 7-1

8 Troubleshooting 8-1

1

Introduction

Overview

The Lenovo print server allows your Lenovo printer to be shared on a 10/100MB Ethernet Network and provides printing services for Windows® 95/98/Me, Windows NT® 4.0, Windows® 2000/XP supporting the TCP/IP protocols and Macintosh® Networks supporting QuickDraw® over TCP/IP.

To use the Lenovo printer through a network, you need to configure the print server, and set up the computers you use.

In this chapter, you will learn the basic concept of the network connection and protocols, and in *Chapter 2* you will read information on network configuration. Chapter 3 through Chapter 6 describes how to configure your print server along with your operating system as follows:

Chapter 3: Network printing from Windows®: basic TCP/IP Peer-to-Peer printing

Chapter 4: Network printing from Windows®: NetBIOS Peer-to-Peer printing

Chapter 5: Internet printing for Windows®

Chapter 6: Network printing from Macintosh®

Types of network connection

Generally speaking, there are two types of network connection: Peer-to-Peer environment and a Network Shared environment.

Network connection example

Peer-to-Peer printing using TCP/IP

In a Peer-to-Peer environment, each computer directly sends and receives data to and from the Lenovo printer.

Windows®　　　　Windows®　　　　Windows®

Router

TCP/IP　　　　　　　TCP/IP

Network printer
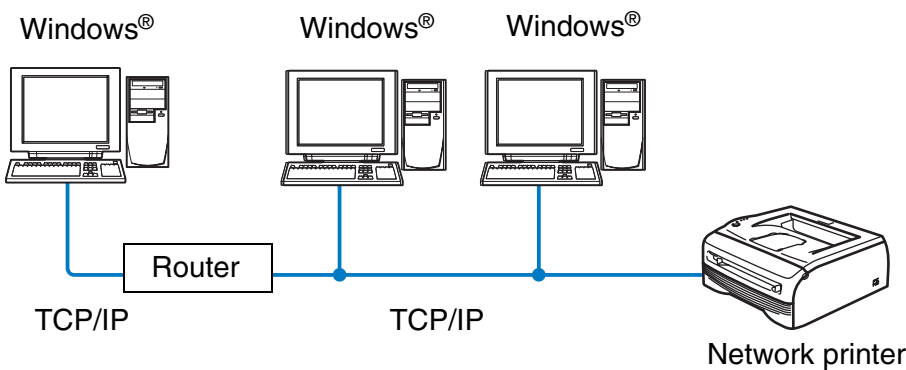
- In a smaller network of 2 or 3 computers, we recommend the Peer-to-Peer printing method as it is easier to configure than the Network Shared Printing method described on the following page. See *Network shared printing* on page 1-3.
- Each computer must use the TCP/IP Protocol.
- The Leonvo printer needs to have an appropriate IP address configuration.
- If you are using routers, computers can access the Lenovo printer through the routers. (In this case, the Gateway address must be configured to both computers and the printer.)

Network shared printing

In a Network Shared environment, each computer sends and receives data to and from the Lenovo printer via a centrally controlled computer. This type of computer is often called a "Server" or a "Print Server". Its job is to access print jobs from other computers and then control the printing of these jobs.
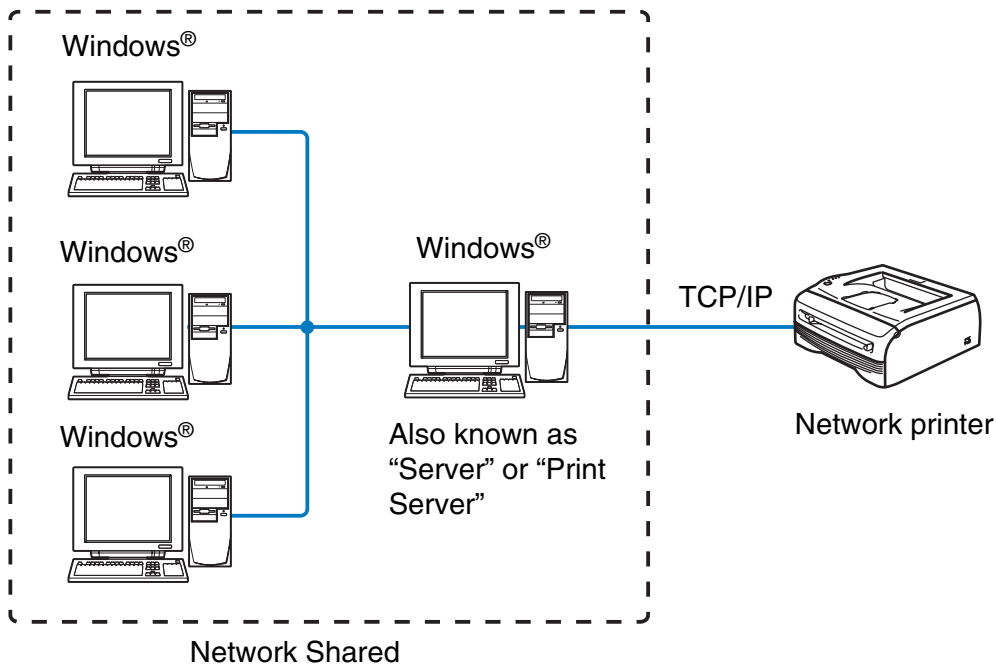
Network Shared

■ In a larger network, we recommend a Network Shared printing environment.

■ The "Server" or the "Print Server" needs the TCP/IP Protocol configured.

■ The Lenovo printer needs to have an appropriate IP address configuration unless the printer is shared via the parallel or USB interface at the server.

Protocols

TCP/IP protocols and functionalities

Protocols are the standardized sets of rules for transmitting data on a network. Protocols allow the users to gain access to network-connected resources.

The print server used on this Lenovo product supports the TCP/IP (Transmission Control Protocol/Internet Protocol) protocol.

TCP/IP is the most popular set of protocols used for communication such as Internet and E-mail. This protocol can be used in almost all operating systems such as Windows®, Macintosh® and Linux.

The following TCP/IP protocols are available on this Lenovo product.

DHCP/BOOTP/RARP

By using the DHCP/BOOTP/RARP protocols, the IP address can be automatically configured.

Note

To use the DHCP/BOOTP/RARP protocols, please contact your network administrator.

APIPA

If you do not assign an IP address manually (using the BRAdmin software) or automatically (using a DHCP/BOOTP/RARP server), the Automatic Private IP Addressing (APIPA) protocol will automatically assign an IP address from the range 169.254.1.0 to 169.254.254.255.

DNS client

The Lenovo print server supports the Domain Name Service (DNS) client function. This function allows the print server to communicate with other devices by using its DNS name.

NetBIOS/IP

NetBIOS over IP basic functionality allows the Lenovo print server to appear in a Windows® network neighborhood.

LPR/LPD

One of the standard printing protocols in a TCP/IP network.

Port9100

HP network printer compatible port.

SMTP client

Simple Mail Transfer Protocol (SMTP) client is used to send e-mails via Internet or Intranet.

