



N4050e Wireless Print Server

User's Guide for Macintosh



August 2004

www.lexmark.com

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N4050e Print Server

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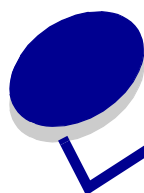
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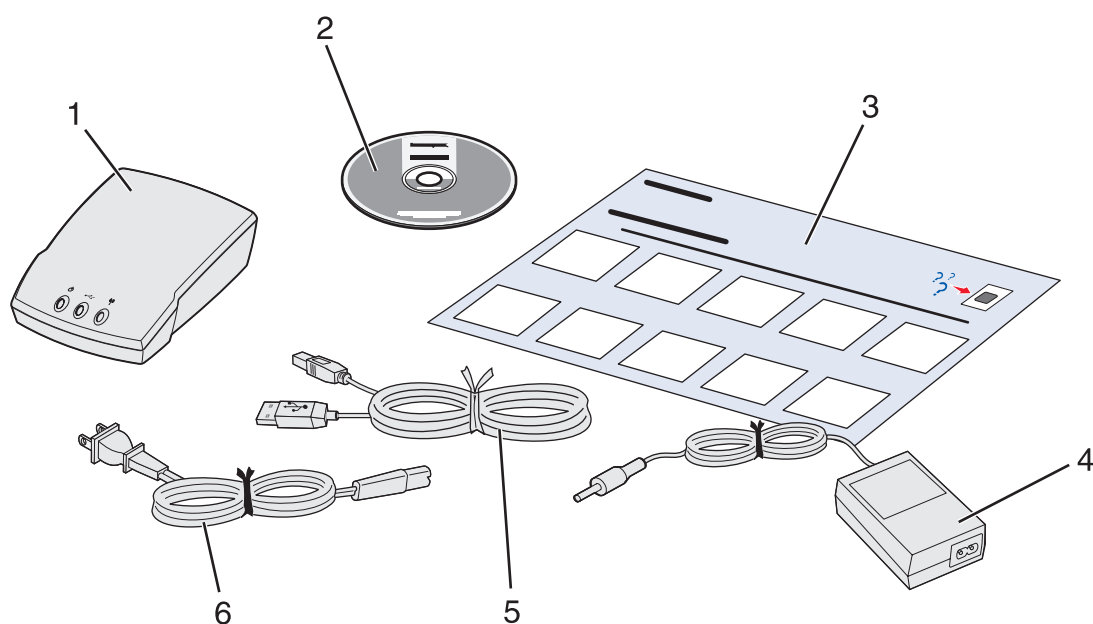
Contents

Chapter 1: Getting started.....	1
Unpacking your print server	1
Wireless network settings.....	3
 Chapter 2: Setting up your wireless print server	 4
Setup overview.....	4
Minimum requirements.....	5
Safety information	5
Select a location for your print server.....	5
Connect the print server to your printer.....	6
Configuring your wireless print server	6
Changing your wireless print server settings.....	8
 Chapter 3: Troubleshooting	 9
Indicator light status	9
My network key was invalid.....	9
My wireless print server was unable to join the network	10
The print server was configured correctly, but cannot be found on the network.....	10
No printer was found attached to the print server	10
My network printer does not print.....	10
 Glossary.....	 12

1

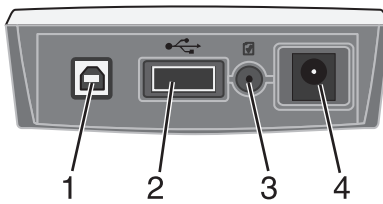
Getting started

Unpacking your print server



Number	Description
1	N4050e Print Server
2	N4050e Setup Utility CD
3	Setup Sheet
4	Power supply
5	USB cable
6	Power cord wall adapter

Understanding the print server ports



Number	Part	Description
1	USB port (to computer)	Connects your print server to a computer for initial configuration and network setup. Use USB port 2 to connect your print server to your printer.
2	USB port (to printer)	Connects your print server to your printer.
3	Test button	<p>To print a test page, press and release the test button once.</p> <p>Note: Test pages are printed in ASCII. Your printer must support ASCII printing to print a test page.</p> <p>To reset the print server to the factory default settings:</p> <ol style="list-style-type: none">1 Disconnect the power supply.2 Reconnect the power supply while pressing the test button.3 Continue holding the test button until only the power indicator light is lit.
4	Power cord connector	Connects the print server to the power supply.

