

# LJ3650DN

## 激光打印机

LASER PRINTER

## 网络用户手册

## Network User's Guide

The Lenovo logo is displayed in white, italicized lowercase letters on a blue background. The background features a series of diagonal lines in shades of blue and grey, creating a sense of motion and depth.

**lenovo**

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## Symbols used in this guide

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

 <b>IMPORTANT</b>	IMPORTANT describes procedures you must follow or avoid to prevent possible printer problems or printer damage, or damage to other objects.
 <b>Note</b>	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.

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- This product is approved for use in the country of purchase only.  
Do not use this product outside the country of purchase as it may violate the power regulations of that country.
- Windows<sup>®</sup> XP in this document represents Windows<sup>®</sup> XP Professional, Windows<sup>®</sup> XP Professional x64 Edition and Windows<sup>®</sup> XP Home Edition.
- Windows Server<sup>®</sup> 2003 in this document represents Windows Server<sup>®</sup> 2003 and Windows Server<sup>®</sup> 2003 x64 Edition.
- Windows Vista<sup>®</sup> in this document represents all editions of Windows Vista<sup>®</sup>.

# Table of Contents

<b>1</b>	<b>Introduction</b>	<b>1</b>
	Overview .....	1
	Network features.....	2
	Network printing.....	2
	Management utilities.....	2
	Types of network connections .....	3
	Network connection example .....	3
	Protocols.....	5
	TCP/IP protocols and functions .....	5
	Other Protocol .....	7
<b>2</b>	<b>Configuring your machine for a network</b>	<b>8</b>
	Overview .....	8
	IP addresses, subnet masks and gateways .....	8
	IP address .....	8
	Subnet mask.....	9
	Gateway (and router).....	9
	Step by step chart.....	10
	Setting the IP address and subnet mask .....	11
	Using the BRAdmin Light utility to configure your machine as a network printer .....	11
	Using other methods to configure your machine for a network .....	13
	Changing the print server settings .....	14
	Using the BRAdmin Light utility to change the print server settings .....	14
	Using Web Based Management (web browser) to change the print server settings .....	14
	Using other methods to change print server settings .....	14
<b>3</b>	<b>Control panel features</b>	<b>15</b>
	Overview .....	15
	Printing the Printer Settings Page.....	16
	Reset the network settings to the factory default.....	17
<b>4</b>	<b>Web Based Management</b>	<b>18</b>
	Overview .....	18
	How to configure the machine settings using Web Based Management (web browser).....	19
<b>5</b>	<b>Network printing from Windows® basic TCP/IP Peer-to-Peer printing</b>	<b>21</b>
	Overview .....	21
	Configuring the standard TCP/IP port.....	22
	Printer driver not yet installed .....	22

	Printer driver already installed .....	24
	Other sources of information .....	24
<b>6</b>	<b>Internet printing for Windows®</b>	<b>25</b>
	Overview .....	25
	IPP printing for Windows® 2000/XP, Windows Vista® and Windows Server® 2003/2008 .....	25
	For Windows Vista® and Windows Server® 2008 .....	25
	For Windows® 2000/XP and Windows Server® 2003 .....	27
	Specifying a different URL .....	29
	Other sources of information .....	29
<b>7</b>	<b>Network printing from Macintosh using the BR-Script 3 driver</b>	<b>30</b>
	Overview .....	30
	How to choose the printer driver (TCP/IP) .....	30
<b>8</b>	<b>Security features</b>	<b>34</b>
	Overview .....	34
	Security terms .....	34
	Security protocols .....	35
	Security methods for E-mail notification .....	35
	Configuring the protocol settings .....	36
	Managing your network printer securely .....	37
	Secure Management using Web Based Management (web browser) .....	37
	Printing documents securely using IPPS .....	40
	Specifying a different URL .....	40
	Using E-mail notification with user authentication .....	41
	Creating and installing a certificate .....	43
	Creating and installing a self-signed certificate .....	45
	Creating CSR and installing a certificate .....	58
	Import and export the certificate and private key .....	59
<b>9</b>	<b>Troubleshooting</b>	<b>60</b>
	Overview .....	60
	General problems .....	60
	Network print software installation problems .....	62
	Printing problems .....	64
	Protocol-specific troubleshooting .....	65
	Windows® 2000/XP, Windows Vista® and Windows Server® 2003/2008 IPP troubleshooting .....	65
	Web Based Management (web browser) troubleshooting (TCP/IP) .....	65

<b>A</b>	<b>Appendix</b>	<b>66</b>
	Using services .....	66
	Other ways to set the IP address (For advanced users and administrators).....	66
	Using DHCP to configure the IP address .....	66
	Using BOOTP to configure the IP address.....	67
	Using RARP to configure the IP address .....	68
	Using APIPA to configure the IP address.....	68
	Using ARP to configure the IP address .....	69
	Using the TELNET console to configure the IP address .....	70
	Installation when using a Network Print Queue or Share (For Windows® users).....	71
	Installation when using Web Services (For Windows Vista® users).....	72
<b>B</b>	<b>Appendix</b>	<b>73</b>
	Print server specifications .....	73
	Ethernet wired network.....	73
<b>C</b>	<b>Appendix</b>	<b>74</b>
	Open Source Licensing Remarks .....	74
	OpenSSL statements .....	74
	Part of the software embedded in this product is gSOAP software.....	76
	This product includes SNMP software from WestHawk Ltd. ....	76
<b>D</b>	<b>Index</b>	<b>77</b>

## Overview

Your Lenovo machine can be shared on a 10/100 MB wired Ethernet network using the internal network print server. The print server provides printing services for Windows® 2000/XP/XP Professional x64 Edition, Windows Vista®, Windows Server® 2003/2008, Windows Server® 2003 x64 Edition supporting the TCP/IP protocols and Mac OS X 10.3.9 - 10.5.x supporting TCP/IP. The following chart shows what network features and connections are supported by each operating system.

Operating Systems	Windows® 2000/XP Windows® XP Professional x64 Edition Windows Vista® Windows Server® 2003/2008 Windows Server® 2003 x64 Edition	Mac OS X 10.3.9 - 10.5.x
10/100BASE-TX Wired Ethernet (TCP/IP)	✓	✓
Printing	✓	✓
BRAdmin Light	✓	✓
Web Based Management (web browser)	✓	✓
Internet Printing (IPP)	✓	
Status Monitor <sup>1</sup>	✓	✓

<sup>1</sup> For more information, see the *User's Guide* on the CD-ROM.

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

# Network features

Your Lenovo machine has the following basic network functions.

## Network printing

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The print server provides printing services for Windows® 2000/XP/XP Professional x64 Edition, Windows Vista® and Windows Server® 2003/2008 supporting TCP/IP protocols and Macintosh supporting TCP/IP (Mac OS X 10.3.9 - 10.5.x).

## Management utilities

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### BRAdmin Light

BRAdmin Light is a utility for initial setup of Lenovo network connected devices. This utility can search for Lenovo products on your network, view the status and configure basic network settings, such as IP address. The BRAdmin Light utility is available for Windows® 2000/XP, Windows Vista® and Windows Server® 2003/2008 and Mac OS X 10.3.9 - 10.5.x computers. For installing BRAdmin Light on Windows®, please see the *Quick Setup Guide* we provided with the machine. For Macintosh users, BRAdmin Light will be installed automatically when you install the printer driver. If you have already installed the printer driver, you don't have to install it again.

### Web Based Management (web browser)

Web Based Management (web browser) is a utility for managing network connected Lenovo devices, using the HTTP (Hyper Text Transfer Protocol). This utility can view the status of Lenovo products on your network and configure the machine or network settings using a standard web browser that is installed on your computer.

For more information, see *Chapter 4: Web Based Management*.

For increased security Web Based Management also support HTTPS. For more information see *Managing your network printer securely* on page 37.

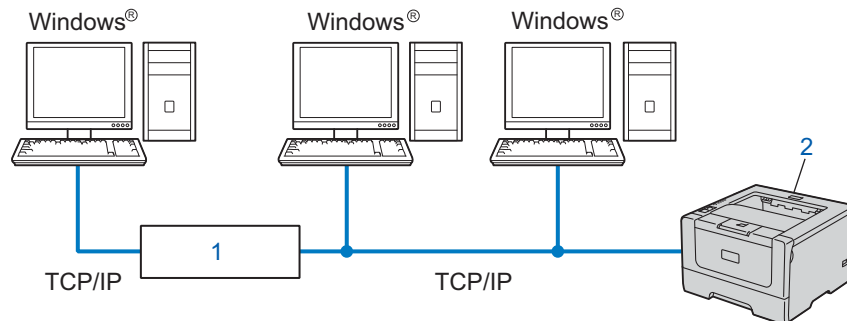


# Types of network connections

## Network connection example

### Peer-to-Peer printing using TCP/IP

In a Peer-to-Peer environment, each computer directly sends and receives data to each device. There is no central server controlling file access or printer sharing.



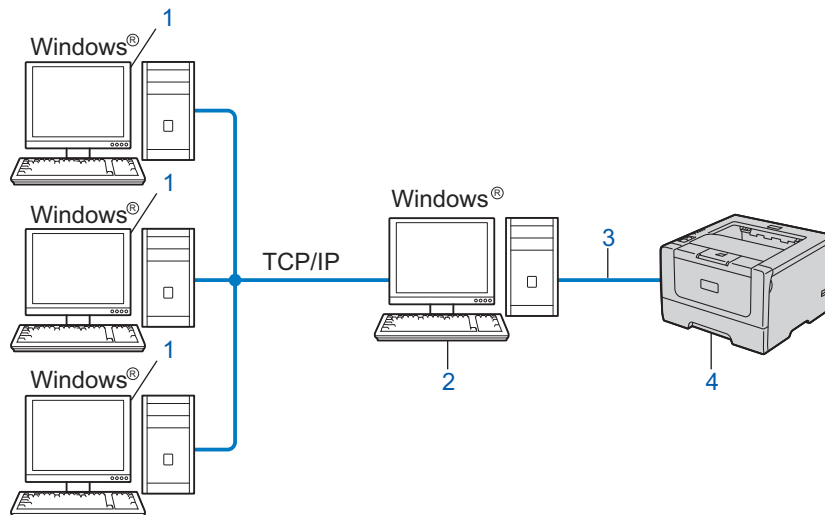
#### 1) Router

#### 2) Network printer (your machine)

- 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. See *Network Shared printing* on page 4.
- Each computer must use the TCP/IP Protocol.
- The Lenovo machine needs to have an appropriate IP address configuration.
- If you are using a router, the Gateway address must be configured on the computers and the Lenovo machine.

## Network Shared printing

In a Network Shared environment, each computer sends data via a centrally controlled computer. This type of computer is often called a “Server” or a “Print Server”. Its job is to control the printing of all print jobs.



- 1) Client computer
- 2) Also known as “Server” or “Print server”
- 3) TCP/IP, USB or parallel
- 4) Printer (your machine)

- In a larger network, we recommend a Network Shared printing environment.
- The “Server” or the “Print server” must use the TCP/IP print protocol.
- The Lenovo machine needs to have an appropriate IP address configuration unless the machine is connected via the USB or the parallel interface at the server.

# Protocols

## TCP/IP protocols and functions

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Protocols are the standardized sets of rules for transmitting data on a network. Protocols allow 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) protocols.

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®, Windows Server®, Mac OS X and Linux®. The following TCP/IP protocols are available on this Lenovo product.



### Note

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- You can configure the protocol settings by using the HTTP interface (web browser).  
See *How to configure the machine settings using Web Based Management (web browser)* on page 19.
  - For information about the security protocols, see *Security protocols* on page 35.
- 

## DHCP/BOOTP/RARP

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



### Note

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

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## APIPA

If you do not assign an IP address manually (using the BRAdmin Light) 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.

## ARP

Address Resolution Protocol performs mapping of an IP address to MAC address in a TCP/IP network.

## DNS client

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

## NetBIOS name resolution

Network Basic Input/Output System name resolution enables you to obtain the IP address of the other device using its NetBIOS name during the network connection.

## WINS

Windows Internet Name Service is an information providing service for the NetBIOS name resolution by consolidating an IP address and a NetBIOS name that is in the local network.

## LPR/LPD

Commonly used printing protocols on a TCP/IP network.

## SMTP client

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

## Custom Raw Port (default is Port9100)

Another commonly used printing protocol on a TCP/IP network. It enables interactive data transmission.

## IPP

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



### Note

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For the IPPS protocol, see *Security protocols* on page 35.

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## mDNS

mDNS allows the Lenovo print server to automatically configure itself to work in a Mac OS X Simple Network Configured system. (Mac OS X 10.3.9 - 10.5.x).

## Telnet

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

## SNMP

The Simple Network Management Protocol (SNMP) is used to manage network devices including computers, routers and Lenovo network ready machines. The Lenovo print server supports SNMPv1, SNMPv2c and SNMPv3.



### Note

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For the SNMPv3 protocol, see *Security protocols* on page 35.

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## LLMNR

The Link-Local Multicast Name Resolution protocol (LLMNR) resolves the names of neighboring computers, if the network does not have a Domain Name System (DNS) server. The LLMNR Responder function works in both the IPv4 or IPv6 environment when using a computer that has the LLMNR Sender function such as Windows Vista®.

## Web services

The Web Services protocol enables Windows Vista® users to install the Lenovo printer driver by right-clicking the machine icon from the **Network** folder.