IPP

Internet Printing Protocol (IPP Version 1.0) allows you to print documents directly to any accessible printer via the internet.

mDNS

mDNS allows the Lenovo print server connected to a Lenovo printer to automatically configure itself to work in a Mac OS® X Simple Network Configured system. (Mac OS® X 10.2.4 or greater).

TELNET

The Lenovo print server supports TELNET server for command line configuration.

SNMP

Simple Network Management Protocol (SNMP) is used to manage and monitor all sorts of equipments including computers, routers and terminals in a TCP/IP network.

Web server (HTTP)

The Lenovo print server is equipped with web server that allows you to monitor its status or change some of its configuration settings.

Note

We recommend Internet Explorer 5.0 (or higher) or Netscape Navigator 4.0 (or higher). If a different web browser is used, make sure it is compatible with HTTP 1.0 and HTTP 2.0.

2

Configuring your network printer

Overview

You need to configure the TCP/IP information to your Lenovo network printer before you use it on your network. In this chapter, you will learn what TCP/IP configuration items you need and how you configure your network printer using these TCP/IP configuration items.

We recommend that you use the automatic installer application in the CD-ROM we have provided with the printer. By using this application, you can easily connect your printer to your network and install the network software and printer driver which you need to complete the configuration of your network printer. You will be guided by the on-screen instructions until you are able to use your Lenovo network printer. Please follow the instructions in the supplied Quick Setup Guide.

If you want to configure your printer without using the automatic installer application, please read this chapter and learn how to configure the TCP/IP information. Then, in Chapter 3 through Chapter 6, you will learn how to install the network software and the printer driver into the operating system running on your computer.

IP addresses, subnet masks and gateways

To use the printer in a networked TCP/IP environment, you need to configure the IP address and subnet mask. The IP address you assign to the print 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 gateway address.

IP address

An IP address is a series of numbers that identifies each computer connected to a network. An IP address consists of four numbers separated by dots. Each number is between 0 and 255.

Example: In a small network, set the IP addresses by changing the final number.

192.168.1.<u>1</u>, 192.168.1.<u>2</u>, 192.168.1.<u>3</u>

How the IP address is assigned to your print server:

If you have a DHCP/BOOTP/RARP server in your network (typically a UNIX®/Linux or Windows® 2000/XP network) the print server will automatically obtain its IP address from the DHCP server and register its name with any RFC 1001 and 1002-compliant dynamic name services.

For more information on DHCP, BOOTP and RARP, see *Using DHCP to configure the IP address* on page A-1, *Using BOOTP to configure the IP address* on page A-2 and *Using RARP to configure the IP address* on page A-2.

If you do not have a DHCP/BOOTP/RARP server, the Automatic Private IP Addressing (APIPA) protocol will automatically assign an IP address from the range 169.254.1.0 to 169.254.254.255. For more information on APIPA, see *Using APIPA to configure the IP address* on page A-3.

If the APIPA protocol is disabled, the default IP address of a Lenovo print server is 192.0.0.192. However, you can easily change this IP address number to match with the IP address details of your network. For information on how to change the IP address, see *Setting the IP address and subnet mask* on page 2-3.

Subnet mask

Subnet masks restrict network communication.

Example: PC1 can talk to PC2

       PC IP Address: 192.168.1.2
       Subnet Mask: 255.255.255.0

       PC2 IP Address:192.168.1.3
       Subnet Mask: 255.255.255.0

Note

0 denotes that there is no limit to communication at this part of the address.

In the above example, we can communicate with anything that has an IP address that begins with 192.168.1.X.

Gateway (and router)

A gateway is a network point that acts as an entrance to another network and sends data transmitted via the network to an exact destination. The router knows where to direct data that arrives at the gateway. If a destination is located at an external network, the router transmits data to the external network. If your network communicates with other networks, you may need to configure the Gateway IP address. If you do not know the Gateway IP address then contact your Network Administrator.

Setting the IP address and subnet mask

Using the BRAdmin Professional utility and the TCP/IP protocol to configure your network printer (for Windows® only)

BRAdmin Professional utility

The BRAdmin Professional utility is designed to allow you to manage your network connected Lenovo printers in a TCP/IP environment.

How to configure your printer using the BRAdmin Professional utility

📝 **Note**

- Please use the BRAdmin Professional utility version that was supplied on the CD-ROM with your Lenovo product. You can also download the latest Lenovo BRAdmin Professional utility version from www.Lenovo.com. This utility is only available for Windows® users.

- If you are using Personal Firewall software (e.g. the Internet Connection Firewall available in Windows® XP), disable it. Once you are sure that you can print, re-start your Personal Firewall software.

- Node name: Node name appears in current BRAdmin Professional. The default Node name is "BRN_xxxxxx" ("xxxxxx" is the last six digits of Ethernet address.).

- The default password for Lenovo print servers is access.

1 Start the BRAdmin Professional utility (from Windows® 95/98/Me, Windows NT® 4.0 and Windows® 2000/XP), by clicking **Start** / **Programs** / **Lenovo Administrator Utilities** / **Lenovo BRAdmin Professional Utilities** / **BRAdmin Professional**.

2 Select **TCP/IP** in the left frame of the main BRAdmin window.

3 Select **Search Active Devices** from the **Devices** menu. BRAdmin Professional will search for new devices automatically.
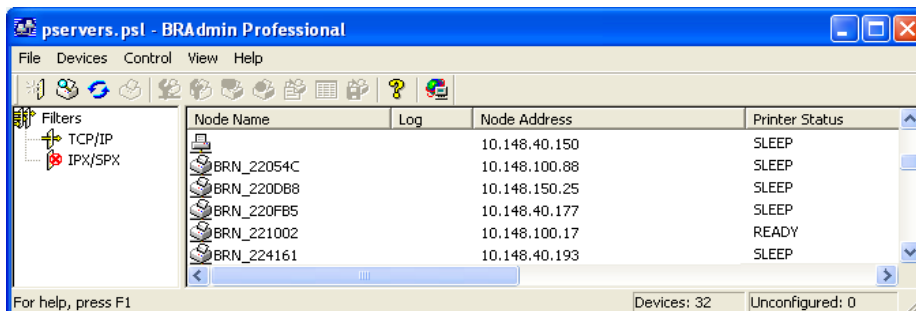
Note

- If the print server is set to its factory default settings without using a DHCP/BOOTP/RARP server, the device will appear as APIPA in the BRAdmin Professional utility screen.

- You can find the node name and Ethernet address (**Node Address** above) by printing out the Printer Settings Page. See *Printing the Printer Settings Page* on page 7-2 for information on how to print the Printer Settings Page on your print server.

4 Double-click the unconfigured device you want to configure.

5 Enter the **IP address**, **Subnet Mask** and **Gateway** (if needed) of your print server.

6 Click **OK**.

7 With the correctly programmed IP address, you will see the Lenovo print server in the device list.

Using other methods to configure your network printer

You can configure your network printer using other methods. See *Other ways to set the IP address (for advanced users and administrators)* on page A-1.