Understanding the print server indicator lights



Number	Part	Description
1	Power Indicator	The print server has power.
2	USB status	The print server is connected by USB and is communicating.
3	Wireless status	The print server is communicating wirelessly.

Wireless network settings

You may need to know some of your wireless network settings in order to set up your wireless print server. Here are some of the settings that you may need to know:

For basic setup:

- Network Name, also known as SSID (Service Set ID)
- Security type
 - None
 - WEP (Wired Equivalency Protocol)
 - WPA (Wi-Fi Protected Access)
- Security Key(s)

For advanced setup:

- Basic setup settings listed above
- BSS (Basic Service Set) Type (the type of wireless network you use—Ad-Hoc or Infrastructure)
- Wireless Channel Number

2

Setting up your wireless print server

Setup overview

The setup process consists of three parts: physically connecting the print server to your printer using the provided USB cable, configuring your wireless print server, and installing your printer on the network. After the print server has been attached to the printer, the configuration segment involves using Zero configuration networking to connect to the print server over the computer to computer (Ad-Hoc) wireless network and changing the print server wireless network settings. The installation segment involves connecting the print server to the printer that you want to install and running the printer drivers or printer software CD to install it as a network printer.

The setup process accommodates networks that use either Infrastructure mode (in which the network structure is based on a series of wireless routers or base stations) or Ad-Hoc mode (in which wireless devices communicate with each other directly without using a wireless router).



Infrastructure mode



Ad-Hoc mode

Before setting up your wireless print server, make sure your printer has been set up correctly

- The toner or print cartridges are installed correctly.
- Paper has been loaded into the printer.
- Your printer is turned on and ready to be installed.

For help setting up your printer, refer to your printer documentation.

Minimum requirements

- The Lexmark Wireless Print Server
- An existing wireless network

The following security types are supported:

- No security
 - WEP (64-bit or 128-bit security keys)
 - WPA (Wi-Fi Protected Access)—(PSK–TKIP)
- A network-capable printer
 - The drivers or printer software CD that came with your printer
 - Mac OS X or higher
 - Safari Web browser

Note: If your operating system does not include the Safari Web browser, you can download it from the apple Web site at this address: <http://www.apple.com/safari>.

Safety information

- Use only the power supply provided with this product or the manufacturer's authorized replacement power supply.
- Connect the power cord to a properly grounded electrical outlet that is near the product and easily accessible.
- Refer service or repairs, other than those described in the user documentation, to a professional service person.