See *Installation when using Web Services (For Windows Vista® users)* on page 72.

The Web Services also let you check the current status of the machine from your computer.

## Web server (HTTP)

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



### Note

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- We recommend Microsoft® Internet Explorer® 6.0 (or greater) or Firefox 1.0 (or greater) for Windows® and Safari 1.3 (or greater) for Macintosh. Please also make sure that JavaScript and Cookies are always enabled in whichever browser you use. If a different web browser is used, make sure it is compatible with HTTP 1.0 and HTTP 1.1.
  - For the HTTPS protocol, see *Security protocols* on page 35.
- 

## IPv6

This machine is compatible with the IPv6, the next generation internet protocol.

## Other Protocol

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### LLTD

The Link Layer Topology Discovery protocol (LLTD) lets you locate the Lenovo machine easily on the Windows Vista® **Network Map**. Your Lenovo machine will be shown with a distinctive icon and the node name. The default setting for this protocol is Off. You can activate LLTD using the Web Based Management.

## Overview

Before using your Lenovo machine in a network environment, you must install the Lenovo software and also configure the appropriate TCP/IP network settings on the machine itself. In this chapter, you will learn the basic steps required to print over the network using TCP/IP protocol.

We recommend that you use the Lenovo installer on the Lenovo CD-ROM to install the Lenovo software as this will guide you through the software and network installation. Please follow the instructions in the supplied *Quick Setup Guide*.

## IP addresses, subnet masks and gateways

To use the machine in a networked TCP/IP environment, you need to configure its 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 device 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, you would normally change the final number.

- 192.168.1.1
- 192.168.1.2
- 192.168.1.3

### How the IP address is assigned to your print server:

If you have a DHCP/BOOTP/RARP server in your network (typically UNIX®, Linux or Windows® 2000/XP, Windows Vista® or Windows Server® 2003/2008 network) the print server will automatically obtain its IP address from that server.



#### Note

On smaller networks, the DHCP server may also be the Router.

For more information on DHCP, BOOTP and RARP, see:-

*Using DHCP to configure the IP address* on page 66

*Using BOOTP to configure the IP address* on page 67

*Using RARP to configure the IP address* on page 68.

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 68.

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 11.

## Subnet mask

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Subnet masks restrict network communication.

■ Example: Computer 1 can talk to Computer 2

- Computer 1

IP Address: 192.168. 1. 2

Subnet Mask: 255.255.255.000

- Computer 2

IP Address: 192.168. 1. 3

Subnet Mask: 255.255.255.000

Where the 0 is in the Subnet mask, there is no limit to communication at this part of the address. What this means in the above example is, we can communicate with any device that has an IP address that begins with 192.168.1.x. (where x.x. are numbers between 0 and 255).

## Gateway (and router)

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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.

## Step by step chart

### 1 Configure the TCP/IP settings.

- |                             |   |             |
|-----------------------------|---|-------------|
| ■ Configure the IP address  | → | See page 11 |
| ■ Configure the subnet mask | → | See page 11 |
| ■ Configure the gateway     | → | See page 11 |

### 2 Change the print server settings.

- |  |   |             |
|--|---|-------------|
| ■ Using the BRAdmin Light utility              | → | See page 14 |
| ■ Using the Web Based Management (web browser) | → | See page 14 |
| ■ Using other methods                          | → | See page 14 |



## Setting the IP address and subnet mask

### Using the BRAdmin Light utility to configure your machine as a network printer

2

#### BRAdmin Light

The BRAdmin Light utility is designed for initial setup of the Lenovo network connected devices. It also can search for Lenovo products in a TCP/IP environment, view the status and configure basic network settings, such as IP address. The BRAdmin Light utility is available for Windows® 2000/XP, Windows Vista®, Windows Server® 2003/2008 and Mac OS X 10.3.9 - 10.5.x.

#### How to configure your machine using the BRAdmin Light utility



##### Note

- Please use the BRAdmin Light utility that was supplied on the CD-ROM of your Lenovo product.
- If you are using a firewall function of anti-spyware or antivirus applications, temporarily disable them. Once you are sure that you can print, configure the software settings following the instructions.
- Node name: Node name appears in the current BRAdmin Light window. The default node name of the print server in the machine is "BRNxxxxxxxxxxxx". ("xxxxxxxxxxxx" is your machine's MAC Address / Ethernet Address.)
- The default password for Lenovo print servers is "**access**".

1

Start the BRAdmin Light utility.

- For Windows® 2000/XP, Windows Vista® and Windows Server® 2003/2008  
Click **Start / All Programs**<sup>1</sup> / **Lenovo / BRAdmin Light / BRAdmin Light**.

<sup>1</sup> **Programs** for Windows® 2000 users

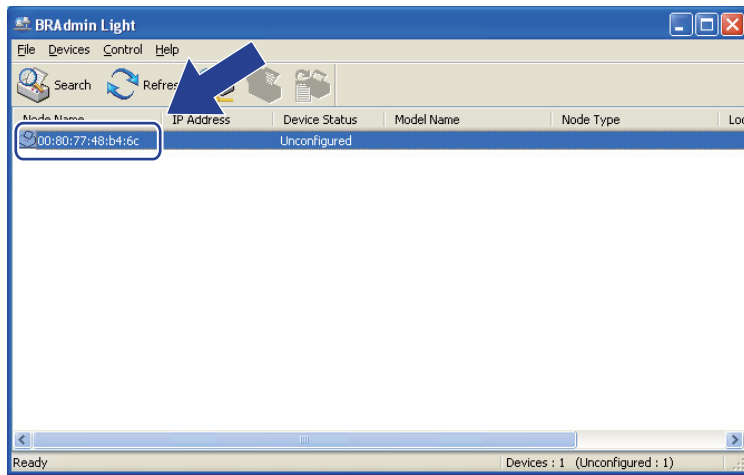
- For Mac OS X 10.3.9 - 10.5.x  
Double-click **Macintosh HD (Startup Disk) / Library / Printers / Lenovo / Utilities / BRAdmin Light.jar** file.

2

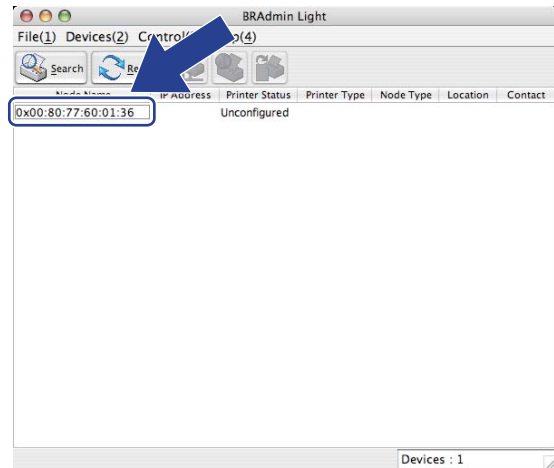
BRAdmin Light will search for new devices automatically.

- 3 Double-click the unconfigured device.

### Windows®



### Macintosh

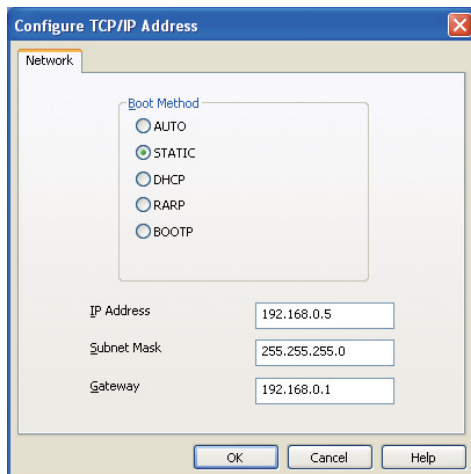


### Note

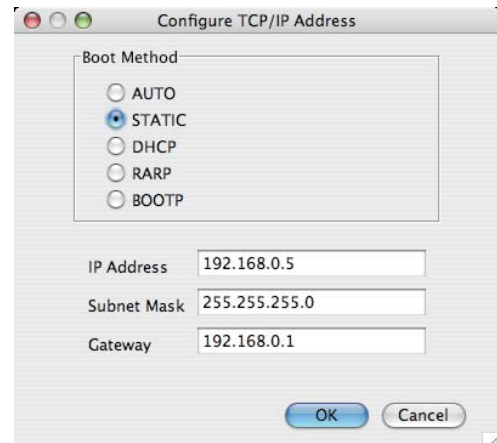
- If the print server is set to its factory default settings (if you don't use a DHCP/BOOTP/RARP server), the device will appear as **Unconfigured** in the BRAAdmin Light utility screen.
- You can find the node name and MAC Address (Ethernet Address) by printing out the Printer Settings Page.  
See *Printing the Printer Settings Page* on page 16.

- 4 Choose **STATIC** from **Boot Method**. Enter the **IP Address**, **Subnet Mask** and **Gateway** (if needed) of your print server.

### Windows®



### Macintosh



- 5 Click **OK**.
- 6 With the correctly programmed IP address, you will see the Lenovo print server in the device list.

## Using other methods to configure your machine for a network

---

You can configure your machine for a network using other methods.

See *Other ways to set the IP address (For advanced users and administrators)* on page 66.

## Changing the print server settings

### Using the BRAdmin Light utility to change the print server settings

2

- 1 Start the BRAdmin Light utility.
  - For Windows® 2000/XP, Windows Vista® and Windows Server® 2003/2008  
Click **Start/All Programs** <sup>1</sup> / **Lenovo** / **BRAdmin Light/BRAdmin Light**.
  - <sup>1</sup> **Programs** for Windows® 2000 users
  - For Mac OS X 10.3.9 - 10.5.x  
Double-click **Macintosh HD** (Startup Disk) / **Library** / **Printers** / **Lenovo** / **Utilities** / **BRAdmin Light.jar** file.
- 2 Choose the print server which you want to change the settings.
- 3 Choose **Network Configuration** from the **Control** menu.
- 4 Enter a password. The default password is “**access**”.
- 5 You can now change the print server settings.

### Using Web Based Management (web browser) to change the print server settings

A standard web browser can be used to change your print server settings using the HTTP (Hyper Text Transfer Protocol).

See *How to configure the machine settings using Web Based Management (web browser)* on page 19.

### Using other methods to change print server settings

You can configure your network printer using other methods.

See *Other ways to set the IP address (For advanced users and administrators)* on page 66.

## Overview

This machine has five LEDs (**Back Cover**, **Toner**, **Drum**, **Paper**, **Status**) and two buttons (**Job Cancel** and **Go**) on the control panel.



With the control panel you can do the following:

### Print the Printer Settings Page

See *Printing the Printer Settings Page* on page 16.

### Reset the network settings to the factory default

See *Reset the network settings to the factory default* on page 17.

## Printing the Printer Settings Page



### Note

Node name: Node name appears on the Printer Settings Page. The default node name of the print server in the machine is “BRNxxxxxxxxxxxx”.

The Printer Settings Page prints a report listing all the current printer settings including the network settings. You can print the Printer Settings Page using **Go** of the machine.

- 1 Make sure that the front cover is closed and the power cord is plugged in.
- 2 Turn on the machine and wait until the machine is in the Ready state.
- 3 Press **Go** three times within 2 seconds. The machine will print the current Printer Settings Page.



### Note

If the **IP Address** on the Printer Settings Page shows **0.0.0.0**, wait for one minute and try again.

## Reset the network settings to the factory default

You can reset the print server back to its factory default settings (resetting all information such as the password and IP address information.)



### Note

You can also reset the print server back to its factory default settings using the BRAdmin Light or Web Based Management (web browser). For more information, see *Changing the print server settings* on page 14.

3

- 1 Turn off the machine.
- 2 Make sure that the front cover is closed and the power cord is plugged in.
- 3 Hold down **Go** as you turn on the power switch. Keep **Go** pressed down until the all LEDs light up, and then the **Status** LED turns off.
- 4 Release **Go**. Make sure that all the LEDs turn off.
- 5 Press **Go** six times. Make sure that all the LEDs light up to indicate the print server has been reset to its factory default settings. The machine will restart.

## Overview

A standard Web Browser can be used to manage your machine using the HTTP (Hyper Text Transfer Protocol). You can get the following information from a machine on your network using a web browser.

- Machine status information
- Change network settings such as TCP/IP information
- Software version information of the machine and print server
- Change network and machine configuration details
- Log data for printed job



### Note

We recommend Microsoft® Internet Explorer® 6.0 (or greater) or Firefox 1.0 (or greater) for Windows® and Safari 1.3 (or greater) for Macintosh. Please also make sure that JavaScript and Cookies are always enabled in whichever browser you use. If a different web browser is used, make sure it is compatible with HTTP 1.0 and HTTP 1.1.

You must use the TCP/IP protocol on your network and have a valid IP address programmed into the print server and your computer.



### Note

- To learn how to configure the IP address on your machine, see *Setting the IP address and subnet mask* on page 11.
- You can use a web browser on most computing platforms, for example, Macintosh and UNIX users are also able to connect to the machine and manage it.
- You can also use the BRAdmin Light to manage the machine and its network configuration.
- This print server also supports HTTPS for secure management using SSL. See *Managing your network printer securely* on page 37.



## How to configure the machine settings using Web Based Management (web browser)

A standard web browser can be used to change your print server settings using the HTTP (Hyper Text Transfer Protocol).



### Note

To use a web browser, you will need to know the IP address or node name of the print server.