Changing the print server settings

Using the BRAdmin Professional utility and the TCP/IP protocol to change the print server settings (for Windows® only)

1 Start the BRAdmin Professional utility (from Windows® 95/98/Me, Windows NT® 4.0 and Windows® 2000/XP), by clicking **Start** / **Programs** / **Lenovo Administrator Utilities** / **Lenovo BRAdmin Professional Utilities** / **BRAdmin Professional**.

2 Select **TCP/IP** in the left frame of the main BRAdmin window.

3 Select the print server which you want to configure, in the right frame of the main BRAdmin window.

4 Select **Configure Print Server** from the **Control** menu.

5 Enter a password. The default Password is `access`.

6 You can now change the print server settings.

Using the HTTP (web browser) and the TCP/IP protocol to change the print server settings

A standard web browser (we recommend Microsoft Internet Explorer® version 5.0 or later, or Netscape Navigator® version 4.0 or later) can be used to change your print server settings using the HTTP (Hyper Text Transfer Protocol). To use a web browser, you must have assigned an IP address to the print server.

1 Type `http://printer_ip_address/` into your browser. (Where `printer_ip_address` is the IP address or the print server name)

For example: http://192.168.1.2/ (if the printer's IP address is 192.168.1.2.)

📝 **Note**

If you have edited the hosts file on your computer or are using Domain Name System, you can also enter the DNS name of the print server. As the print server supports TCP/IP and NetBIOS names, you can also enter the NetBIOS name of the print server. The NetBIOS name can be seen in the printer settings page. The NetBIOS name assigned is the first 15 characters of the node name and by default it will appear as `BRN_xxxxxx` where `xxxxxx` is the last six digits of the Ethernet address.

2 Click **Network Configuration**.

3 Enter a user name and a password. The User Name is `admin` and the default Password is `access`.

4 Click **OK**.

5 Click **Configure TCP/IP**.

6 You can now change the printer server settings.

3 Network printing from Windows®: basic TCP/IP Peer-to-Peer printing

Overview

If you are a Windows® user and want to print using the TCP/IP protocol in a Peer-to-Peer environment, please follow the instructions in this chapter. This chapter explains how to install the network software and the printer driver which you will need to be able to print using your network printer.

📝 **Note**

- You must configure the IP address on your printer before you proceed with this chapter. If you haven't done yet, see *Chapter 2* first.
- Verify the host computer and print server are either on the same subnet, or that the router is properly configured to pass data between the two devices.
- The default password for Lenovo print servers is `access`.

For Windows® 2000/XP users

By default, Windows® 2000/XP systems install with all the necessary software required for you to be able to print. This section describes the most commonly used configuration, Standard TCP/IP Port printing. Windows® 2000/XP users can also print via Internet using the IPP protocol. For more information, see *Internet printing for Windows®* on page 5-1.

If you have already installed the printer driver, jump to *Printer driver already installed* on page 3-2.

Configuring the standard TCP/IP port

Printer driver not yet installed

1 For Windows® 2000: Go to the **Start** button, select **Settings** and then **Printers**.
For Windows® XP: Go to the **Start** button and select **Printers and Faxes**.

2 For Windows® 2000: Double click the **Add Printer** icon to get the **Add Printer Wizard**.
For Windows® XP: Click **Add a printer** to get the **Add Printer Wizard**.

3 Click **Next** when you see the **Welcome to the Add Printer Wizard** screen.

4 Select **Local printer** and deselect the **Automatically detect and install my Plug and Play printer** option.

5 Click **Next**.

6 You must now select the correct Network printing port. Select **Create a new port** and select **Standard TCP/IP Port** port from the pull-down window.

7 Click **Next**.

8 The **Add Standard TCP/IP Printer Port Wizard** will now appear. Click **Next**.

9 Enter the IP address, or the print server name you wish to configure. The Wizard will automatically enter the Port name information for you.

10 Click **Next**.

11 Windows® 2000/XP 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.

12 Click the **Finish** button to complete the Wizard.

13 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 with the printer on CD-ROM then select the **Have Disk** option to browse to the CD-ROM.

14 For example, select the "X:\Driver\PCL\WIN2K_XP\your language" folder (where X is your drive letter). Click **Open**, and then **OK**. Select your printer model, then click **Next**.

15 Specify a name and click the **Next** button.

16 Now specify if you wish to share the printer, enter the share name and click **Next**.

17 Continue through the Wizard clicking the **Finish** button when complete.

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 **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 8 to 12 of *Printer driver not yet installed* on page 3-1.

For Windows NT® 4.0 users

Windows NT® 4.0 users can send print job using Lenovo Peer-to-Peer Print software provided on the Lenovo CD-ROM supplied with the printer.

Installing the TCP/IP protocol

If you did not install the TCP/IP protocol during the installation of your Windows NT®4.0 system (either workstation or server) follow these steps. If you have already installed the TCP/IP protocol, proceed to the next section, *Installing the Lenovo Peer-to-Peer software* on page 3-3.

1 Go to the **Start** button, select **Settings**, and then **Control Panel**.

2 Run the **Network** applet by double clicking the **Network** icon and then click the **Protocols** tab.

3 Select **Add**, and double click the **TCP/IP Protocol**.

4 Insert the requested disk(s), or CD-ROM, to copy the required files.

5 Click the **Close** button. The Windows NT®4.0 system will review protocol bindings and then you will see the **TCP/IP Properties** dialog.

6 Configure the host IP address, subnet mask, and gateway address in that dialog. Consult your system manager for these addresses.

7 Click **OK** to exit (your Windows NT®4.0 workstation or server will need to be re-booted).

Installing the Lenovo Peer-to-Peer software

1 Start the CD-ROM installation menu program according to the printer Quick Setup Guide.

2 Select **Install Software**.

3 Select the **Network Print Software** installation program.

4 Click **Next** in response to the Welcome message. Follow the on-screen instructions.

5 Select the **Lenovo Peer-to-Peer Print (LPR)** button.

6 Select the desired directory to install the **Lenovo Peer-to-Peer Print (LPR)** files and click **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 server and the print server name. If you have edited the hosts file on your computer or are using Domain Name System, you can also enter the DNS name of the print server. As the print server supports TCP/IP and NetBIOS names, you can also enter the NetBIOS name of the print server. The NetBIOS name can be seen in the printer settings page. The NetBIOS name assigned is the first 15 characters of the node name and by default it will appear as `BRN_xxxxxx` where `xxxxxx` is the last six digits of the Ethernet address.

📝 **Note**

- The node name and the NetBIOS name is printed on the Printer Settings Page. To learn how to print the Printer Settings Page, see *Printing the Printer Settings Page* on page 7-2.

- If you search the device using the search function in Step 8 above, disable the Personal Firewall software if you are using it. Once you are sure that you can print, re-start your Personal Firewall software.

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 to the **Start** button, select **Settings** and then **Printers**.

