HP LaserJet
1160, 1320, 1320n,
1320tn, 1320nw
hp LaserJet 1160 and hp LaserJet 1320 series printer

User Guide
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This chapter provides information on the following topics:

- Quick access to more information
- Printer configurations
- Walk around
- Printer control panel
- Media paths
- Print cartridge access
- Printer software
- Software for Windows
- Software for Macintosh computers
- Printer media specifications
Quick access to more information

The following sections provide resources for additional information about the hp LaserJet 1160 and hp LaserJet 1320 series printers.

WWW links for drivers, software, and support

If you need to contact HP for service or support, use one of the following links.

hp LaserJet 1160 printer

- In the United States, see http://www.hp.com/support/lj1160/
- In other countries/regions, see http://www.hp.com/

hp LaserJet 1320 series printer

- In the United States, see http://www.hp.com/support/lj1320/
- In other countries/regions, see http://www.hp.com/

User guide links

- Walk around (location of printer components)
- Changing the print cartridge
- Problemsolving
- Ordering supplies and accessories

Where to look for more information

- CD user guide: Detailed information on using and troubleshooting the printer. Available on the CD-ROM that came with the printer.
- Online Help: Information on printer options that are available from within printer drivers. To view a Help file, access the online Help through the printer driver.
- HTML (online) user guide: Detailed information on using and troubleshooting the printer. Available at http://www.hp.com/support/lj1160/ or http://www.hp.com/support/lj1320/. Once connected, select Manuals.
Printer configurations

Below are the standard configurations for the HP LaserJet 1160 and HP LaserJet 1320 series printers.

**hp LaserJet 1160 printer**

- 20 ppm (Letter), 19 ppm (A4)
- First page out as low as 8.5 seconds
- 1200 dpi effective output quality (600 x 600 dpi with Resolution Enhancement technology (REt) with FastRes 1200)
- 250-sheet enclosed input tray (Tray 2)
- Single-sheet priority input slot (Tray 1)
- EconoMode (saves toner)
- Print watermarks, booklets, multiple pages per sheet (N-up), and first page on different media than rest of the document
- 16 MB RAM
- 2,500-page print cartridge
- Host-based and PCL 5e (printer automatically determines and switches to the appropriate language)
- Compatible with USB 2.0 specifications
- IEEE-1284B parallel port
- Windows® 98, Me, NT® (print driver only), 2000, Server 2003 (printer driver only), XP 32-bit, XP 64-bit (printer driver only)
- Mac OS 9.1 and later (printer driver only)
- Power switch
- HP toolbox (provides printer status information, troubleshooting information, and printer configuration information)
- 26 PCL fonts

**hp LaserJet 1320 printer**

- 22 ppm (Letter), 21 ppm (A4)
- First page out as low as 8.5 seconds
- ProRes 1200 (provides fine-line detail at 1200 x 1200 dpi)
- 600 dpi (provides 600 x 600 dpi output with Resolution Enhancement Technology (REt) for improved text)
- 250-sheet enclosed input tray (Tray 2)
- Single-sheet priority input slot (Tray 1)
- Optional additional 250-sheet input tray (Tray 3)
- Automatic two-sided (duplex) printing
- EconoMode (saves toner)
- Print watermarks, booklets, multiple pages per sheet (N-up), and first page on different media than rest of the document
- 16 MB RAM
- Memory is upgradeable to 144 MB
- 2,500- or 6,000-page print cartridge
- PCL 6, PCL 5e, and PostScript® Level 2 emulation (printer automatically determines and switches to the appropriate language)
- Compatible with USB 2.0 specifications
- IEEE-1284B parallel port
- Windows 98, Me, NT (printer driver only), 2000, Server 2003 (printer driver only), XP 32-bit, XP 64-bit (printer driver only)
- Mac OS 9.1 and later (printer driver only)
- Mac OS X v10.1 (printer driver only), v10.2 and later
- Power switch
- HP toolbox (provides printer status information, troubleshooting information, and printer configuration information)
- 46 HP fonts
- 35 PS fonts

**hp LaserJet 1320n printer**

The HP LaserJet 1320n printer includes an Internal HP Jetdirect network port instead of the IEEE-1284B parallel port.

**hp LaserJet 1320tn printer**

The HP LaserJet 1320tn printer includes all of the features of the HP LaserJet 1320n printer with the addition of a second 250-sheet input tray (Tray 3).

**hp LaserJet 1320nw printer**

The HP LaserJet 1320nw printer includes all of the features of the HP LaserJet 1320n printer with the addition of integrated 802.11b/g wireless connectivity.

**Note**

For more information about this product, see the HP LaserJet 1320nw wireless user guide.
Walk around

The following illustrations identify the components of the HP LaserJet 1160 and HP LaserJet 1320 series printers.