- 1 Start your web browser.
- 2 Type "http://printer's IP address/" into your browser. (where "printer's IP address" is the printer's IP address)
  - For example:  
http://192.168.1.2/



### Note

- If you have edited the hosts file on your computer or are using a Domain Name System (DNS), you can also enter the DNS name of the print server.
- For Windows® users, 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 on the Printer Settings Page. To learn how to print the Printer Settings Page, see *Printing the Printer Settings Page* on page 16. The NetBIOS name assigned is the first 15 characters of the node name and by default it will appear as "BRNxxxxxxxxxxx".
- For Macintosh users, you can have easy access to the Web Based Management System by clicking the machine icon on Status Monitor screen. For more information, see the *User's Guide* on the CD-ROM.

If you want to configure the print server settings, go to 3.

If you want to configure the log browser settings, go to 7.

- 3 Click **Network Configuration**.
- 4 Enter a user name and a password. The default User Name is "**admin**" and the default Password is "**access**".
- 5 Click **OK**.
- 6 You can now change the print server settings.



### Note

If you have changed the protocol settings, restart the printer after clicking **Submit** to activate the configuration.

- 7 Click **Administrator Settings**.
- 8 Enter a user name and a password. The default User Name is "**admin**" and the default Password is "**access**".

- 9 Click **OK**.
- 10 Choose the **Log Configuration** tag. Choose **On** and then choose **Maximum log file size** from the pull down menu. Click **Submit**.
- 11 Click **Administrator Settings** again. Choose the **View Print Log** tag. Check the items you wish to view, and choose the format you wish to export the data. Click **Submit**.

**Note**

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If you have not printed any data, no log data will appear.

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- 12 You can now view the log data for the printed job.

## Overview

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

If you are a Windows® user and want to configure your machine without using the Lenovo installer application, use 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 machine.




### Note

- You must configure the IP address on your machine before you proceed with this chapter. If you need to configure the IP address, see *Chapter 2* first.
- Verify the host computer and the machine are either on the same subnet, or that the router is properly configured to pass data between the two devices.
- If you are connecting to a Network Print Queue or Share (printing only), see *Installation when using a Network Print Queue or Share (For Windows® users)* on page 71 for installation details.
- The default password for Lenovo print server is “**access**”.

# Configuring the standard TCP/IP port

## Printer driver not yet installed

### For Windows Vista® and Windows Server® 2008

- 1 (For Windows Vista®) Click the  button, **Control Panel**, **Hardware and Sound**, and then **Printers**. (For Windows Server® 2008) Click the **Start** button, **Control Panel**, **Hardware and Sound**, and then **Printers**.
- 2 Click **Add a printer**.
- 3 Choose **Add a local printer**.
- 4 You must now choose the correct Network printing port. Choose **Create a new port** and then **Standard TCP/IP Port** from the pull-down window, then click **Next**.
- 5 Choose **TCP/IP Device** from the pull-down window of **Device type**. Enter the IP address, or the node name you wish to configure. The Wizard will automatically enter the Port name information for you, then click **Next**.
- 6 Windows Vista® and Windows Server® 2008 will now contact the printer that you specified. If you did not specify the correct IP address or name then an error dialog will appear.
- 7 Now that you have configured the port, you must specify which printer driver you wish to use. Choose the appropriate driver from the list of supported printers. If you are using a driver supplied with the machine on the CD-ROM then choose the **Have Disk** option to browse to the CD-ROM.
- 8 For example, choose the “X:\\install\\your language\\PCL\\win2kxpvista<sup>1</sup>” folder (where X is your drive letter). Click **Open**.

<sup>1</sup> win2kxpvista folder for 32-bit OS users and winxp64vista64 folder for 64-bit OS users

- 9 Specify a name and click **Next**.



#### Note

- When the **User Account Control** screen appears, click **Continue**.
- If the printer driver that you are installing does not have a Digital Certificate you will see a warning message. Click **Install this driver software anyway** to continue with the installation.

- 10 Continue through the Wizard clicking **Finish** when complete.


**For Windows® 2000/XP and Windows Server® 2003**

- 1 For Windows® XP and Windows Server® 2003:  
Click the **Start** button and choose **Printers and Faxes**.  
For Windows® 2000:  
Click the **Start** button, choose **Settings** and then **Printers**.
- 2 For Windows® XP and Windows Server® 2003:  
Click **Add a printer** to start the **Add Printer Wizard**.  
For Windows® 2000:  
Double-click the **Add Printer** icon to start the **Add Printer Wizard**.
- 3 Click **Next** when you see the **Welcome to the Add Printer Wizard** screen.
- 4 Choose **Local printer** and deselect the **Automatically detect and install my Plug and Play printer** option, then click **Next**.
- 5 You must now choose the correct Network printing port. Choose **Create a new port** and choose **Standard TCP/IP Port** from the pull-down window, then click **Next**.
- 6 The **Add Standard TCP/IP Printer Port Wizard** will now appear. Click **Next**.
- 7 Enter the IP address, or the node name you wish to configure. The Wizard will automatically enter the Port name information for you, then click **Next**.
- 8 Windows® 2000/XP and Windows Server® 2003 will now contact the machine that you specified. If you did not specify the correct IP address or name then an error dialog will appear.
- 9 Click **Finish** to complete the Wizard.
- 10 Now that you have configured the port, you must specify which printer driver you wish to use. Choose the appropriate driver from the list of supported printers. If you are using a driver supplied with the machine on the CD-ROM then choose the **Have Disk** option to browse to the CD-ROM.
- 11 For example, choose the "**X:\\install\\your language\\PCL\\win2kxpvista<sup>1</sup>**" folder (where X is your drive letter). Click **Open**.
 

<sup>1</sup> **win2kxpvista** folder for 32-bit OS users and **winxp64vista64** folder for 64-bit OS users
- 12 Specify a name and click **Next**.
- 13 Continue through the Wizard clicking **Finish** 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 For Windows Vista® and Windows Server® 2008:  
(For Windows Vista®) Click the  button, **Control Panel**, **Hardware and Sound**, and then **Printers**.  
(For Windows Server® 2008) Click the **Start** button, **Control Panel**, **Hardware and Sound**, and then **Printers**.  
For Windows® XP and Windows Server® 2003:  
Click the **Start** button and choose **Printers and Faxes** windows.  
For Windows® 2000:  
Click the **Start** button and choose **Settings** and then **Printers**.
- 2 Right-click on the printer driver you wish to configure, and then choose **Properties**.
- 3 Click the **Ports** tab and click **Add Port**.
- 4 Choose 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. Click **Next**.
- 6 Enter the IP address of your network printer. Click **Next**.
- 7 Click **Finish**.
- 8 Close **Printer Ports** and **Properties** dialog box.

## Other sources of information

See *Configuring your machine for a network* on page 8 to learn how to configure the IP address of the machine.

## Overview

Windows® 2000/XP, Windows Vista® and Windows Server® 2003/2008 users can print using TCP/IP using the standard Network Printing IPP protocol software built into Windows® 2000/XP, Windows Vista® and Windows Server® 2003/2008 installation.




### Note

- You must configure the IP address on your printer before you proceed with this chapter. If you need to configure the IP address, see *Chapter 2* first.
- Verify the host computer and machine 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**”.
- This print server also supports the IPPS printing, see *Printing documents securely using IPPS* on page 40.

## IPP printing for Windows® 2000/XP, Windows Vista® and Windows Server® 2003/2008

Use the following instructions if you wish to use the IPP printing capabilities of Windows® 2000/XP, Windows Vista® and Windows Server® 2003/2008.

### For Windows Vista® and Windows Server® 2008

- 1 (For Windows Vista®) Click the  button, **Control Panel**, **Hardware and Sound**, and then **Printers**. (For Windows Server® 2008) Click the **Start** button, **Control Panel**, **Hardware and Sound**, and then **Printers**.
- 2 Click **Add a printer**.
- 3 Choose **Add a network, wireless or Bluetooth printer**.
- 4 Click **The printer that I want isn't listed**.
- 5 Choose **Select a shared printer by name** and then enter the following in the URL field:  
http://printer's IP address:631/ipp (where “printer's IP address” is the printer's IP address or the node name.)



### Note

If you have edited the hosts file on your computer or are using a Domain Name System (DNS), 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 on the Printer Settings Page. To learn how to print the Printer Settings Page, see *Printing the Printer Settings Page* on page 16.

The NetBIOS name assigned is the first 15 characters of the node name and by default it will appear as “BRNxxxxxxxxxxx”.

- 6 When you click **Next**, Windows Vista® and Windows Server® 2008 will make a connection with the URL that you specified.

■ **If the printer driver has already been installed:**

You will see the printer selection screen in the ‘**Add printer**’ wizard. Click **OK**.

If the appropriate printer driver is already installed on your computer, Windows Vista® and Windows Server® 2008 will automatically use that driver. In this case, you will simply be asked if you wish to make the driver the default printer, after which the Driver installation wizard will complete. You are now ready to print.

Go to 11.

■ **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 Vista® and Windows Server® 2008 about the type of printer driver to be used.

Go to 7.

- 7 If your printer is not in the list of supported printers, click **Have Disk**. You will then be asked to insert the driver disk.
- 8 Click **Browse...** and choose the appropriate Lenovo printer driver that is contained in the CD-ROM or in the network share. Click **Open**.
- For example, choose the “X:\\install\\your language\\PCL\\win2kxpvista<sup>1</sup>” folder (where X is your drive letter). Click **Open**.

<sup>1</sup> win2kxpvista folder for 32-bit OS users and winxp64vista64 folder for 64-bit OS users

- 9 Click **OK**.
- 10 Specify the model name of the printer. Click **OK**.



**Note**

- When the **User Account Control** screen appears, click **Continue**.
- If the printer driver that you are installing does not have a Digital Certificate you will see a warning message. Click **Install this driver software anyway** to continue with the installation. The **Add Printer Wizard** will then complete.

- 11 You will see the **Type a printer name** screen in the **Add Printer Wizard**. Check the **Set as the default printer** check box if you want to use this printer as the default printer, and then click **Next**.
- 12 To test the printer connection, click **Print a test page**, and then click **Finish** and the printer is now configured and ready to print.



## For Windows® 2000/XP and Windows Server® 2003

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- 1 For Windows® XP and Windows Server® 2003:  
Click the **Start** button and choose **Printers and Faxes**.  
For Windows® 2000:  
Click the **Start** button and choose **Settings** and then **Printers**.
- 2 For Windows® XP and Windows Server® 2003:  
Click **Add a printer** to start the **Add Printer Wizard**.  
For Windows® 2000:  
Double-click the **Add Printer** icon to start the **Add Printer Wizard**.
- 3 Click **Next** when you see the **Welcome to the Add Printer Wizard** screen.
- 4 Choose **Network Printer**.  
For Windows® XP and Windows Server® 2003:  
Choose **A network printer, or a printer attached to another computer**.  
For Windows® 2000:  
Choose **Network Printer**.
- 5 Click **Next**.
- 6 For Windows® XP and Windows Server® 2003:  
Choose **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's IP address:631/ipp`  
(where "printer's IP address" is the printer's IP address or the node name.)  
For Windows® 2000:  
Choose **Connect to a printer on the Internet or on your intranet** and then enter the following in the URL field:  
`http://printer's IP address:631/ipp`  
(Where "printer's IP address" is the printer's IP address or the node name).



### Note

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If you have edited the hosts file on your computer or are using a Domain Name System (DNS), 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 on the Printer Settings Page. To learn how to print the Printer Settings Page, see *Printing the Printer Settings Page* on page 16. The NetBIOS name assigned is the first 15 characters of the node name and by default it will appear as "BRNxxxxxxxxxx".

---

- 7 When you click **Next**, Windows® 2000/XP and Windows Server® 2003 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 computer, Windows® 2000/XP and Windows Server® 2003 will automatically use that driver. In this case, you will simply be asked if you wish to make the driver the default printer, after which the Driver installation wizard will complete. You are now ready to print.

Go to 12.

■ **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 about the type of printer driver to be used.

Go to 8.

- 8 The driver installation starts automatically.



**Note**

If the printer driver that you are installing does not have a Digital Certificate you will see a warning message. Click **Continue Anyway**<sup>1</sup> to continue with the installation.

<sup>1</sup> Yes for Windows® 2000 users

- 9 Click **OK** when you see the **Insert Disk** screen.
- 10 Click **Browse...** and choose the appropriate Lenovo printer driver that is contained in the CD-ROM or in the network share. Click **Open**.  
For example, choose the “X:\\install\\your language\\PCL\\win2kxpvista<sup>1</sup>” folder (where X is your drive letter). Click **Open**.

<sup>1</sup> win2kxpvista folder for 32-bit OS users and winxpx64vista64 folder for 64-bit OS users

- 11 Click **OK**.
- 12 Check **Yes** if you want to use this printer as the default printer. Click **Next**.
- 13 Click **Finish** 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's IP address:631/ipp`

This is the default URL and we recommend that you use this URL.

`http://printer's IP address:631/ipp/port1`

This is for HP Jetdirect compatibility.

`http://printer's IP address:631/`



### Note

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If you forget the URL details, you can simply enter the above text (`http://printer's IP address/`) and the printer will still receive and process data.

Where “printer's IP address” is the printer's IP address or the node name.

■ For example:

`http://192.168.1.2/`

`http://BRN123456765432/`

---

## Other sources of information

For how to configure the IP address of the printer, see *Configuring your machine for a network* in Chapter 2.