2 Double click the **Add Printer** icon to get the **Add Printer Wizard**.

3 Select **My Computer** (not Network Printer) and click **Next**.

4 Select the Lenovo LPR Port (the port name you assigned in step 7 of the "Installing Lenovo Peer-to-Peer Software" section in this chapter) and click **Next**.

5 Select the desired printer model. If the correct model is not displayed, click the **Have Disk** option and insert the CD-ROM supplied with your printer.

6 If the driver already exists, select **Keep Existing Driver** (if it does not exist, this step will be skipped), and then click **Next**.

7 If desired, change the name of the printer then click **Next**.

8 If desired, make the printer shared (so other user can access it), and select the operating system(s) that these other computers will be running. Click **Next**.

9 Select **Yes** when you asked **Would you like to print a test page?**. Click **Finish** to complete the installation. You may now print to the printer as if it were a local printer.

Adding a second Lenovo LPR port

You do not need to re-run the install program to add a new Lenovo LPR port. Instead, go to the **Start** button, select **Settings**, and open the **Printers** window. Click the icon of the printer that you wish to configure, select **File** from the menu bar, and then **Properties**. Click the **Ports** tab and then the **Add Port** button. In the **Printer Ports** dialog, highlight **Lenovo LPR Port**. Click the **New Port** button 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 **OK**. You will then see the **Port Settings** dialog.

Enter the IP address of the printer that you wish to print to and click **OK**. And then click **Close** in the **Printer Ports** dialog. You should now see the port that you have just created in the **Print to the following port(s)** setting of the printer driver.

For Windows® 95/98/Me users

Windows® 95/98/Me users can send print job using Lenovo Peer-to-Peer Print software provided by the CD-ROM which we have supplied with the printer.

Installing the Lenovo Peer-to-Peer software

📝 **Note**

If you already installed the driver from the printer's CD-ROM Installer and you selected "Lenovo Peer-to-Peer Network Printer" during the installation then you do not need to install the Lenovo Network Print Software again.

***

1 Start the CD-ROM installation menu program according to the Quick Setup Guide.

2 Select **Install Software**.

3 Select the **Network Print Software** installation program.

4 Click **Next** in response to the Welcome message. Follow the on-screen instructions.

5 Select the **Lenovo Peer-to-Peer Print (LPR)** button.

6 Select the desired directory to install the **Lenovo Peer-to-Peer Print (LPR)** 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 server and the print server name. If you have edited the hosts file on your computer or are using Domain Name System, you can also enter the DNS name of the print server. As the print server supports TCP/IP and NetBIOS names, you can also enter the NetBIOS name of the print server. The NetBIOS name can be seen in the printer settings page. The NetBIOS name assigned is the first 15 characters of the node name and by default it will appear as BRN_xxxxxx where xxxxxx is the last six digits of the Ethernet address.

✎ **Note**

- The node name and the NetBIOS name is printed on the Printer Settings Page. To learn how to print the Printer Settings Page, see *Printing the Printer Settings Page* on page 7-2.

- If you search the device using the search function in Step 8 above, disable the Personal Firewall software if you are using it. Once you are sure that you can print, re-start your Personal Firewall software.

---

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 **Settings** 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 click **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 click **Next**.

7 Select the Lenovo LPR port (the port name you assigned in step 7 of the *Installing the Lenovo Peer-to-Peer software* on page 3-5) and click **Next**.

8 Enter any desired name for the Lenovo printer and click **Next**. For example, you could call the printer "Networked Lenovo 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 Peer-to-Peer Print (LPR) software.

Adding a second Lenovo LPR port

You do not re-run the install program to add a new Lenovo LPR port. Instead, go to the **Start** button, select **Settings**, and open the **Printers** window. Click the icon of the printer that you wish to configure, select **File** from the menu bar, and then **Properties**. Click the **Details** tab and then the **Add Port** button. In the **Add Port** dialog, select the **Other** radio button and then highlight **Lenovo 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

See *Chapter 2* of this User's Guide to learn how to configure the IP address of the printer.

4 Network printing from Windows®: NetBIOS Peer-to-Peer printing

Overview

Lenovo print server range supports SMB (Server Message Block). This means that just like regular Windows® PC's, Lenovo 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.

Note

- You must configure the IP address on your printer before you proceed with this chapter. See *Chapter 2* for more information.

- The default password for Lenovo print servers is `access`.

- The default domain name of the print server is `WORKGROUP`, to change it use your web browser or the BRAdmin application.

Print server configuration for Windows® 95/98/Me, Windows® 2000/XP and Windows NT® 4.0

Print 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 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/2000/XP and Windows NT®4.0 systems may receive "Printer is busy" error messages when more than one person attempts to access the printer. In this instance Lenovo has provided the "Lenovo 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®4.0, Microsoft introduced the concept of "Domains". A domain offers centralized security management whereas a workgroup offers distributed security management. The print 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 Lenovo print server automatically has a default workgroup/domain name of `WORKGROUP`. If you need to change name, you can configure the Lenovo print server to recognize this. There are three 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).

Changing the Workgroup/Domain Name using the BRAdmin Professional utility

📝 **Note**

- The print 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 the BRAdmin Professional utility. See *Using the BRAdmin Professional utility and the TCP/IP protocol to configure your network printer (for Windows® only)* on page 2-3.

- Please use the BRAdmin Professional utility version that was supplied on the CD-ROM with your Lenovo product. You can also download the latest Lenovo BRAdmin Professional utility version from www.lenovo.com. This utility is only available for Windows® users.

- The default password for Lenovo print servers is `access`.

1 Start the BRAdmin Professional utility (from Windows® 95/98/Me, Windows NT® 4.0 and Windows® 2000/XP), by clicking **Start** / **Programs** / **Lenovo Administrator Utilities** / **Lenovo BRAdmin Professional Utilities** / **BRAdmin Professional**.
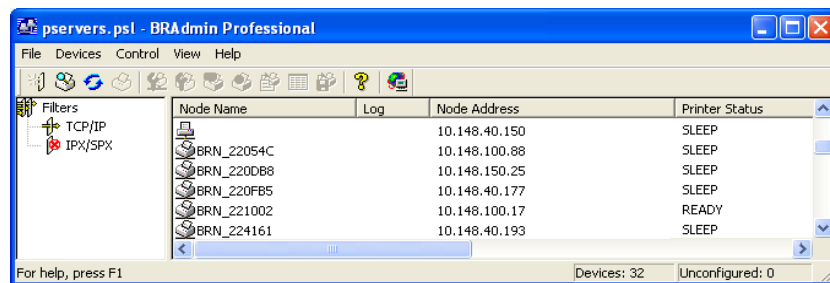
2 Select **TCP/IP** in the left frame of the main BRAdmin window.