1. Wireless light (HP LaserJet 1320nw printer only)
2. Toner light
3. Attention light
4. Ready light
5. GO button and light
6. CANCEL button
7. Output bin
8. Media support
9. Print cartridge door
10. Single-sheet priority input slot (Tray 1)
11. Main input tray (Tray 2)
12. On/off switch

1. Straight-through output door
2. Power receptacle
3. Automatic two-sided printing media-size selector
4. USB port
5. Parallel port (HP LaserJet 1160 and HP LaserJet 1320 printers)
6. Internal HP Jetdirect network port (HP LaserJet 1320n, HP LaserJet 1320tn, and HP LaserJet 1320nw printers only)
7. Rear automatic two-sided path door
8. Jam clearing levers
Printer control panel

The printer control panel is comprised of four lights and two buttons. The hp LaserJet 1320nw printer has an additional light at the top of the control panel. These lights produce patterns that identify your printer's status.

1. **Wireless light**: (HP LaserJet 1320nw printer only) When the Wireless light is on solid, a wireless connection has been established. When the Wireless light is off, wireless operation is disabled. When the Wireless light is flashing, the printer is trying to establish a wireless connection.

2. **Toner light**: When the toner is low, the Toner light is on solid. When the print cartridge is out of the printer, the Toner light is flashing.

3. **Attention light**: Indicates printer media input tray is empty, print cartridge door is open, print cartridge is missing, or other errors. See *Printer information pages* for more information.

4. **Ready light**: Indicates that the printer is ready to print.

5. **Go button and light**: To print a demo page or to continue printing while in manual feed mode, press and release the Go button. To print a configuration page, press and hold the Go button for 5 seconds.

6. **Cancel button**: To cancel the print job that is currently printing, press the Cancel button.

**Note**

See *Status light patterns* for a description of the light patterns.
The following sections describe the input trays, output bins, and media paths.

**Single-sheet priority input slot (Tray 1)**

You should use the single-sheet priority input slot when feeding one sheet of paper, envelope, postcard, label, or transparency. You can also use the single-sheet priority input slot to print the first page on different media than the rest of the document.

Media guides ensure that the media is correctly fed into the printer and that the print is not skewed (crooked on the media). When loading media, adjust the media guides to match the width of the media that you are using.

![Single-sheet priority input slot](image)

**Note**

The printer automatically prints from the single-sheet priority input slot before printing from the main input tray.

See [Choosing paper and other media](#) for more information about media types.

**Main input tray (Tray 2)**

The enclosed main input tray, accessed from the front of the printer, holds up to 250 sheets of 20 lb paper or other media.

The main input tray supports paper with the following specifications:

- **Weight**: Up to 60 to 105 g/m² (16 to 28 lb.).
- **Size**: From 147 x 211 mm (5.8 x 8.27 inches) to 216 x 356 mm (8.5 x 14 inches).
Media guides ensure that the media is correctly fed into the printer and that the print is not skewed (crooked on the media). The main input tray has both side and rear media guides. When loading media, adjust the media guides to match the length and width of the media that you are using.

**Straight-through output path**

The straight-through output path is useful when you are printing envelopes, transparencies, heavy media, or any media that tends to curl when printed. Printed media exits in reverse order when the straight-through output door is open.

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**Note**

Printed media does not stack when you use the straight-through output path. The media drops to the surface below unless you remove each sheet as it exits the printer.
Output bin

The output bin is located on the top of the printer. Printed media is collected here in the correct sequence when the straight-through output door is closed. The media support provides improved stacking for large print jobs. Use the output bin when printing normal and large, collated documents.
Print cartridge access

The print cartridge door is located on the front of the printer. You must open the print cartridge door to access the print cartridge, clear jams, and clean the printer. To open the print cartridge door, grasp the center and pull the print cartridge door toward you.
The following sections describe the software that is provided with the HP LaserJet 1160 and HP LaserJet 1320 series printers.

Supported operating systems
For easy printer setup and access to the full range of printer features, HP strongly recommends that you install the software provided. Not all software is available in all languages. Install the software before setting up the printer. See the Readme for the latest software information.

The most recent drivers, additional drivers, and other software are available from the Internet and other sources.

The printer comes with software for the following operating systems:
- Windows 98
- Windows Me
- Windows NT (printer driver only)
- Windows 2000
- Windows Server 2003 (printer driver only)
  - For more information about upgrading from Windows 2000 Server to Windows Server 2003, go to http://www.microsoft.com/
  - For more information about Windows Server 2003 Point and Print, go to http://www.microsoft.com/
  - For more information about Windows Server 2003 Terminal Services and Printing, go to http://www.microsoft.com/
- Windows XP (32-bit)
- Windows XP (64-bit) (printer driver only)
- Mac OS 9.x (printer driver only)
- Mac OS X v10.1 (printer driver only), v10.2 and later

Note
Apple encourages OS X v10.0 users to upgrade to v10.1 or later.

Installing printer software
The following sections provide instructions for installing the printer software on various operating systems.

To install a printer driver for Windows NT 4.0
To install the printer software for Windows NT 4.0, you must use the Add Printer Wizard.
1. Click Start, and then point to Settings.
2. Click Printers.
3. Double-click Add Printer.
4. Select the port that the printer is connected to, and click **Next**.