# Network printing from Macintosh using the BR-Script 3 driver

## Overview

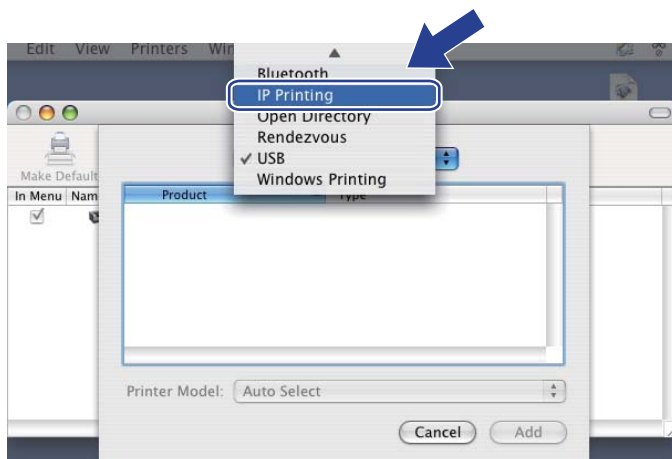
This chapter explains how to configure the BR-Script 3 (PostScript® 3™ language emulation) printer driver on a Network.

## How to choose the printer driver (TCP/IP)

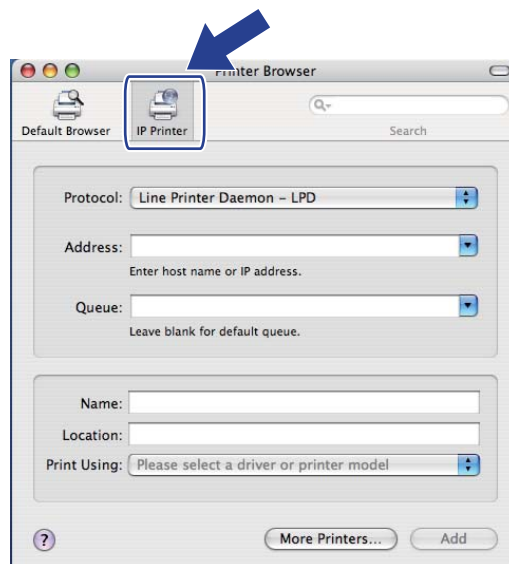
For Mac OS X 10.3.9 to 10.4.x users

- 1 Turn on your Macintosh.
- 2 From the **Go** menu, choose **Applications**.
- 3 Open the **Utilities** folder.
- 4 Double-click the **Printer Setup Utility** icon.
- 5 Click **Add**.
- 6 (Mac OS X 10.3.9) Choose **IP Printing**.  
(Mac OS X 10.4.x) Choose **IP Printer**.

(Mac OS X 10.3.9)



(Mac OS X 10.4.x)



- 7 (Mac OS X 10.3.9) Enter the IP address of the printer into the **Printer Address** box.  
 (Mac OS X 10.4.x) Enter the IP address of the printer into the **Address** box.

(Mac OS X 10.3.9)

(Mac OS X 10.4.x)



#### Note

- The Printer Settings Page will allow you to confirm the IP address. To learn how to print the Printer Settings Page, see *Printing the Printer Settings Page* on page 16.
- When specifying the **Queue Name (Queue)**, use the PostScript® service "BRNxxxxxxxxxx\_AT" for Macintosh. Where "xxxxxxxxxx" is your machine's MAC Address (Ethernet Address).

- 8 From the **Printer Model (Print Using)** pop-up menu, choose your model. For example, choose **Lenovo LJ3650DN BR-Script3**.

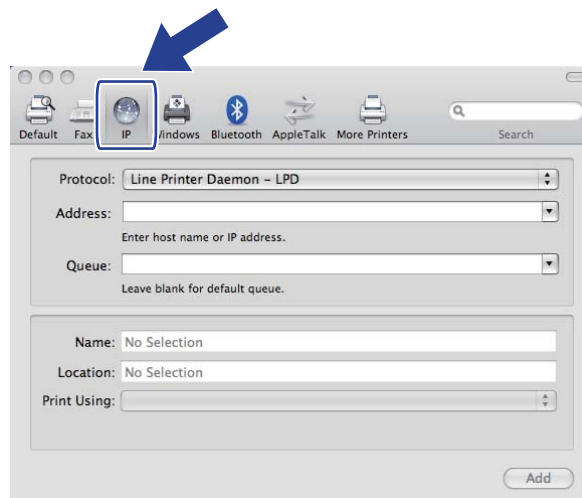
(Mac OS X 10.3.9)

(Mac OS X 10.4.x)

- 9 Click **Add** and the printer will be available from the **Printer List**. The printer is now ready to print.

**For Mac OS X 10.5.x**

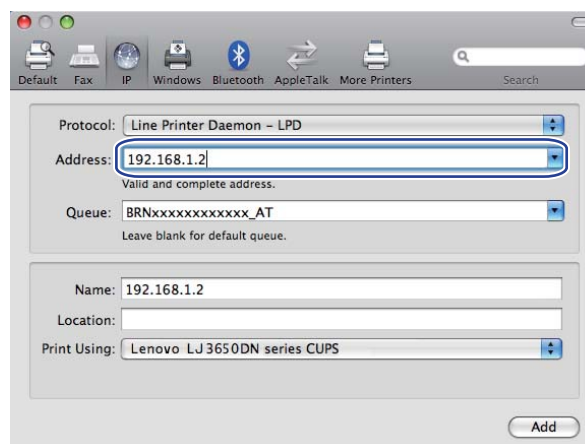
- 1 Turn on your Macintosh.
- 2 Choose **System Preferences** from the Apple menu.
- 3 Choose **Print & Fax**.
- 4 Click **+** which is located below the **Printers** section.
- 5 Choose **IP**.



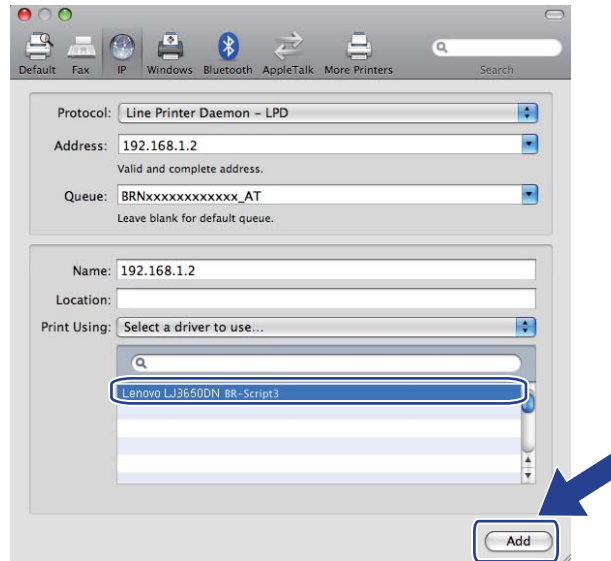
- 6 Choose **Line Printer Daemon - LPD** from the **Protocol** list.
- 7 Enter the TCP/IP address or DNS Name of the printer into the **Address** box.

**Note**

When specifying the **Queue**, use the PostScript® service "BRNxxxxxxxxxxx\_AT" for Macintosh. Where "xxxxxxxxxxx" is your machine's MAC Address (Ethernet Address).



- 8 From the **Print Using** pop-up menu, choose your model. For example, choose **Lenovo LJ3650DN BR-Script3**.



- 9 Click **Add** and the printer will be available from the **Printers**. The printer is now ready to print.

## Overview

In today's world there are many security threats to your network and the data that travels over it. Your Lenovo machine employs some of the latest network security and encryption protocols available today. These network features can be integrated into your overall network security plan to help protect your data and prevent unauthorized access to the machine. This chapter explains various security protocols supported and how to configure them.

## Security terms

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### ■ CA (Certificate Authority)

A CA is an entity that issues digital certificates (especially X.509 certificates) and vouches for the binding between the data items in a certificate.

### ■ CSR (Certificate Signing Request)

A CSR is a message sent from an applicant to a CA in order to apply for issue of a certificate. The CSR contains information identifying the applicant, the public key generated by the applicant and the digital signature of the applicant.

### ■ Certificate

A Certificate is the information that binds together a public key with an identity. The certificate can be used to verify that a public key belongs to an individual. The format is defined by the x.509 standard.

### ■ Digital signature

A Digital signature is a value computed with a cryptographic algorithm and appended to a data object in such a way that any recipient of the data can use the signature to verify the data's origin and integrity.

### ■ Public key cryptosystem

A Public key cryptosystem is a modern branch of cryptography in which the algorithms employ a pair of keys (a public key and a private key) and use a different component of the pair for different steps of the algorithm.

### ■ Shared key cryptosystem

A Shared key cryptosystem is a branch of cryptography involving algorithms that use the same key for two different steps of the algorithm (such as encryption and decryption).



## Security protocols

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The Lenovo print server supports the following security protocols.



### Note

How to configure the protocol settings, see *How to configure the machine settings using Web Based Management (web browser)* on page 19.

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### SSL (Secure Socket Layer) / TLS (Transport Layer Security)

These security communication protocols encrypt data to prevent security threats.

### Web server (HTTPS)

The internet protocol that the Hyper Text Transfer Protocol (HTTP) uses SSL.

### IPPS

The printing protocol that the Internet Printing Protocol (IPP Version 1.0) uses SSL.

### SNMPv3

The Simple Network Management Protocol version 3 (SNMPv3) provides user authentication and data encryption to manage network devices securely.

## Security methods for E-mail notification

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The Lenovo print server supports the following security methods for E-mail notification.



### Note

How to configure the settings of security methods, see *How to configure the machine settings using Web Based Management (web browser)* on page 19.

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### POP before SMTP (PbS)

The user authentication method for sending E-mail from a client. The client is given permission to use the SMTP server by accessing the POP3 server before sending the E-mail.

### SMTP-AUTH (SMTP Authentication)

SMTP-AUTH expands SMTP (the Internet E-mail sending protocol) to include an authentication method that ensures the true identity of the sender is known.

### APOP (Authenticated Post Office Protocol)

APOP expands POP3 (the Internet receiving protocol) to include an authentication method that encrypts the password when the client receives E-mail.

## Configuring the protocol settings

You can enable or disable each protocol and security method using Web Based Management (web browser).



### Note

We recommend Microsoft® Internet Explorer® 6.0 (or greater) or Firefox 1.0 (or greater) for Windows® and Safari 1.3 (or greater) for Macintosh. Please also make sure that JavaScript and Cookies are always enabled in whichever browser you use. If a different web browser is used, make sure it is compatible with HTTP 1.0 and HTTP 1.1. To use a web browser, you will need to know the IP address of the print server.

- 1 Start your web browser.
- 2 Type `http://printer's IP address/` into your browser (where “printer's IP address” is the printer's IP address.)
  - For example:  
`http://192.168.1.2/`



### Note

- If you have edited the hosts file on your computer or are using a Domain Name System, you can also enter the DNS name of the print server.
- For Windows® users, 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 on the Printer Settings Page. To learn how to print the Printer Settings Page, see *Printing the Printer Settings Page* on page 16. The NetBIOS name assigned is the first 15 characters of the node name and by default it will appear as “BRNxxxxxxxxxxx”.

- 3 Click **Network Configuration**.
- 4 Enter a user name and a password. The default User Name is “**admin**” and the default Password is “**access**”.
- 5 Click **OK**.
- 6 Click **Configure Protocol**.  
Now you can configure the protocol settings.



### Note

If you change the protocol settings, restart the printer after clicking **Submit** to activate the configuration.

## Managing your network printer securely

To manage your network printer securely, you need to use the management utilities with security protocols.

### Secure Management using Web Based Management (web browser)

We recommend to use HTTPS and SNMPv3 protocol for secure management. To use the HTTPS protocol, the following printer settings are required.

- A certificate and private key must be installed in the printer. For how to install a certificate and private key, see *Creating and installing a certificate* on page 43.
- The HTTPS protocol must be enabled. To enable the HTTPS protocol, enable **SSL communication is used (port 443)** from the **Advanced Setting** page of **Web Based Management (Web Server)** on the **Configure Protocol** page. For information on how to access the **Configure Protocol** page, see *Configuring the protocol settings* on page 36.



#### Note

- We recommend Microsoft® Internet Explorer® 6.0 (or greater) or Firefox 1.0 (or greater) for Windows® and Safari 1.3 (or greater) for Macintosh. Please also make sure that JavaScript and Cookies are always enabled in whichever browser you use. If a different web browser is used, make sure it is compatible with HTTP 1.0 and HTTP 1.1. To use a web browser, you will need to know the IP address of the print server.
- We recommend to disable the Telnet, FTP and TFTP protocols. Accessing the machine using these protocols is not secure. See *Configuring the protocol settings* on page 36.

1

Start your web browser.

2

Type “https://Common Name/” into your browser. (Where “Common Name” is the Common Name that you assigned for the certificate, such as an IP address. For how to assign a Common Name for the certificate, see *Creating and installing a certificate* on page 43.)