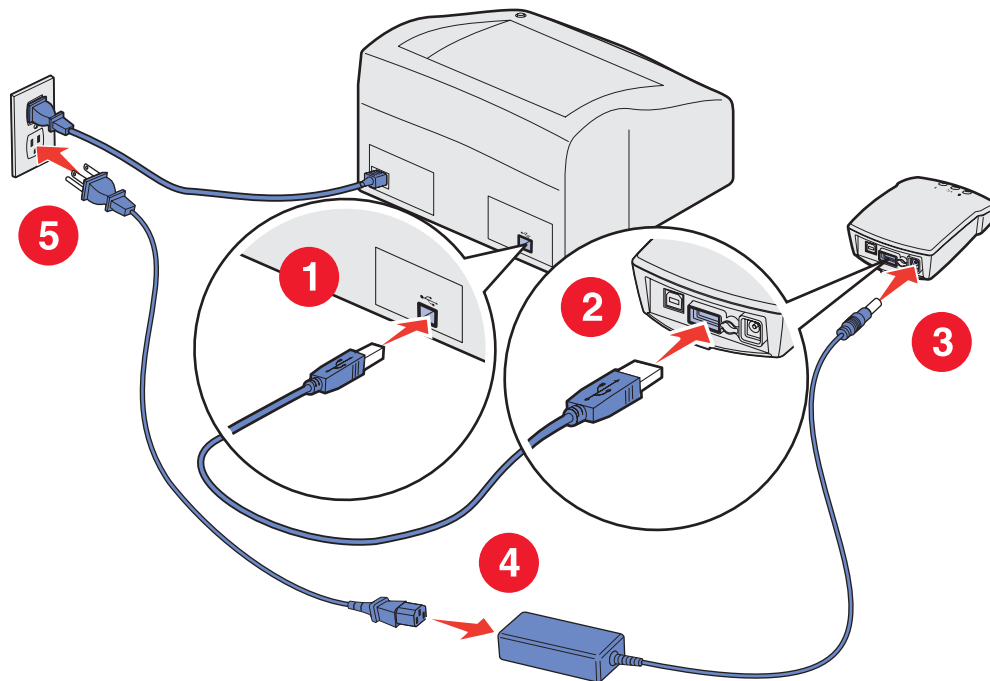
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Select a location for your print server

The location of your print server is vital to ensuring that it works effectively. Follow these guidelines when determining a location for your print server:

- Place the print server on a flat, level surface away from excessive heat, cold, and moisture.
- Keep the print server within appropriate range of a wireless access point if your network uses an Infrastructure configuration.
- Keep the print server away from other electronic devices that could interfere with the wireless signal.
- Keep the print server away from obstructions that could interfere with the wireless signal.

Connect the print server to your printer



- 1 Insert the small end of the USB cable into the printer USB port.
- 2 Insert the large end of the USB cable into the middle USB port on the back of the print server.
- 3 Connect the power supply to the print server.
- 4 Connect the power supply to the power cord.
- 5 Connect the power cord to a properly-grounded electrical outlet that is near the product and easily accessible.

Configuring your wireless print server

- 1 In the Applications folder, open **Internet Connect**, and click the **AirPort** icon in the toolbar.
- 2 In the Network pop-up menu, select the **print server** network.
- 3 Open the Safari Web browser, and select **Show All Bookmarks** from the Bookmarks menu.
- 4 Select **Rendezvous** from the Collections column on the left-hand side of the window.
- 5 In the right-hand column, double-click the N4050e wireless print server bookmark.
- 6 Once the print server internal Web page loads, in the left-hand column, click **Settings**.
- 7 Under the Print Server Settings subgroup, click **Wireless**.

- 8** Change the listed network settings for the N4050e wireless print server to match your wireless network, including:

- SSID
- BSS type
- Channel Number
- Encryption Mode

For information on accessing your current wireless network parameters, refer to your wireless network documentation, or contact the person who set up your network.

Note: The SSID must be entered exactly as it is used on your network. SSIDs are case-sensitive, so if the SSID is entered incorrectly, the print server will not be able to communicate on the network and must be reset to factory defaults so the configuration process can be repeated. For information on resetting the print server to factory defaults, see the Test Button description in the [Understanding the print server ports](#) section.

- 9** Click **Submit**.
- 10** Wait 10 seconds while the print server resets.
- 11** In the Applications folder, open **Internet Connect**, and click the **AirPort** icon in the toolbar.
- 12** In the Network pop-up menu, select your original wireless network to restore your computer's wireless network settings back to the original values.

Installing your printer on the network

Once the print server has been configured, use the printer drivers CD or printer software CD that came with your printer to install your network printer on the computers attached to your network.

Make sure that your printer drivers CD or printer software CD is inserted into the computer you want to install the printer for.

Installing your network printer on additional network computers

If you are installing your network printer for use with multiple computers on the network, you will need to repeat the [Installing your printer on the network](#) process for each computer you want to have access to the printer. The wireless print server does not need to be reconfigured for each successive installation.