3 Select the print server which you want to configure, in the right frame of the main BRAdmin window.

4 Select **Configure Print Server** from the **Control** menu.

5 Enter a password. The default Password is `access`.

6 Select **NetBIOS** tab. Enter a workgroup/domain name.
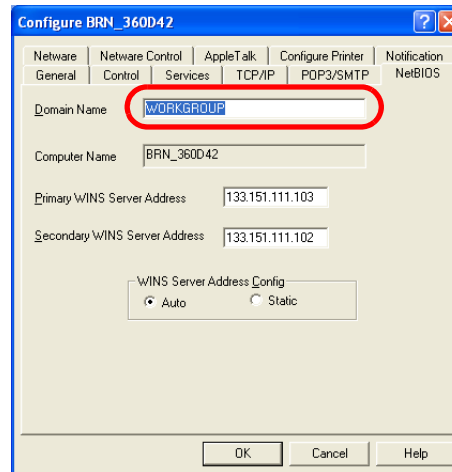
Note

Because of the way that Microsoft® networks work, the print server may take several minutes to appear in the network neighborhood. You will also find that the print 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 a web browser

You can also use a standard WWW browser to change the NetBIOS name. To do this, connect to the print server using its IP address and then select the **Configure NetBIOS** option from the **Network Configuration** screen, then enter your workgroup/domain name into the **Domain Name** text box. Make sure you submit the changes (click the **Submit** button).

Changing the Workgroup/Domain Name using TELNET

If you are unable to use the BRAdmin Professional utility, you can use TELNET.

When you are connected to the print 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 and Windows NT®4.0 network applet.

Installing the Lenovo NetBIOS Port Monitor

The Lenovo NetBIOS Port Monitor requires the TCP/IP transport protocols to be installed on your Windows® 95/98/Me/2000/XP and Windows NT®4.0 computer. To install those protocols, see your Windows® documentation. If you are using the TCP/IP protocol, the proper IP address should be defined on both the Lenovo print server and your client PC.

📝 **Note**

If you already installed the driver from the printers CD-ROM Installer and you selected "Lenovo Peer-to-Peer Network Printer" during the installation then you do not need to install the Lenovo Network Print Software again.

 1 Start the CD-ROM installation menu program according to the printer Quick Setup Guide.

 2 Select **Install Software**.

 3 Select the **Network Print Software** installation program.

 4 Click **Next** in response to the Welcome message. Follow the on-screen instructions.

 5 Select **Lenovo Peer-to-Peer Print (NetBIOS)** installation

 6 Select the desired directory to install the **Lenovo Network Direct Print** files and click **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 click **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 the actual print server. You can use the **Browse** button to search for the print server, select the domain/workgroup name, and then the server is listed. If the print 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 Lenovo print 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 server. By default it is BINARY_P1. For example: \\BRN_310107\BINARY_P1

📝 **Note**

You can find the NetBIOS name and node name by printing out the Printer Settings Page. See *Printing the Printer Settings Page* on page 7-2.

 9 Then click **OK**.

10 Click the **Finish** button. You must now restart your computer before you can continue.

Associating to the printer

1 You must now create a printer on your Windows® 95/98/Me, Windows NT®4.0 and Windows® 2000/XP systems 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 click **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 click **Next**.

7 Select the **Lenovo NetBIOS Port** (the port name you assigned in step 7of the "Installing the Lenovo NetBIOS Port Monitor" section and click **Next**.

8 Enter any desired name for the Lenovo printer and click **Next**. For example, you could call the printer "Networked Lenovo 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 / Windows® 2000/XP

2 Select **Add Printer** to begin the printer installation.

3 Click **Next** when you get the **Add Printer Wizard** window.

4 Select **Local printer** (Windows® 2000) or Local printer attached to this computer (Windows® XP) when you are asked how the printer is connected to your computer, and then click **Next**.

5 Select the **Lenovo NetBIOS Port** (the port name you assigned in step 7of the "Installing the Lenovo NetBIOS Port Monitor" section and click **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 click **Next**.

8 Enter any desired name for the Lenovo printer and click **Next**. For example, you could call the printer "Networked Lenovo Printer".

9 Select **Not Shared** or **Shared** and **Share Name** and click **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, click the **Start** button, select **Settings**, and open the **Printers** window. Click the icon of the printer that you wish to configure, select **File** from the menu bar, and then **Properties**.

Windows® 95/98/Me

2 Click the **Details** tab and click the **Add Port** button. In the **Add Port** dialog, select the **Other** radio button and then highlight **Lenovo 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 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 / Windows® 2000/XP

2 Click the **Ports** tab and click the **Add Port** button. In the **Add Port** dialog, highlight **Lenovo 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 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 www.lenovo.com for more information on network printing.

2 See *Chapter 2* of this User's Guide to learn how to configure the IP address of the printer.

5 Internet printing for Windows®

Overview

Windows® 2000/XP users can print using TCP/IP using the standard Network Printing software and IPP protocol software built into any Windows® 2000/XP installation.

Note
- You must configure the IP address on your printer before you proceed with this chapter. If you haven't done yet, see *Chapter 2* first.
- Verify the host computer and print server are either on the same subnet, or that the router is properly configured to pass data between the two devices.
- The default password for Lenovo print servers is `access`.

Windows® 2000/XP IPP printing

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

1 For Windows® 2000: Go to the **Start** button, select **Settings** and then **Printers**.
For Windows® XP: Go to the **Start** button and select **Printers and Faxes**.

2 For Windows® 2000: Double click the **Add Printer** icon to get the **Add Printer Wizard**.
For Windows® XP: Click **Add a printer** to get the **Add Printer Wizard**.

3 Click **Next** when you see the **Welcome to the Add Printer Wizard** screen.

4 Select **Local printer** or **Network printer**. For Windows® 2000: Make sure that you select **Network Printer**.
For Windows® XP: Make sure that you select **A Network Printer** or **a printer attached to another computer**.

5 Click **Next**.

6 For Windows® 2000: Select **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 the print server name).

For Windows® XP: Select **Connect to a printer on the Internet or on a home or office network** and then enter the following in the URL field: `http://printer_ip_address:631/ipp` (Where `printer_ip_address` is the IP address or the print server name).

📝 Note

If you have edited the hosts file on your computer or are using Domain Name System, you can also enter the DNS name of the print server. As the print server supports TCP/IP and NetBIOS names, you can also enter the NetBIOS name of the print server. The NetBIOS name can be seen in the printer settings page. The NetBIOS name assigned is the first 15 characters of the node name and by default it will appear as `BRN_xxxxxx` where `xxxxxx` is the last six digits of the Ethernet address.

7 When you click **Next**, Windows® 2000/XP 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/XP 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.

8 Click **OK**. You will then see the printer selection screen in the **Add Printer Wizard**.

9 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.

10 Click the **Browse** button and select the CD-ROM or network share that contains the appropriate Lenovo printer driver.

11 Now specify the model name of the printer.

12 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.

13 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 Lenovo print 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/pcl_p1

Where printer_ip_address is the IP address or the print server name.

Other sources of information

See *Chapter 2* of this User's Guide to learn how to configure the IP address of the printer.

6 Network printing from Macintosh®

Overview

This chapter explains how to print from Macintosh® on a Network using the Simple Network Configuration capabilities on Mac OS® X 10.2.4 or greater. For more information on how to configure the default QuickDraw® driver on a Network on Mac OS® 9.1 to 9.2, see the Quick Setup Guide included with the printer.