- For example:

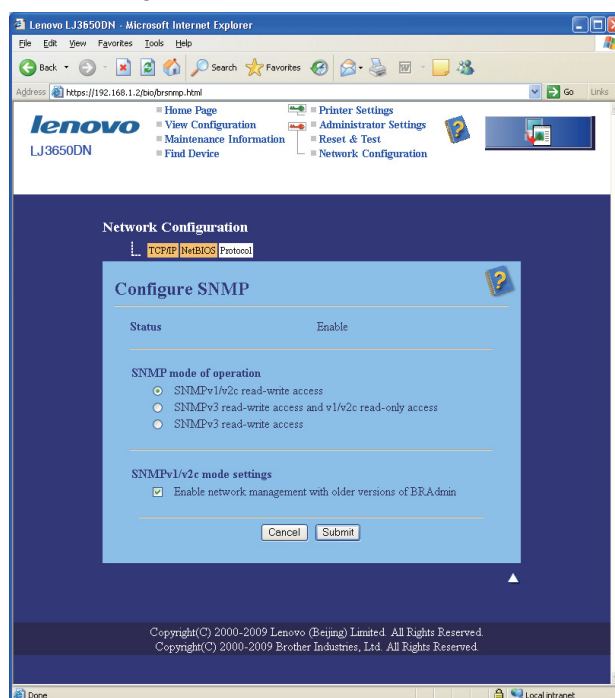
https://192.168.1.2/ (if the Common Name is the printer’s IP address)



#### Note

- If you have edited the hosts file on your computer or are using a Domain Name System, you can also enter the DNS name of the print server.
- For Windows® users, 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 on the Printer Settings Page. To learn how to print the Printer Settings Page, see *Printing the Printer Settings Page* on page 16. The NetBIOS name assigned is the first 15 characters of the node name and by default it will appear as “BRNxxxxxxxxxxx”.

- 3 You can now access the printer using HTTPS. We recommend secure management (SNMPv3) be used along with the HTTPS protocol. If you use the SNMPv3 protocol, follow the steps below.
- 4 Click **Network Configuration**.
- 5 Enter a user name and a password. The default User Name is “**admin**” and the default Password is “**access**”.
- 6 Click **Configure Protocol**.
- 7 Make sure that the **SNMP** setting is enabled, and then click **Advanced Setting** of **SNMP**.
- 8 You can configure the SNMP settings from the screen below.



We have three SNMP connection modes of operation.

#### ■ **SNMPv3 read-write access**

With this mode the print server uses version 3 of the SNMP protocol. If you want to manage the print server securely, use this mode.



#### **Note**

When you use the **SNMPv3 read-write access** mode, please note the following.

- You can manage the print server by using Web Based Management (web browser) only.
- We recommend secure SSL communication (HTTPS) be used.
- All applications that use SNMPv1/v2c will be restricted. To allow the use of SNMPv1/v2c applications, use **SNMPv3 read-write access and v1/v2c read-only access** or **SNMPv1/v2c read-write access** mode.

### ■ **SNMPv3 read-write access and v1/v2c read-only access**

In this mode the print server uses the read-write access of version 3 and the read-only access of version 1 and version 2c of the SNMP protocol.



#### **Note**

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When you use the **SNMPv3 read-write access and v1/v2c read-only access** mode, some of Lenovo applications (e.g. BRAdmin Light) that access to the print server do not work properly since they authorize the read-only access of version 1 and version 2c. If you want to use all applications, use the SNMPv1/v2c read-write access mode.

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### ■ **SNMPv1/v2c read-write access**

In this mode the print server uses version 1 and version 2c of the SNMP protocol. You can use all Lenovo applications under this mode. However, it is not secure since it will not authenticate the user and the data will not be encrypted.



#### **Note**

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For more information, see the Help text in the Web Based Management.

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## Printing documents securely using IPPS

To print documents securely over the internet, you can use the IPPS protocol.



### Note

- Communication using IPPS cannot prevent unauthorized access to the print server.
- IPPS is available for Windows® 2000/XP, Windows Vista® and Windows Server® 2003/2008.

To use the IPPS protocol, the following printer settings are required.

- A certificate and private key must be installed in the printer. For how to install certificate and private key, see *Creating and installing a certificate* on page 43.
- The IPPS protocol must be enabled. To enable the IPPS protocol, enable **SSL communication is used (port 443)** from the **Advanced Setting** page of **IPP** on the **Configure Protocol** page. For information on how to access the **Configure Protocol** page, see *Configuring the protocol settings* on page 36.

The basic steps for IPPS printing are the same as IPP printing. For detailed information, see *Internet printing for Windows®* in Chapter 6.

## Specifying a different URL

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

`https://Common Name/ipp`

This is the default URL and we recommend that you use this URL.

`https://Common Name/ipp/port1`

This is for HP Jetdirect compatibility.

`https://Common Name/`



### Note

If you forget the URL details, you can simply enter the above text (`https://Common Name/`) and the printer will still receive and process data.

Where “Common Name” is the Common Name that you assigned for the certificate, such as an IP address. For how to assign a Common Name for the certificate, see *Creating and installing a certificate* on page 43.

- For example:

`https://192.168.1.2/` (if the Common Name is the printer's IP address.)

## Using E-mail notification with user authentication

To use the E-mail notification function via secure SMTP server that requires a user authentication, you need to use POP before SMTP or SMTP-AUTH method. These methods prevent an unauthorized user from accessing the mail server. You can use Web Based Management (web browser) to configure these settings.



### Note

You need to match the settings of POP3/SMTP authentication with one of the E-mail servers. Contact your network administrator or your internet service provider about the configuration before using.

### How to configure the POP3/SMTP settings using Web Based Management (web browser).

- 1 Start your web browser.
- 2 Type "http://printer's IP address/" into your browser (where "printer's IP address" is the printer's IP address).
  - For example:  
http://192.168.1.2/

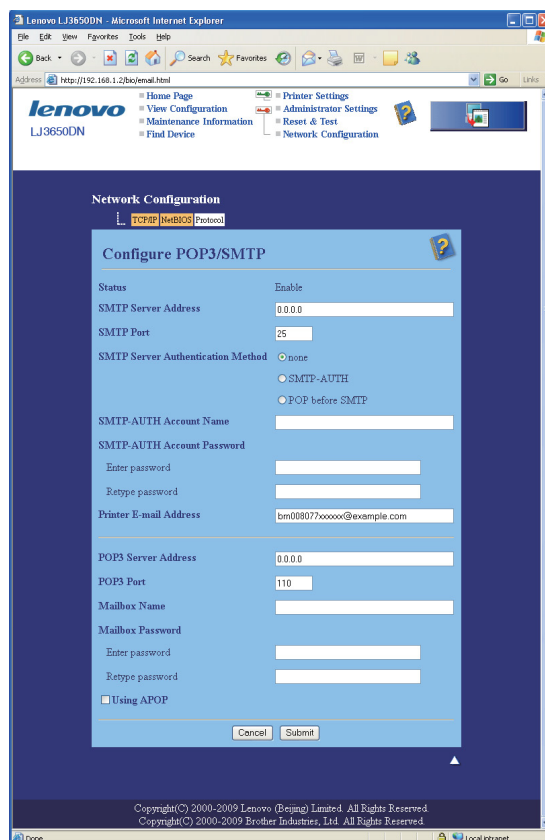


### Note

- If you have edited the hosts file on your computer or are using a Domain Name System, you can also enter the DNS name of the print server.
- For Windows® users, 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 on the Printer Settings Page. To learn how to print the Printer Settings Page, see *Printing the Printer Settings Page* on page 16. The NetBIOS name assigned is the first 15 characters of the node name and by default it will appear as "BRNxxxxxxxxxxx".

- 3 Click **Network Configuration**.
- 4 Enter a user name and a password. The default User Name is "**admin**" and the default Password is "**access**".
- 5 Click **Configure Protocol**.
- 6 Make sure that the **POP3/SMTP** setting is enable, and then click **Advanced Setting** of **POP3/SMTP**.

- 7 You can configure the **POP3/SMTP** settings on this page.



### Note

- You can also change the SMTP port number using Web Based Management. This is useful if your ISP (Internet Service Provider) implements the “Outbound Port 25 Blocking (OP25B)” service. By changing the SMTP port number to a specific number which your ISP is using for the SMTP server (for example, port 587), you would then be able to send an E-mail via the SMTP server. You will also need to check **SMTP-AUTH** of **SMTP Server Authentication Method** to enable the SMTP server authentication.
- If you can use both POP before SMTP and SMTP-AUTH, we recommend choosing SMTP-AUTH.
- If you choose POP before SMTP for the SMTP Server Authentication Method, you need to configure the POP3 settings. You can also use the APOP method.
- For more information, see the Help text in the Web Based Management.
- You can also confirm whether the E-mail settings are correct after configuration by sending a test E-mail.

- 8 After configuring, click **Submit**. The Test E-mail Send/Receive Configuration dialog appears.

- 9 Follow the instructions on-screen if you want to test with the current settings.



## Creating and installing a certificate

The Lenovo print server allows you to use SSL/TLS communication by configuring a certificate and corresponding private key. This print server supports two certification methods. A self-signed certificate and a certificate that is issued by a CA (Certificate Authority).

### ■ Using self-signed certificate

This print server issues its own certificate. Using this certificate, you can easily use the SSL/TLS communication without having a certificate from a CA. See *Creating and installing a self-signed certificate* on page 45.

### ■ Using a certificate from a CA

There are two methods for installing a certificate from a CA. If you already have a CA or if you want to use a certificate from an outside trusted CA:

- When using a CSR (Certificate Signing Request) from this print server. See *Creating CSR and installing a certificate* on page 58.
- When importing a certificate and a private key. See *Import and export the certificate and private key* on page 59.



### Note

- If you are going to use SSL/TLS communication, we recommend that you contact your system administrator before using.
- This print server stores only one pair of a certificate and a private key that you installed or previously imported. This printer overwrites the certificate and the private key if you install a new one.
- When you reset the print server back to its factory default settings, the certificate and the private key that are installed will be deleted. If you want to keep the same certificate and the private key after resetting the print server, export them before resetting and re-install them. See *How to export the certificate and private key* on page 59.

This feature can be configured using Web Based Management (web browser) only. Follow these steps to access the configure certificate page using Web Based Management.

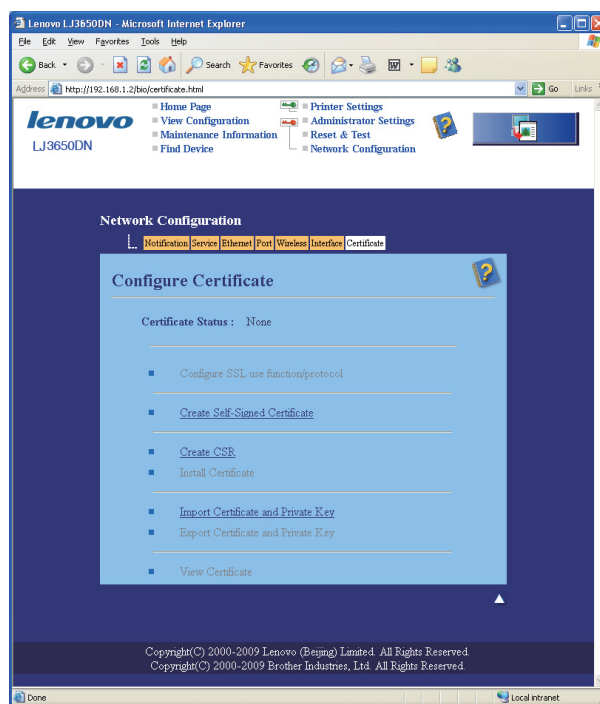
- 1 Start your web browser.
- 2 Type “`http://printer's IP address/`” into your browser. (where “printer's IP address” is the printer's IP address.)
  - For example:  
`http://192.168.1.2/`



### Note

- If you have edited the hosts file on your computer or are using a Domain Name System, you can also enter the DNS name of the print server.
- For Windows® users, as the print server supports TCP/IP and NetBIOS, you can also enter the NetBIOS name of the print server. The NetBIOS name can be seen on the Printer Settings Page. To learn how to print the Printer Settings Page, see *Printing the Printer Settings Page* on page 16. The NetBIOS name assigned is the first 15 characters of the node name and by default it will appear as “BRNxxxxxxxxxxxx”.

- 3 Click **Network Configuration**.
- 4 Enter a user name and a password. The default User Name is “**admin**” and the default Password is “**access**”.
- 5 Click **OK**.
- 6 Click **Configure Certificate**.
- 7 You can configure the certificate settings from the screen below.

**Note**

- The functions that are grayed and unlinked indicate they are not available.
- For more information on configuration, see the Help text in the Web Based Management.

## Creating and installing a self-signed certificate

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### How to create and install a self-signed certificate

- 1 Click **Create Self-Signed Certificate** on the **Configure Certificate** page.
- 2 Enter a **Common Name** and a **Valid Date**, then click **Submit**.



#### Note

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- The length of the **Common Name** is less than 64 bytes. Enter an identifier such as an IP address, node name or domain name to use when accessing this printer through SSL/TLS communication. The node name is displayed by default.
  - A warning will pop-up if you use the IPPS or HTTPS protocol and enter a different name in the URL than the **Common Name** that was used for the self-signed certificate.
- 


- 3 Now the self-signed certificate is created successfully.
- 4 Follow the on-screen instructions to configure the other security settings.
- 5 Restart the printer to activate the configuration.
- 6 Now the self-signed certificate is saved in your printer memory. To use SSL/TLS communication, the self-signed certificate also needs to be installed on your computer. Proceed to the next section.