Changing your wireless print server settings

The easiest way to change settings in the wireless print server is through the embedded Web server. For this to work, you must successfully complete the installation of the print server on your network.

- 1** Open the Safari Web browser, and select **Show All Bookmarks** from the Bookmarks menu.
- 2** Select **Rendezvous** from the Collections column on the left-hand side of the window.
- 3** In the right-hand column, double-click the N4050e wireless print server bookmark.
- 4** Select the settings you want to change.
- 5** Enter the changes, and then click **Submit**.

3

Troubleshooting

Use this section to solve problems you may have while setting up your print server.

Indicator light status

Indicator light pattern	State	Result
Power indicator	Off	The Print Server does not have power. Make sure that the power cord is attached correctly and is plugged into an outlet with power.
USB status	Off	The USB cable connecting the print server to either the printer or the computer is not secure. Make sure that the USB cable is connected correctly on both ends.
	On	The USB cable connecting the print server to the printer or computer is secure and recognized by the USB port.
	Blinking	A print job is active.
Wireless status	Off	The print server is searching for a network connection, or no network connection is available.
	On	The print server is connected to the network.
USB status and Wireless status	Blinking alternately	The print server has experienced an error. Power the print server off and back on again. If the problem continues, contact the Customer Support Center.

Note: To locate the Power and USB indicator lights, see [Understanding the print server indicator lights](#).

My network key was invalid

A network key is like a password and should follow these criteria:

- WEP key
 - Exactly 5 or 13 ASCII characters
 - Or
 - Exactly 10 or 26 Hexadecimal characters (using A–F and 0–9 only)
- WPA-PSK key (for infrastructure mode only)

- Between 8 and 63 ASCII characters

My wireless print server was unable to join the network

There are many factors that can prevent the print server from joining the network. Here are some of the most common troubleshooting options:

- Verify that the print server settings match those used by your wireless network.
- Verify that the print server is within range of the network.
- If your network uses MAC address filtering, provide the MAC address for the print server to your network. The MAC address can be found on the bottom of the print server.

The print server was configured correctly, but cannot be found on the network

- Verify that the print server has power and that the power indicator light is on.
- Verify that the print server is within range of the wireless network.
- Verify that the print server is located away from other electronic devices that may interfere with the wireless signal.
- Verify that your wireless network is using a unique network name (SSID). If not, it is possible that the print server is communicating over a different, nearby network that uses the same network name.
- Verify that the print server has a valid IP address on the network.

No printer was found attached to the print server

- Verify that the USB cable is properly connected to both the printer and the print server.
- Verify that the printer has power.
- Verify that the printer was set up correctly.
- Verify that the print server has power and is available on your network.

My network printer does not print

- Make sure all cables to the printer, print server, electrical outlet, and network connection are secure.
- Make sure the Power, USB, and Wireless status indicator lights are on.
- Check the printer status.

- Make sure the network is operating properly.

Refer to your network documentation, or contact the person who set up your network if you are not sure that your network is operating correctly.

- Make sure the printer driver is installed on the computer from which you are sending the print job.

Note: You must install the printer driver on each computer that uses the network printer.

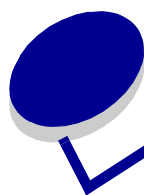
- Make sure the correct printer port is selected.
- Restart the computer.
- Uninstall and then reinstall the printer software.

If the printer still does not print, refer to your printer documentation for help.

- Make sure there is not a problem with the printer itself.

- 1 Disconnect the printer from the printer adapter.
- 2 Attach the printer directly to your computer with a USB cable.
- 3 Open a text document, and choose **File** → **Print**.
- 4 Select the attached printer in the Printer pop-up window, and click **Print**.

If you are able to print when the printer is directly attached, there may be a problem with your network. Refer to your network documentation, or contact your network administrator.



Glossary

Ad-Hoc network. A stand-alone or peer-to-peer network in which wireless devices communicate directly with one another without using a wireless access point or base station.