For updated information on printing from a Macintosh® visit the Lenovo web site at: www.lenovo.com

Printing from a Macintosh® using the Simple Network Configuration capabilities of Mac OS® X

With the release of Mac OS® X 10.2, Apple® introduced Simple Network Configuration capabilities.

The Simple Network Configuration capabilities of Mac OS® X lets you create an instant network of computers and smart devices by connecting them to each other. The smart devices automatically configure themselves to be compatible with your network.

You do not need to manually configure any IP address or network strings within the printer as the printer will automatically configure itself.

Please note that you need to use Mac OS® X 10.2.4 or later version.
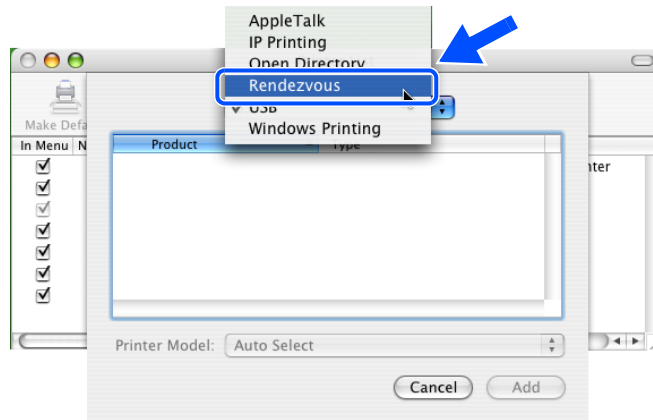
How to select the printer driver

Note

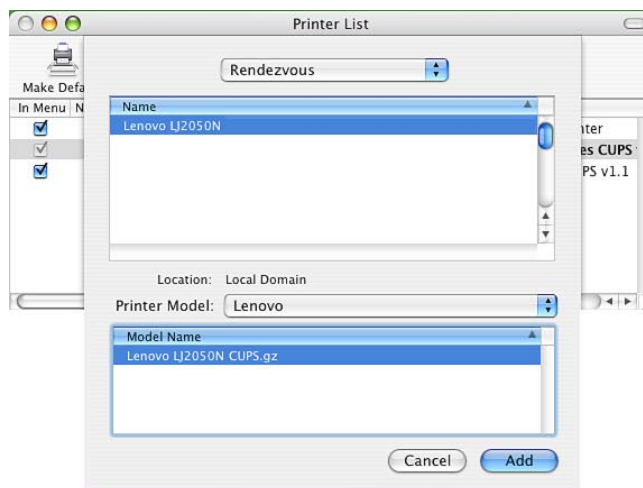Instructions and screens in this section are based on Mac OS® X 10.3.

1 From the **Go** menu, select **Applications**.

2 Open the **Utilities** folder.

3 Double click the **Printer Setup Utility** icon.

4 Click **Add**.

5 Make the following selection.

6 Select **Lenovo LJ2050N** and then click **Add**.

7 Click the printer, then click **Make Default** to set the printer as the default printer. The printer is now ready to print.

Changing the configuration using a web browser

From a Macintosh®, the easiest way to change the printer or print server parameters is to use a web browser.

Simply connect to the printer using the format: `http://ip_address` where `ip_address` is the address of the printer.

See *Using the HTTP (web browser) and the TCP/IP protocol to change the print server settings* on page 2-5.

Other sources of information

1 Visit www.lenovo.com for more information on network printing.

2 See *Chapter 2* of this User's Guide to learn how to configure the IP address of the printer.

6

7

Using the control panel

Overview

With the control panel you can do the following:

Printing the Printer Settings Page

See *Printing the Printer Settings Page* on page 7-2 for information on how to print the Printer Settings Page.

Restoring the network settings to factory default

See *Restoring the network settings to factory default* on page 7-2 for information on how to restore the network settings to factory default.

Disabling the APIPA protocol

See *Disabling the APIPA protocol* on page 7-3 for information on how to disable the APIPA protocol.

Printing the Printer Settings Page

> 📝 **Note**
>
> Node name: Node name appears in the Printer Settings Page. The default Node name is "`BRN_xxxxxx`" ("`xxxxxx`" is the last six digits of Ethernet address.).

The Printer Settings Page prints a report listing all the current printer settings including the network print server settings. You can print the Printer Settings Page using the printer control panel.

1 Make sure that the front cover is closed and the power cord is plugged in.

2 Turn on the printer and wait until the printer is in the Ready state.

3 Press the **Go** button three times. The printer will print the current printer settings.

Restoring the network settings to factory default

If you wish to reset the print server back to its default factory settings (resetting all information such as the password and IP address information), please follow these steps:

1 Turn off the printer.

2 Make sure that the front cover is closed and power cord is plugged in.

3 Hold down the **Go** button as you turn on the power switch. Keep the **Go** button pressed down until the **Toner**, **Drum** and **Paper** LEDs light up. Release the **Go** button. Make sure that the **Toner**, **Drum** and **Paper** LEDs are off.

4 Press the **Go** button six times and then release the **Go** button. Make sure that all the LEDs light up to indicate the print server has been reset to its default factory settings.

Disabling the APIPA protocol

If the APIPA protocol is enabled, the print server will automatically allocate a Link-Local IP address in the range (169.254.1.0 - 169.254.254.255) when the print server cannot obtain an IP address through the BOOT Method you have set.

By default, the APIPA protocol is enabled. If you wish to automatically disable the APIPA protocol, please follow these steps:

1 Turn off the printer.

2 Make sure that the front cover is closed and the power cord is plugged in.

3 Hold down the **Go** button as you turn on the power switch. Keep the **Go** button pressed down until the **Toner**, **Drum** and **Paper** LEDs light up. Release the **Go** button. Make sure that the **Toner**, **Drum** and **Paper** LEDs are off.

4 Press the **Go** button seven times and then release the **Go** button. Make sure that all the LEDs light up. Then the APIPA protocol has been disabled.

Note

- For more information on APIPA, see *Chapter 2* or *Chapter 3*, or visit www.lenovo.com.
- You can also disable the APIPA protocol using the web browser or BRAdmin Professional.

8 Troubleshooting

Overview

This chapter describes procedures for troubleshooting problems you may encounter with a Lenovo print server, it is divided into the following sections:

■ General problems
■ Network print software installation problems
■ Printing problems
■ Protocol-specific troubleshooting

General problems

CD-ROM is inserted, but does not start automatically

If your computer does not support Autorun, the menu will not start automatically after inserting the CD-ROM. In this case, execute **Start.exe** in the root directory of the CD-ROM.

How to reset the Lenovo print server to factory default

You can reset the print server back to its default factory settings (resetting all information such as the password and IP address information). See *Restoring the network settings to factory default* on page 7-2.

Installation problems

The Lenovo print server is not found during setup of the network print software installation or from the printer driver of the Lenovo printer in Windows®.

The Lenovo print server is not found using the Simple Network Configuration capabilities of Mac OS® X.