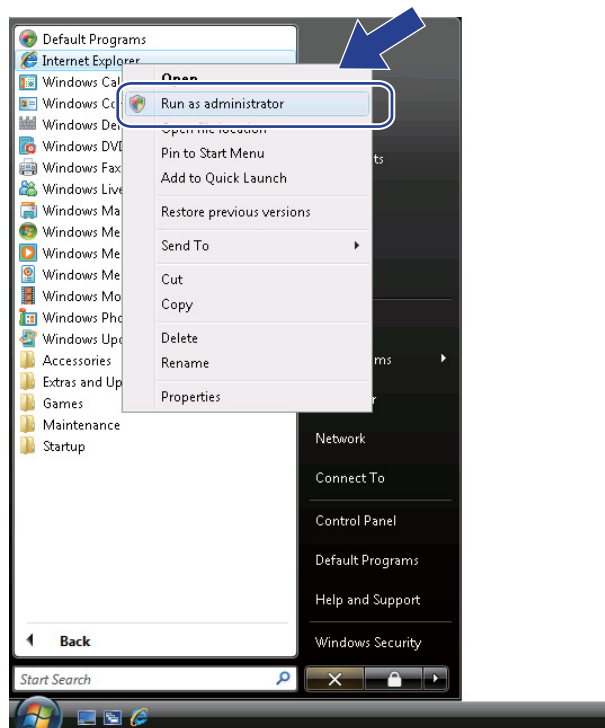
## How to install the self-signed certificate on your computer

### Note

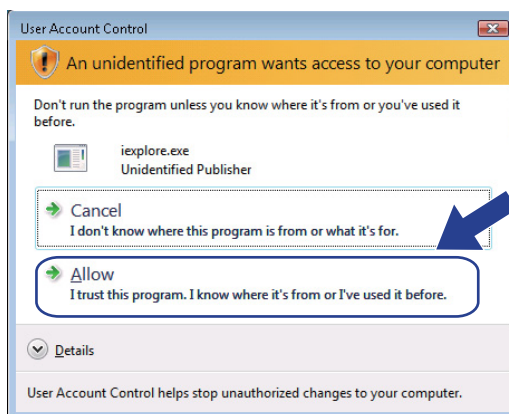
The following steps are for Microsoft® Internet Explorer® 6.0. If you use another web browser, follow the help text of the web browser itself.

### For Windows Vista® users that have administrator rights

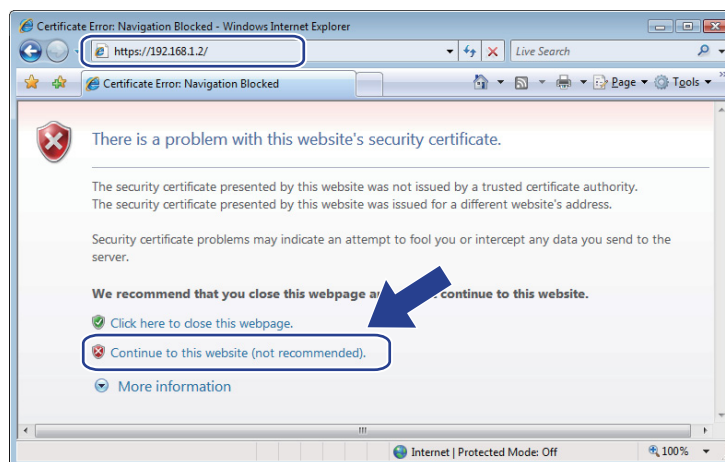
- 1 Click the  button and **All Programs**.
- 2 Right-click **Internet Explorer**, and then click **Run as administrator**.



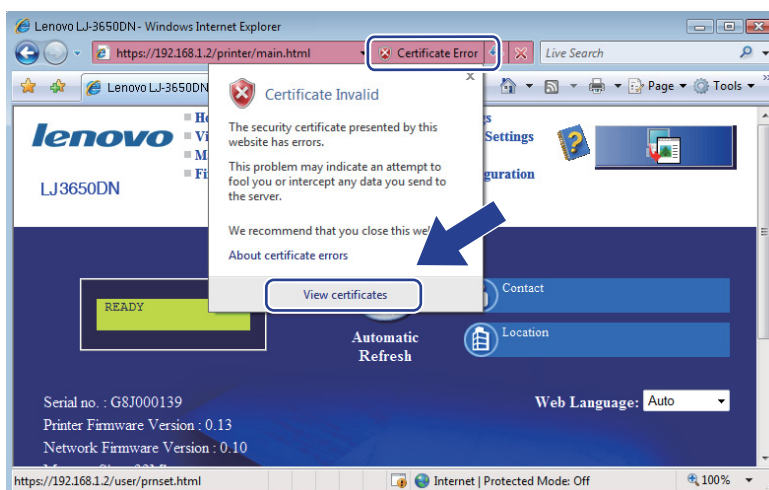
- 3 Click **Allow**.




- 4 Type "https://printer's IP address/" into your browser to access your printer (where "printer's IP address" is the printer's IP address or the node name). Then, click **Continue to this website (not recommended)**.

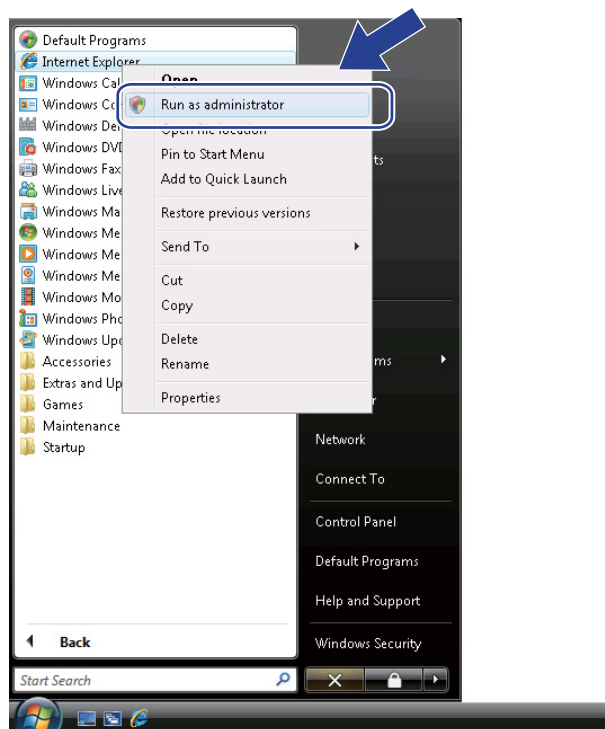


- 5 Click **Certificate Error**, and then click **View certificates**. For the rest of the instructions, follow the steps from 4 on page 54.



For Windows Vista® users that do not have administrator rights

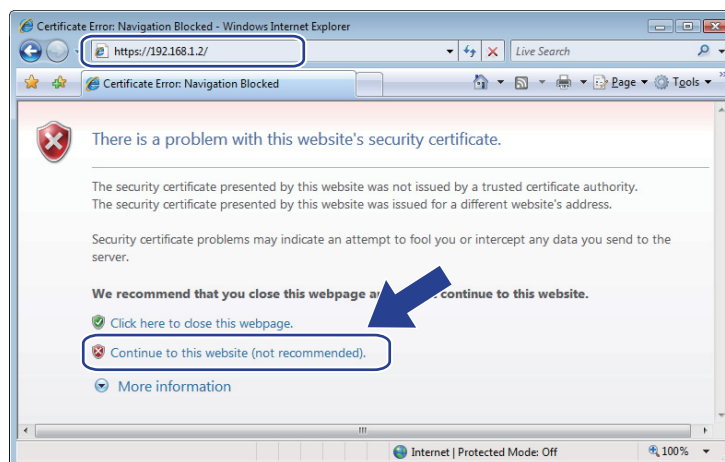
- 1 Click the  button and **All Programs**.
- 2 Right-click **Internet Explorer**, and then click **Run as administrator**.



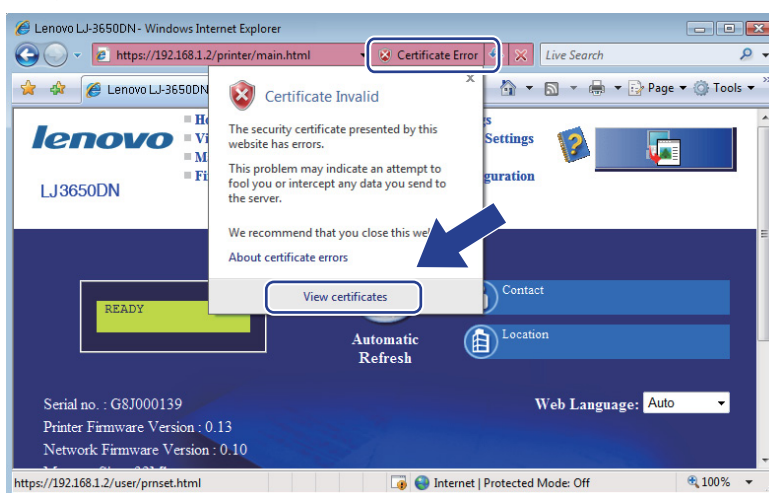
- 3 Choose the Administrator that you want to install with and enter the administrator password, and then click **OK**.



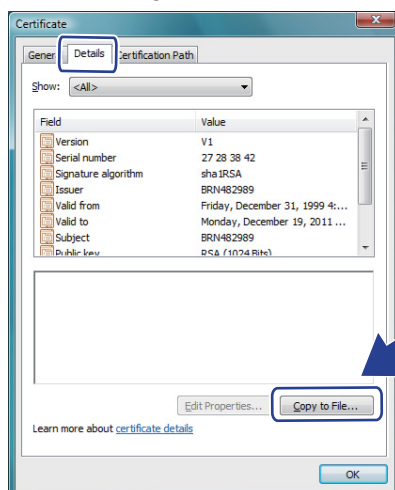
- 4 Type "https://printer's IP address/" into your browser to access your printer (where "printer's IP address" is the printer's IP address or the node name). Then, click **Continue to this website (not recommended)**.



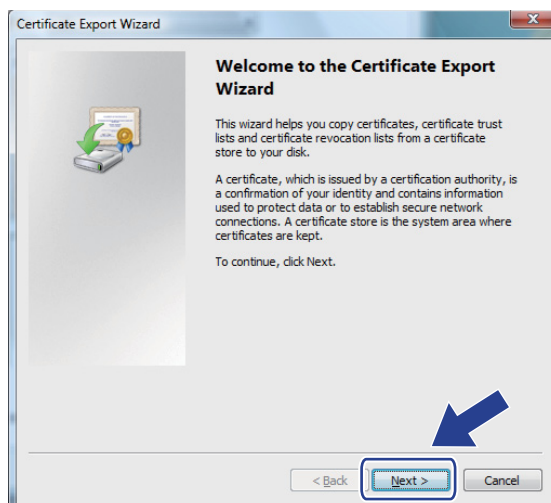
- 5 Click **Certificate Error**, and then click **View certificates**.



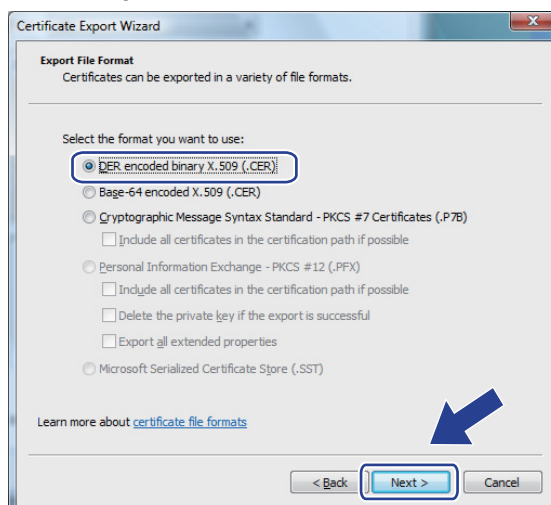
- 6 Choose the **Details** tab, and then click **Copy to File....**



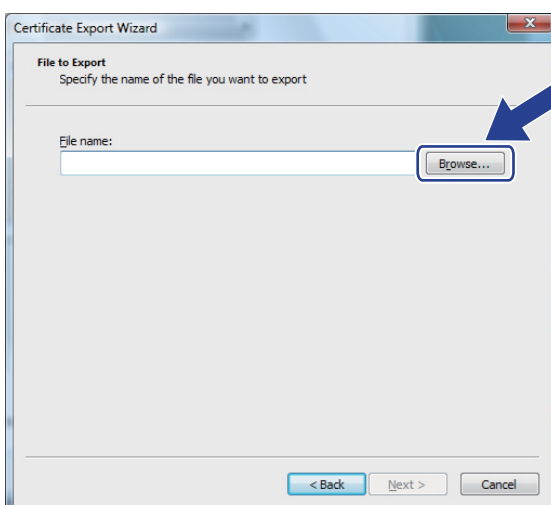
7 Click **Next**.