AirPort. The Apple name for 802.11b and 802.11g wireless networking standards.

ASCII. A standard character set consisting of 96 uppercase and lowercase letters, plus 32 nonprinting control characters.

BSS Type. Basic Service Set, the type of wireless network that you are using. The BSS type can be one of the following:

- Infrastructure network
- Ad-Hoc network

Channel number. A number associated with the radio frequency at which an 802.11 device operates. The channel numbers available vary by geographical region.

Data Encryption mode. The security protocol that is used to protect data that is transferred across your wireless network and provide network authentication. You can use one of the following protocols for data encryption:

- None
- Shared—WEP (Wired Equivalency Protocol)
- WPA-Personal (TKIP:PSK)—WPA (Wi-Fi Protected Access) in PSK (Pre-Shared Key) mode

DHCP. Dynamic Host Configuration Protocol, a protocol for assigning dynamic IP addresses to devices on a network. With dynamic addressing, a device can automatically request an IP address every time it connects to the network. This means that a new device can be added to a network without having to manually assign a unique IP address.

Hexadecimal. A numbering system that is used as a representation of binary numbers using a base of 16 digits.

Infrastructure network. A network in which your wireless devices communicate through a central wireless access point or base station. An infrastructure network can contain multiple wireless access points.

IP address. A number that identifies each device connected to the network. For example, 192.168.0.1.

MAC address. A 12-character identifier that is unique for each network hardware device. For example, 0002001008e8.

Network authentication type. The data encryption mode that is used on your network to prevent unauthorized users or devices from connecting to or accessing your wireless network. You can use one of the following protocols for network authentication:

- None
- WEP
- WPA (Infrastructure mode networks only)

network-capable printer. A printing device that does not need to be locally attached to a computer.

printer port. Windows terminology for a physical or logical connection to a printer. For example:

- LPT1 indicates the printer is attached to a physical parallel port with a parallel cable.
- USB001 indicates the printer is attached to a physical USB port with a USB cable.
- Print_Server_E320_0020000035D0 indicates a logical connection to the printer across your network.

PSK. Pre-Shared Key, a permanent security key or password that a user enters to establish security keys in a WPA environment.

Safari. The default Web browser provided by Apple for Mac OS X operating systems. Safari is available for download on the Apple Web site at the following URL: <http://www.apple.com/safari>.

Security key. A security key is like a password used with either WPA or WEP security protocols and must meet the following criteria:

- For WPA keys, if using Hexadecimal characters, valid keys are at least 24 characters long; if using ASCII, valid keys are between 8 and 63 characters long. WPA authentication is not supported for Ad-Hoc configurations.
- For WEP keys, if using Hex characters, valid keys are either 10 or 26 characters long; if using ASCII, valid keys are either 5 or 13 characters long.

subnet. A portion of a network that shares a common address component. On TCP/IP networks, subnets are defined as all devices whose IP addresses have the same prefix. For example, all devices with IP addresses that start with 192.168.0. would typically be part of the same subnet.

SSID. Service Set ID, also known as Network name, is a unique identifier used to distinguish one wireless network from another. Wireless devices must use the same SSID to communicate. SSIDs are up to 32 characters long, and are case-sensitive.

TCP/IP. The Transmission Control Protocol (TCP) and the Internet Protocol (IP) are protocols that let different types of computers communicate with each other. The Internet is based on this suite of protocols.

TKIP. Temporal Key Integrity Protocol, a protocol used with the WPA data encryption mode that scrambles security keys using a hashing algorithm and adds an integrity-checking feature that ensures the keys haven't been tampered with.

WEP. Wired Equivalency Protocol, a security protocol defined in the original 802.11b specification that is used to provide data encryption and user authentication.

WPA. Wi-Fi Protected Access, a security protocol for wireless networks defined by the Wi-Fi Alliance that was designed to improve upon the WEP security protocol through improved data encryption and user authentication.