Make sure you have completed the IP address setting of the Lenovo print server according to *Chapter 2* of this User's Guide before installing the network print software or printer driver. Check the following:

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

2 Check to see if there is any LED activity. Lenovo print servers have two LEDs on the back panel of the printer. The upper side LED shows Link status. The lower side LED shows Activity (Receive/Transmit) status.

No light: If both LEDs are off, then the print server is not connected to the network.

Link LED is green: The Link LED will be green if the print server is connected to a Ethernet network.

3 Print the Printer Settings Page and check if the settings such as IP address settings are correct for your network. The problem may be the result of mismatched or duplicate IP address. Verify that the IP address is correctly loaded into the print server. And make sure that no other nodes on the network have this IP address. For information on how to print the Printer Settings Page, see *Printing the Printer Settings Page* on page 7-2.

4 Verify that the print server is on your network as follows:

For Windows®

Try pinging the print server from the host operating system command prompt with the command:

```
ping ipaddress
```

Where `ipaddress` is the print server IP address (note that in some instances it can take up to two minutes for the print server to load its IP address after setting the IP address).

For Macintosh®

For Mac OS® 9.1 to 9.2

(1) From the **Apple** menu, open the **Chooser**.

(2) Click the **Lenovo Laser (IP)** icon, and make sure that your print server name appears in the right frame. If it is visible, then the connection is good. Otherwise, go to Step 5.

For Mac OS® X 10.2.4 or greater

(1) From the **Go** menu, select **Applications**.

(2) Open the **Utilities** folder.

(3) Double-click the **Printer Setup Utility** icon.

(4) Click **Add**.

(5) Make the following selection. Make sure that your print server appears. If it is visible, then the connection is good. Otherwise, go to Step 5.
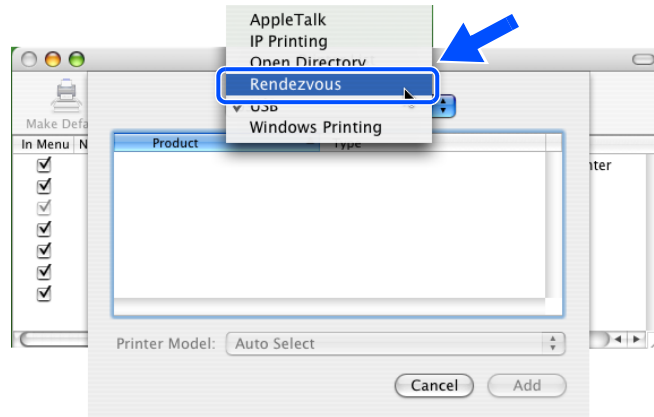
5 If you have tried 1 to 4 above and it does not work, then reset the print server back to the default factory settings and try from the initial setup again. For information how to reset to the default factory settings, see *Restoring the network settings to factory default* on page 7-2.

6 Check if a personal firewall such as ICF (Internet Connecting Firewall) for Windows XP is running on your computer. If it is running, temporarily turn it off and try again.

✎ **Note**

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

Printing problems

Print job is not printed

Make sure the status and configuration of the print server. Check following:

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

2 Print the Printer Settings Page of the printer and check if the settings such as IP address settings are correct for your network. The problem may be the result of mismatched or duplicate IP address. Verify that the IP address is correctly loaded into the print server. And make sure that no other nodes on the network have this IP address.

3 Verify that the print server is on your network as follows:

For Windows®

(1) Try pinging the print server from the host operating system command prompt with the command:

`ping ipaddress`

Where `ipaddress` is the print server IP address (note that in some instances it can take up to two minutes for the print server to load its IP address after setting the IP address).

(2) If a successful response is received, then proceed to *Windows® 95/98/Me and Windows NT®4.0 Peer-to-Peer print (LPR) troubleshooting*, and *Windows® 2000/XP IPP troubleshooting*. Otherwise, proceed to Step 4.

For Macintosh®

For Mac OS® 9.1 to 9.2

(1) From the **Apple** menu, open the **Chooser**.

(2) Click the **Lenovo Laser (IP)** icon, and make sure that your print server name appears in the right frame. If it is visible, then the connection is good. Otherwise, go to Step 4.

For Mac OS® X 10.2.4 or greater

(1) From the **Go** menu, select **Applications**.

(2) Open the **Utilities** folder.

(3) Double-click the **Printer Setup Utility** icon.

(4) Click **Add**.

(5) Make the following selection. Make sure that your print server appears. If it is visible, then the connection is good.
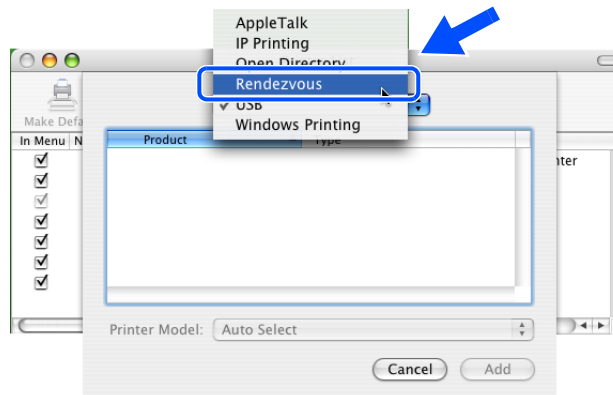
4 If you have tried 1 to 4 bove and it does not work, then reset the print server back to the default factory settings and try from the initial setup again. For information how to reset to the default factory settings, see *Restoring the network settings to factory default* on page 7-2.

Error during printing

If you try to print while other users are printing large amounts of data (e.g. many pages or color pages with high resolution), the printer is unable to accept your print job until the ongoing printing is finished. If the waiting time of your print job exceeds a certain limit, a time out situation occurs, which causes the error message. In such situations, execute the print job again after the other jobs are completed.

Protocol-specific troubleshooting

Windows® 95/98/Me and Windows NT®4.0 Peer-to-Peer print (LPR) troubleshooting

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

1 Make sure that the Lenovo LPR Port driver is correctly installed and configured according to the Windows® 95/98/Me or Windows NT® 4.0 Peer-to-Peer chapters.

2 Try to turn the **Byte Count** on in the **Configure port** area of printer driver properties.

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 and Windows NT® 4.0 computers. Press the ALT and TAB keys to make it appear.

Windows® 95/98/Me and Windows NT®4.0 Peer-to-Peer print (NetBIOS) troubleshooting

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

1 Make sure that the Lenovo NetBIOS Port driver is correctly installed and configured according to the Windows® 95/98/Me or Windows NT® 4.0 Peer-to-Peer (NetBIOS) chapters. 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 and Windows NT® 4.0 computers. Press the ALT and TAB keys to make it appear.

2 Make sure that the print 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 server to appear in the network neighborhood.

Windows® 2000/XP 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/XP 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/XP to use Port 80 to communicate with the Lenovo print server.

Web browser troubleshooting (TCP/IP)

1 If you can not connect to the print 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 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 4.0 or later/ Microsoft Internet Explorer® version 5.0 or later.