8 Make sure that **DER encoded binary X.509 (.CER)** is chosen, and then click **Next**.

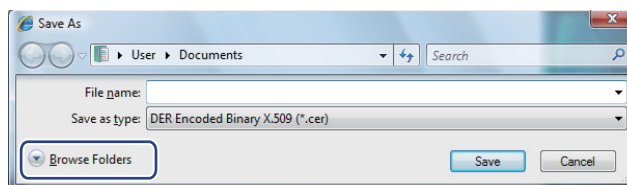


9 Click **Browse...**.

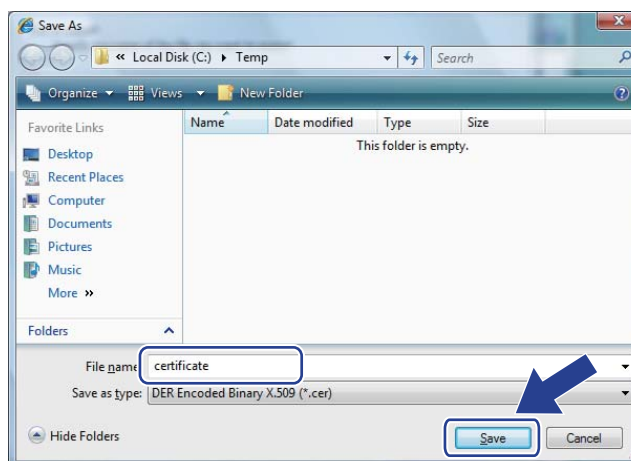




- 10 Click **Browse Folders**.

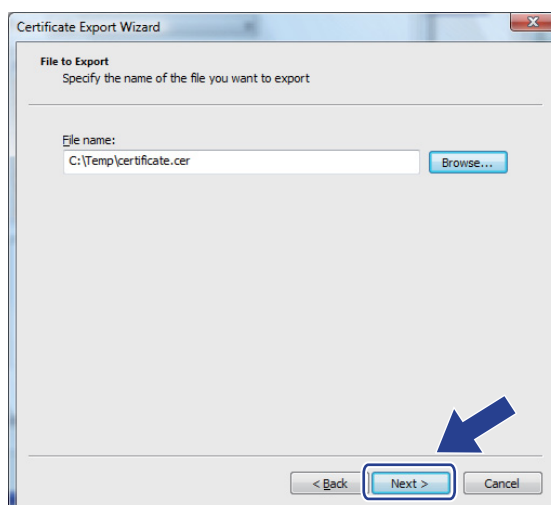


- 11 Choose a folder you want to save the certificate file in and enter a file name, and then click **Save**.

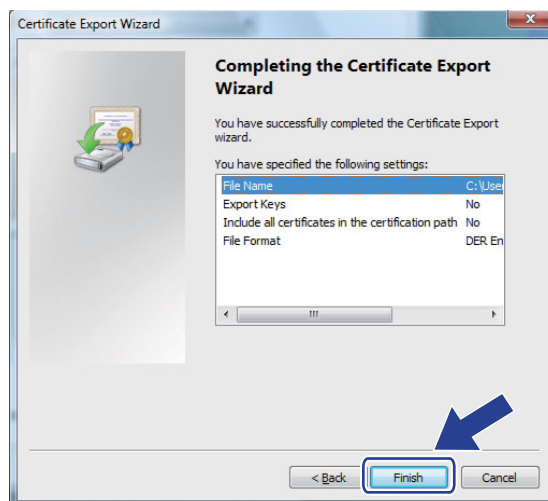
**Note**

If you choose **Desktop**, the certificate file is saved to the Desktop of the Administrator that you chose.

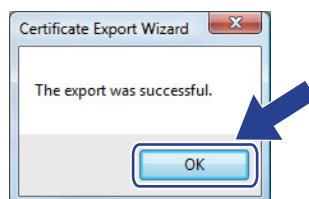
- 12 Click **Next**.



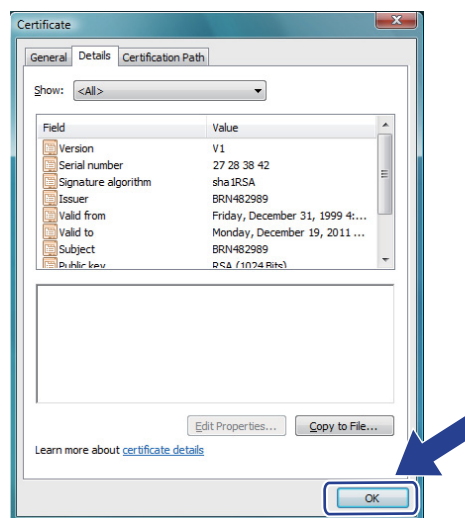
- 13 Click **Finish**.



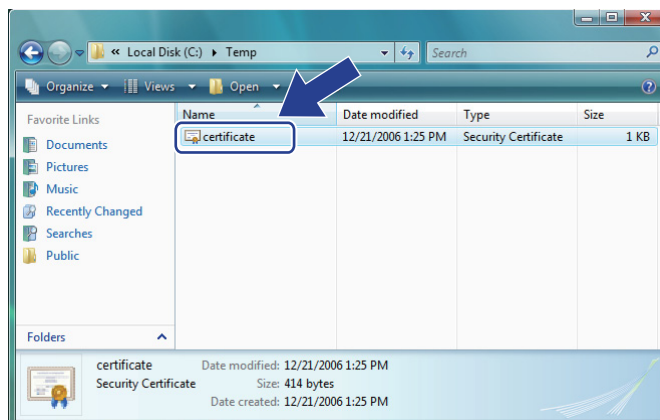
- 14 Click **OK**.



- 15 Click **OK**.



- 16 Open the folder that you saved the certificate file in 11 and double-click the certificate file. For the rest of the instructions, follow the steps from 4 on page 49.



**For Windows® 2000/XP and Windows Server® 2003/2008 users**

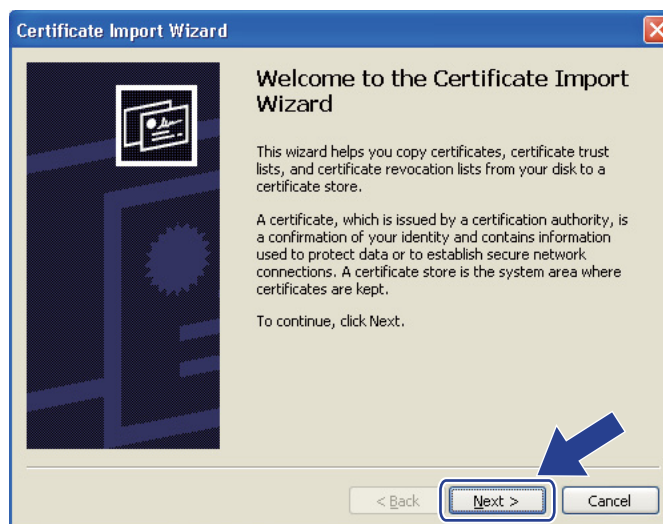
- 1 Start your web browser.
- 2 Type “https://printer’s IP address/” into your browser to access your printer (where “printer’s IP address” is the IP address or the node name that you assigned for the certificate).
- 3 When the following dialog appears, click **View Certificate**.



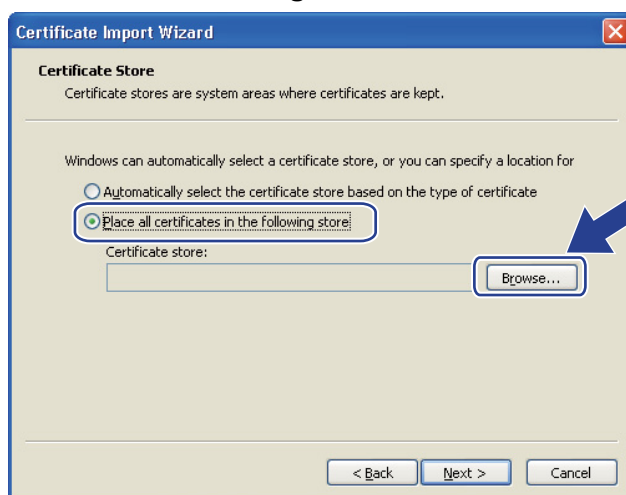
- 4 Click **Install Certificate...** from the **General** tab.



- 5 When the **Certificate Import Wizard** appears, click **Next**.



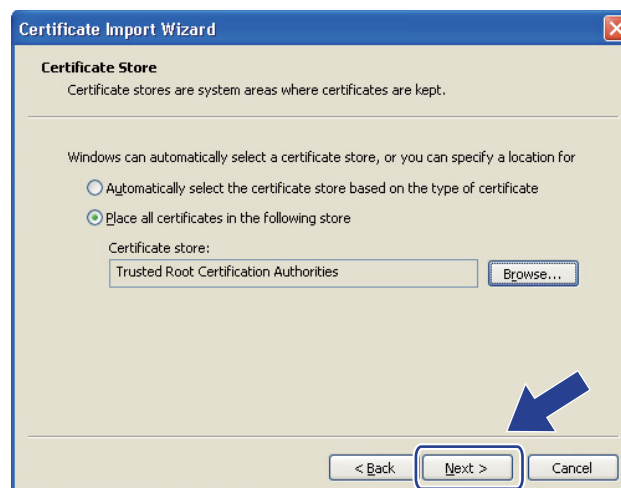
- 6 Choose **Place all certificates in the following store** and then, click **Browse...**.



- 7 Choose **Trusted Root Certification Authorities** and then, click **OK**.



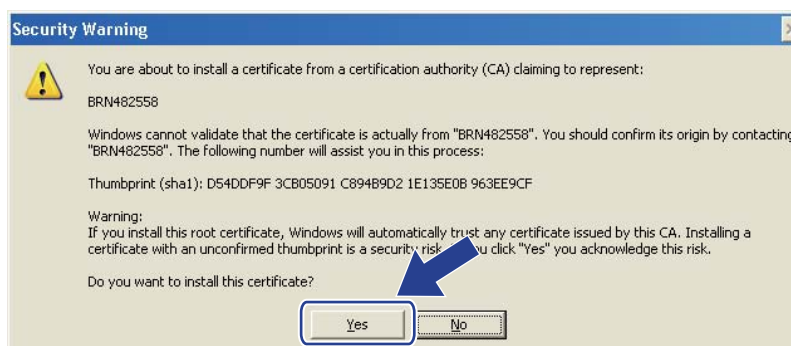
8 Click **Next**.



9 Click **Finish**.



10 Click **Yes**, if the fingerprint (thumbprint) is correct.



**Note**

The fingerprint (thumbprint) is printed on the Printer Settings Page. To learn how to print the Printer Settings Page, see *Printing the Printer Settings Page* on page 16.

- 11 Click **OK**.



- 12 Now the self-signed certificate is installed on your computer, and the SSL/TLS communication is available.

## Creating CSR and installing a certificate

### How to create the CSR

- 1 Click **Create CSR** on the **Configure Certificate** page.
- 2 Enter a **Common Name** and your information, such as **Organization**. Then click **Submit**.



#### Note

- We recommend that the Root Certificate from the CA be installed on your computer before creating the CSR.
- The length of the **Common Name** is less than 64 bytes. Enter an identifier such as an IP address, node name or domain name to use when accessing this printer through SSL/TLS communication. The node name is displayed by default. The **Common Name** is required.
- A warning will pop-up if you enter a different name in the URL than the **Common Name** that was used for the certificate.
- The length of the **Organization**, the **Organization Unit**, the **City/Locality** and the **State/Province** is less than 64 bytes.
- The **Country/Region** should be an ISO 3166 country code composed of two characters.

- 3 When the contents of the CSR appear, click **Save** to save the CSR file to your computer.
- 4 Now the CSR is created.



#### Note

- Follow your CA policy regarding the method to send a CSR to your CA.
- If you are using **Enterprise root CA** of Windows Server® 2003/2008, we recommend using the **Web Server** of the **CertificateTemplate** when creating the certificate.

### How to install the certificate to your printer

When you receive the certificate from a CA, follow the steps below to install it into the print server.



#### Note

Only a certificate issued with this printer's CSR can be installed.

- 1 Click **Install Certificate** on the **Configure Certificate** page.
- 2 Specify the file of the certificate that has been issued by a CA, and then click **Submit**.
- 3 Now the certificate is created successfully.
- 4 Follow the on-screen instructions to configure the other security settings.
- 5 Restart the printer to activate the configuration.
- 6 Now the certificate is saved in your printer. To use SSL/TLS communication, the Root Certificate from the CA needs to be installed on your computer. Contact your network administrator about installation.



## Import and export the certificate and private key

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### How to import the certificate and private key

- 1 Click **Import Certificate and Private Key** on the **Configure Certificate** page.
- 2 Specify the file that you want to import.
- 3 Enter the password if the file is encrypted, and then click **Submit**.
- 4 Now the certificate and private key are imported successfully.
- 5 Follow the on-screen instructions to configure the other security settings.
- 6 Restart the printer to activate the configuration.
- 7 Now the certificate and private key are imported to your printer. To use SSL/TLS communication, the Root Certificate from the CA needs to also be installed on your computer. Contact your network administrator about the installation.

### How to export the certificate and private key

- 1 Click **Export Certificate and Private Key** on the **Configure Certificate** page.
- 2 Enter the password if you want to encrypt the file.

**Note**

If a blank password is used, the output is not encrypted.

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- 3 Enter the password again for confirmation, and then click **Submit**.
- 4 Specify the location where you want to save the file.
- 5 Now the certificate and private key are exported to your computer.

**Note**

You can import the file that you exported.

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## Overview

This chapter explains how to resolve typical network problems you may encounter when using the machine. This chapter 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 back to the factory default

You can reset the print server back to its factory default settings (resetting all information such as the password and IP address information). (See *Reset the network settings to the factory default* on page 17.)

### My computer cannot find the machine/print server.


I cannot make a necessary connection to the machine/print server.

My machine/print server does not appear in the window of BRAdmin Light .

#### ■ For Windows®

The firewall on your computer may be rejecting the necessary network connection to the machine. In this case, you will need to disable the Firewall on your computer and re-install the drivers.

#### Windows Vista® users:

- 1) Click the  button, **Control Panel**, **Network and Internet**, **Windows Firewall** and click **Change settings**.
- 2) When the **User Account Control** screen appears, do the following.
  - Users who have administrator rights: Click **Continue**.
  - For users who do not have administrator rights: Enter the administrator password and click **OK**.
- 3) Click the **General** tab. Make sure that **Off (not recommended)** is selected.
- 4) Click **OK**.



#### Note

After the Lenovo software package is installed, turn your Firewall back on.

**Windows® XP SP2 / SP3 users:**

- 1) Click the **Start** button, **Control Panel**, **Network and Internet Connections**.
- 2) Double-click **Windows Firewall**.
- 3) Click the **General** tab. Make sure that **Off (not recommended)** is selected.
- 4) Click **OK**.

**Note**

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After the Lenovo software package is installed, turn your Firewall back on.

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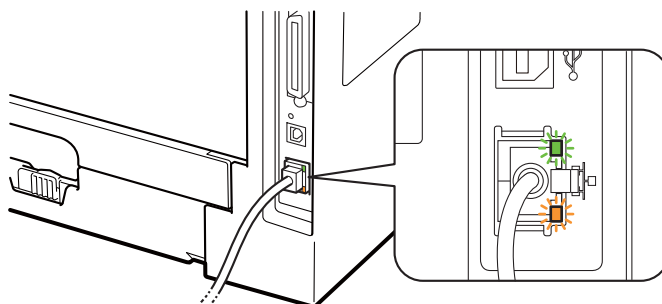
## Network print software installation problems

The Lenovo print server is not found during setup of the network print software installation or from the printer driver of the Lenovo machine 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 machine is powered on, is on-line and ready to print.
- 2 Check the connection status for your network.  
Check to see if there is any LED activity. Lenovo print server has two LEDs on the back panel of the machine. The upper green LED shows Link/Activity (Received/Transmit) status. The lower orange LED shows Speed status.



- The upper LED is green: The Link/Activity LED will be green if the print server is connected to a Ethernet network.
  - The upper LED is off: The Link/Activity LED will be off if the print server is not connected to the network.
  - The lower LED is orange: The Speed LED will be orange if the print server is connected to a 100BASE-TX Fast Ethernet network.
  - The lower LED is off: The Speed LED will be off if the print server is connected to a 10BASE-T 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 a 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 16.

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

■ **For Windows®**

- 1 Click **Start, All Programs** <sup>1</sup>, **Accessories** then choose **Command Prompt**.
- <sup>1</sup> **Programs** for Windows® 2000 users
- 2 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 Mac OS X 10.3.9 - 10.5.x**

- 1 From the **Go** menu, choose **Applications**.
- 2 Open the **Utilities** folder.
- 3 Double-click the **Terminal** icon.
- 4 Try pinging the print server from the Terminal window:  
`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).

- 5 If you have tried ❶ to ❹ above and it does not work, then reset the print server back to its factory default settings and try from the initial setup again. For resetting, see *Reset the network settings to the factory default* on page 17.
- 6 If the installation failed, the Firewall on your computer may be blocking the necessary network connection to the machine. In this case, you will need to disable the Firewall on your computer and re-install the drivers. For more information, see *General problems* on page 60. If you are using personal Firewall software, see the *User's Guide* for your software or contact the software manufacturer.

# Printing problems

## Print job is not printed.

Check the status and configuration of the print server.

- 1 Make sure that the machine is powered on, is on-line and ready to print.
- 2 Print the Printer Settings Page of the machine 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 16.
- 3 Verify that the print server is on your network as follows:

### ■ For Windows®

- 1 Click **Start**, **All Programs**<sup>1</sup>, **Accessories** then choose **Command Prompt**.  
<sup>1</sup> **Programs** for Windows® 2000 users
- 2 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).
- 3 If a successful response is received, then proceed to *Windows® 2000/XP, Windows Vista® and Windows Server® 2003/2008 IPP troubleshooting* on page 65. Otherwise, proceed to 4.

### ■ For Mac OS X 10.3.9 - 10.5.x

- 1 From the **Go** menu, choose **Applications**.
- 2 Open the **Utilities** folder.
- 3 Double-click the **Terminal** icon.
- 4 Try pinging the print server from the Terminal window:  
`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).
- 5 If a successful response is received, then proceed to 4.

- 4 If you have tried 1 to 3 above and it does not work, then reset the print server back to its factory default settings and try from the initial setup again. For resetting, see *Reset the network settings to the factory default* on page 17.

## 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 machine 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® 2000/XP, Windows Vista® and Windows Server® 2003/2008 IPP troubleshooting

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**I 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, Windows Vista® and Windows Server® 2003/2008 system.

`http://ipaddress/ipp`

**The “Go to printer’s website” option in Windows® XP and Windows Vista® is not working. The “Get More Info” option in Windows® 2000 and Windows Server® 2003/2008 is not working.**

If you are using a URL of:

`http://ipaddress:631` or `http://ipaddress:631/ipp`,

the **Get More Info** option in Windows® 2000/XP, Windows Vista® and Windows Server® 2003/2008 will not function. if you wish to use the **Get More Info** option, use the following URL:

`http://ipaddress`

This will then force Windows® 2000/XP, Windows Vista® and Windows Server® 2003/2008 to use Port 80 to communicate with the Lenovo print server.

### Web Based Management (web browser) troubleshooting (TCP/IP)

---

- 1 If you cannot 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 computer from trying to connect to your ISP or proxy server every time you wish to look at the print server.
- 2 Make sure that you are using the proper web browser, we recommend Microsoft® Internet Explorer® 6.0 (or greater) or Firefox 1.0 (or greater) for Windows® and Safari 1.3 (or greater) for Macintosh. Please also make sure that JavaScript and Cookies are always enabled in whichever browser you use. If a different web browser is used, make sure it is compatible with HTTP 1.0 and HTTP 1.1.

## 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
TEXT_P1	TCP/IP text service (adds carriage return after each line feed)
PCL_P1	PCL service (switches PCL-compatible printer to PCL mode)
BRNxxxxxxxxxxxx	TCP/IP binary
BRNxxxxxxxxxxxx_AT	PostScript® service for Macintosh
POSTSCRIPT_P1	PostScript® service (switches PCL-compatible printer to PostScript® mode)

Where "xxxxxxxxxxxx" is your machine's MAC Address (Ethernet Address).

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

For information on how to configure your machine for a network using the BRAdmin Light utility or Web Based Management (web browser), see *Setting the IP address and subnet mask* on page 11.

### 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 Light or Web Based Management (web browser) .



## 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), MAC Address (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:

```
BRN008077310107 1 00:80:77:31:01:07 192.189.207.3
```

and:

```
BRN008077310107: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 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 BRN008077310107
```

Where the first entry is the MAC Address (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).

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 its 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, see *Changing the print server settings* on page 14.

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

### ■ Windows® systems

Windows® systems require the dash “-” character between each digit of the MAC Address (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 MAC Address (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 Web Based Management (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.

TELNET is an effective method to change the machine's 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 administrator 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 administrator 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 Ctrl-D (i.e., hold down the control key and type "D") to end the remote console session.

# Installation when using a Network Print Queue or Share (For Windows® users)



## Note

If you are going to connect to a shared printer on your network, we recommend that you ask your system administrator about the queue or share name for the printer prior to installation.

## Installing the driver and choosing the correct printer queue or share name

- 1 Turn on your computer. (You must be logged on with Administrator rights.) Close any applications running before configuration.
- 2 Put the supplied CD-ROM into your CD-ROM drive. The opening screen will appear automatically. Choose your printer model.
- 3 Click **Install software** on the menu screen.
- 4 Click **Printer Driver**.



## Note

For Windows Vista®, when the **User Account Control** screen appears, click **Continue**.

- 5 When the **License Agreement** window appears, click **Yes** if you agree to the License Agreement.
- 6 Choose **Standard Installation**, and then click **Next**.
- 7 Choose **Network Shared Printer**, and then click **Next**.
- 8 Choose your printer's queue, and then click **OK**.



## Note

Contact your administrator if you do not know the location or the name of the printer in the network.

- 9 Click **Finish**.



## Note

- If you do not want to set your printer as Default printer, uncheck **Set as Default Printer**.
- If you want to disable status monitor, uncheck **Enable Status Monitor**.



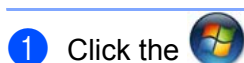
**Setup is now complete.**


# Installation when using Web Services (For Windows Vista® users)



## Note

- You must configure the IP address on your machine before you proceed with this section. If you have not configured the IP address, see *Setting the IP address and subnet mask* on page 11 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.



Click the  button, then choose **Network**.



The machine's Web Services Name will be shown with the printer icon. Right-click the machine you want to install.



## Note

The Web Services Name for the Lenovo machine is your model name and the MAC Address (Ethernet Address) of your machine (e.g. Lenovo LJ3650DN[XXXXXXXXXXXX]).



Click **Install**.



When the **User Account Control** screen appears, do the following.

- Users who have administrator rights: Click **Continue**.
- For users who do not have administrator rights: Enter the administrator password and click **OK**.



Choose **Locate and install driver software (recommended)**.



Insert Lenovo CD-ROM.



Choose Don't search online and then **Browse my computer for driver software (advanced)** on your computer.



Choose your CD-ROM drive, and then the **install \ your language \ PCL \ win2kxpvista** <sup>1</sup> folder.

<sup>1</sup> **win2kxpvista** folder for 32-bit OS users and **winxp64vista64** folder for 64-bit OS users



Click **Next** to begin installation.

## Print server specifications

### Ethernet wired network

---

<b>Network node name</b>	NC-6800h
<b>LAN Support for</b>	You can connect your machine to a network for Network Printing. Windows® 2000 Professional, Windows® XP, Windows® XP Professional x64 Edition, Windows Vista®, Windows Server® 2003, Windows Server® 2003 x64 Edition and Windows Server® 2008 Mac OS X 10.3.9 - 10.5.x
<b>Protocols</b>	<p>IPv4: ARP, RARP, BOOTP, DHCP, APIPA (Auto IP), WINS/NetBIOS name resolution, DNS resolver, mDNS, LLMNR responder, LPR/LPD, Custom Raw Port/Port9100, IPP, IPPS, FTP Server, SSL/TLS, POP before SMTP, SMTP-AUTH, APOP, TELNET server, SNMPv1, SNMPv2c, SNMPv3, HTTP/HTTPS server, TFTP client and server, SMTP client, ICMP, WebServicesPrint, LLTD responder</p> <p>IPv6: (Turned off as default) NDP, RA, DNS resolver, mDNS, LLMNR responder, LPR/LPD, Custom Raw Port/Port9100, IPP, IPPS, FTP server, SSL/TLS, POP before SMTP, SMTP-AUTH, APOP, TELNET server, SNMPv1, SNMPv2c, SNMPv3, HTTP/HTTPS server, TFTP client and server, SMTP client, ICMPv6, WebServicesPrint, LLTD responder</p>
<b>Network type</b>	Ethernet 10/100 BASE-TX Auto Negotiation (Wired LAN)
<b>Management utilities</b>	BRAdmin Light Web Based Management (web browser)

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## D

## Index

## A

APIPA .....	5, 68
APOP .....	35
ARP .....	69

## B

BINARY_P1 .....	66
BOOTP .....	5, 67
BRAdmin Light .....	1, 2, 11, 14
BRNxxxxxxxxxxxx .....	66
BRNxxxxxxxxxxxx_AT .....	66

## C

CA .....	34, 43
Certificate .....	34, 43
CSR .....	34
Custom Raw Port .....	6

## D

DHCP .....	5, 66
Digital signature .....	34
DNS .....	5, 36, 37, 41, 43

## F

Factory default .....	17
Firewall .....	60, 63

## H

HTTP .....	7
HTTPS .....	37

## I

Internet printing .....	1, 25
IP address .....	8
IPP .....	6, 25
IPPS .....	35, 40
IPv6 .....	7

## L

LLMNR .....	6
LLTD .....	7
LPR/LPD .....	6

## M

MAC Address .....	16
mDNS .....	6

## N

Network printing .....	21
Network Shared printing .....	4

## O

Open Source Licensing Remarks .....	74
Operating Systems .....	1

## P

Password .....	25
PCL_P1 .....	66
Peer-to-Peer .....	3
Ping .....	63, 64
POP before SMTP .....	35, 41
Port9100 .....	6
POSTSCRIPT_P1 .....	66
Print server setting .....	14
Printer Settings Page .....	16
Private Key .....	43
Protocol .....	5, 36
Public key cryptosystem .....	34

## R

RARP .....	5, 68
RFC 1001 .....	66

## S

Security protocols .....	35
Security terms .....	34
Service .....	66
Shared key cryptosystem .....	34
SMTP client .....	6
SMTP-AUTH .....	35, 41
SNMP .....	6
SNMPv3 .....	35
Specifications .....	73
SSL/TLS .....	35, 43
Status Monitor .....	1
Subnet mask .....	9

T

---

TCP/IP ..... 5

TCP/IP printing ..... 21

Telnet .....6, 70

TEXT\_P1 ..... 66

Trademarks .....ii

W

---

Web Based Management (web browser) ..... 2, 36, 37

Web browser (HTTP) ..... 14

Web server (HTTP) ..... 7

Web server (HTTPS) ..... 35

Web services ..... 7

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