A Appendix A

Using services

A service is a resource that can be accessed by computers that wish to print to the Lenovo print server. The Lenovo print server provides the following predefined services (do a SHOW SERVICE command in the Lenovo print server remote console to see a list of available services): Enter `HELP` at the command prompt for a list of supported commands.

Service (Example)	Definition
BINARY_P1	TCP/IP binary, NetBIOS service
TEXT_P1	TCP/IP text service (adds carriage return after each line feed)
PCL_P1	PCL® service (switches PJL-compatible printer to PCL® mode)
BRN_xxxxxx_P1	TCP/IP binary

Where `xxxxxx` is the last six digits of the Ethernet address (for example, BRN_310107_P1).

Other ways to set the IP address (for advanced users and administrators)

For information on how to configure your network printer using the BRAdmin Professional utility or a web browser, see *Setting the IP address and subnet mask* on page 2-3.

Using DHCP to configure the IP address

The Dynamic Host Configuration Protocol (DHCP) is one of several automated mechanisms for IP address allocation. If you have a DHCP server in your network, the print server will automatically obtain its IP address from DHCP server and register its name with any RFC 1001 and 1002-compliant dynamic name services.

📝 **Note**

If you do not want your print server configured via DHCP, BOOTP or RARP, you must set the BOOT METHOD to static so that the print server has a static IP address. This will prevent the print server from trying to obtain an IP address from any of these systems. To change the BOOT METHOD, use the BRAdmin Professional utility.

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".

Note

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 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  00:80:77:31:01:07 192.168.1.2
```
and:
```
BRN_310107:ht=ethernet:ha=008077310107:\
ip=192.168.1.2:
```

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 server will load its IP address from the BOOTP server when the printer is powered on.

Using RARP to configure the IP address

The Lenovo print server's 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 server and the second entry is the name of the print server (the name must be the same as the one you put in the `/etc/hosts` file).

A

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 Lenovo print server will get the IP address from the rarp daemon when the printer is powered on.

Using APIPA to configure the IP address

The Lenovo print server supports the Automatic Private IP Addressing (APIPA) protocol. With APIPA, DHCP clients automatically configure an IP address and subnet mask when a DHCP server is not available. The device chooses it's own IP address in the range 169.254.1.0 through to 169.254.254.255. The subnet mask is automatically set to 255.255.0.0 and the gateway address is set to 0.0.0.0.

By default, the APIPA protocol is enabled. If you want to disable the APIPA protocol, you can disable it using printer control panel. For more information, see *Disabling the APIPA protocol* on page 7-3.

If the APIPA protocol is disabled, the default IP address of a Lenovo print server is 192.0.0.192. However, you can easily change this IP address number to match with the IP address details of your network.

Using ARP to configure the IP address

If you are unable to use the BRAdmin application and your network does not use a DHCP server, you can also use the ARP command. 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 at the command prompt:

```
arp -s ipaddress ethernetaddress
```

Where `ethernetaddress` is the Ethernet address (MAC address) of the print server and `ipaddress` is the IP address of the print server. For example:

Windows® systems

Windows® systems require the hash "-" character between each digit of the Ethernet address.

```
arp -s 192.168.1.2 00-80-77-31-01-07
```

UNIX®/Linux systems

Typically, UNIX® and Linux systems require the colon ":" character between each digit of the Ethernet address.

```
arp -s 192.168.1.2 00:80:77:31:01:07
```

📝 **Note**

You must be on the same Ethernet segment (that is, there cannot be a router between the print 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 Lenovo print 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 Lenovo print server using the ARP command, you cannot use the ARP command again to change the address. The print 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) or factory reset the print server (which will then allow you to use the ARP command again).

To configure the print server and to verify the connection, enter the following command `ping ipaddress` where `ipaddress` is the IP address of the print server. For example, `ping 192.189.207.2.`

Using the TELNET console to configure the IP address

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 server.

Type `TELNET` ipaddress at the command prompt of the system prompt, where ipaddress is the IP address of the print server. When you are connected, push the Return or Enter key to get the "#" prompt, enter the password `access` (the password will not appear on the screen).

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 server (check with your network manager for the IP address to use). For example:

```
Local> SET IP ADDRESS 192.168.1.3
```

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 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:

255.0.0.0 for class A networks

255.255.0.0 for class B networks

255.255.255.0 for class C 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 1 through 127 for Class A networks (e.g., 13.27.7.1), 128 through 191 for Class B networks (e.g.,128.10.1.30), and 192 through 255 for Class C networks (e.g., 192.168.1.4).

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 server. For example:

```
Local> SET IP ROUTER 192.168.1.4
```

Type `SET IP METHOD STATIC` to set the method of IP access configuration to static.

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.

Print server specifications

Operating system support	Windows® 95/98/Me, Windows NT® 4.0, Windows® 2000/XP Mac OS® 9.1 to 9.2, Mac OS® X 10.2.4 or greater	
Protocol support	TCP/IP	APR, RARP, BOOTP, DHCP, APIPA (Auto IP), NetBIOS Name Resolution, WINS, DNS Resolver, LPR/LPD, Custom Raw Port/Port9100, SMTP Client, SMB Print, IPP, FTP Server, mDNS, TELNET, SNMP, HTTP
Network type	10/100BASE-TX Ethernet network	
Network printing	Windows® 95/98/Me Peer-to-Peer printing Windows NT® 4.0 and Windows® 2000/XP TCP/IP printing Macintosh® printing (QuickDraw over TCP/IP)	
Computer requirements (for drivers, BRAdmin Professional, Peer-to-Peer software, etc.)	CPU	Pentium 75MHz or higher for Windows® 95/98 Pentium 150MHz or higher for Windows® Me Pentium 133MHz or higher for Windows® 2000 Pentium 233MHz or higher for Windows® XP
	RAM	24MB or greater (32MB recommended) for Windows® 95/98 32MB or greater (64MB recommended) for Windows® Me 64MB or greater (128MB recommended) for Windows® 2000/XP
Macintosh connection	Computer	Ethernet ready Power Macintosh®
	RAM	32MB or more (64MB or more recommended) for Mac OS® 9.1 to 9.2 128MB or more (160MB or more recommended) for Mac OS® X 10.2.4 or greater
	Operating system	Mac OS® 9.1 to 9.2, Mac OS® X 10.2.4 or greater
Management utilities	BRAdmin Professional utility	Windows® 95/98/Me, Windows NT® 4.0, Windows® 2000/XP

A

B Appendix B

Lenovo numbers

IMPORTANT: For technical and operational help, you must call the country where you bought the printer. Calls must be made *from within* that country.

Frequently asked questions (FAQs)

Please visit our website. You can download the latest drivers, software and utilities, read FAQs and troubleshooting tips to learn how to get the most from your Lenovo product.

<u>www.lenovo.com</u>

You can check here for the Lenovo driver updates.

Customer service

Visit <u>www.lenovo.com</u> for contact information on your local Lenovo office.

Important information: Regulations

Caution for LAN connection

Connect this product to a LAN connection that is not subjected to overvoltages.

I Index

T

W