5. Click **Have Disk**. Click **Browse**.

6. On the CD-ROM, browse to the driver you want to install as follows:
   a. Select your language from the directory list, and double-click.
   b. Select **drivers** from the directory list, and double-click.
   c. Select your operating system from the directory list, and double-click.
   d. Select the driver from the directory list, and double-click.
   e. Click **OK** to select the INF file.
   f. Click **HP LaserJet 1160** or **HP LaserJet 1320 series printer**, and click **OK** to begin the installation.

7. Follow the on-screen instructions to complete the software installation.

**To install printer software for Windows XP (64-bit) and Windows Server 2003**

See the operating system documentation for instructions on installing a printer driver.

**To install printer software for all other operating systems**

Insert the software CD that came with the printer into the computer CD-ROM drive. **Follow the on-screen installation instructions**.

If the Welcome screen does not open, click **Start** on the Windows task bar, click **Run**, type `Z:\setup` (where `Z` is your CD drive letter), and click **OK**.

**Printer Properties (driver)**

Printer Properties control the printer. You can change the default settings, such as media size and type, printing multiple pages on a single sheet of media (N-up printing), resolution, and watermarks. You can access the printer Properties in the following ways:

- Through the software application that you are using to print. This only changes the settings for the current software application.
- Through the Windows operating system. This changes the default settings for all future print jobs.

**Note**

Because many software applications use a different method of accessing the printer Properties, the following section describes the most common methods used in Windows 98, 2000, Me, and Windows XP.

**To only change the settings for the current software application**

Although the steps can vary between software applications, this is the most common method.

1. From the **File** menu in the software application, click **Print**.
2. On the **Print** dialog, click **Properties**.
3. Change the settings, and click **OK**.
To change the default settings for all future print jobs in Windows 98, 2000, and Me

1. In the Windows task bar, click **Start**, select **Settings**, and click **Printers**.
2. Right-click the **HP LaserJet 1160** or **HP LaserJet 1320 series printer** icon.
3. Click **Properties** (in Windows 2000, you can also click **Printing Preferences**).
4. Change the settings, and click **OK**.

**Note**
In Windows 2000, many of these features are available from the **Printing Preferences** menu.

To change the default settings for all future print jobs in Windows XP

1. In the Windows task bar, click **Start**, and click **Printers and Faxes**.
2. Right-click the **HP LaserJet 1160** or **HP LaserJet 1320 series printer** icon.
3. Click **Properties**, or click **Printing Preferences**.
4. Change the settings, and click **OK**.

**Print setting priorities**
There are three ways to change print settings for this printer: in the software application, in the printer driver, and in the HP toolbox. For the HP LaserJet 1320 series printer, you can also change print settings through the embedded Web server. Changes made to print settings are prioritized according to where the changes are made, as follows:

- Changes made in the software application override settings changed anywhere else. Within a software application, changes made in the Page Setup dialog box override changes made in the Print dialog box.
- Changes made in the printer driver (printer Properties dialog box) override settings in the HP toolbox. Changes made in the printer driver do not override settings in the software application.
- Changes made in the HP toolbox and the embedded Web server have the lowest priority.

If a particular print setting can be changed in more than one of the ways listed above, use the method that has the highest priority.

**Printer Properties online help**
The printer Properties (driver) online help includes specific information about the functions in the printer Properties. This online help guides you through the process of changing your printer's default settings. For some drivers, online Help gives instructions on using context-sensitive Help. Context-sensitive Help describes the options for the driver feature you are currently accessing.

To access the printer Properties online help
1. From the software application, click **File**, and then click **Print**.
2. Click **Properties**, and then click **Help**.
Software for Windows

The following software is available to all users of the printer.

Printer drivers

A printer driver is the software component that provides access to printer features and provides the means for the computer to communicate with the printer. Choose a printer driver based on the way you use the printer.

- Use the PCL 5e printer driver if you need print results to look consistent with those from older HP LaserJet printers. Certain features are not available in this printer driver. (Do not use the PCL 5e driver for this printer with older printers.)
- Use the PCL 6 printer driver to take full advantage of the printer features (HP LaserJet 1320 series printer only). Unless complete backward compatibility with previous PCL drivers or older printers is necessary, the PCL 6 driver is recommended.
- Use the PS printer driver for compatibility with PostScript (HP LaserJet 1320 series printer only). Certain printer features are not available in this printer driver.

The printer automatically switches between PS and PCL printer languages depending on the driver you have selected.

Available printer drivers

The following printer drivers are included with the printer.

Available printer drivers

<table>
<thead>
<tr>
<th>HP LaserJet 1160 printer</th>
<th>HP LaserJet 1320 series printer</th>
</tr>
</thead>
<tbody>
<tr>
<td>● host-based</td>
<td>● PCL 5e</td>
</tr>
<tr>
<td>● PCL 5e</td>
<td>● PCL 6</td>
</tr>
<tr>
<td></td>
<td>● PS</td>
</tr>
</tbody>
</table>

hp toolbox

You can view the HP toolbox when the printer is directly connected to your computer or when it is connected to a network. You must have performed a complete software installation to use the HP toolbox.

The HP toolbox is a Web application that you can use for the following tasks:

- Check the printer status.
- Configure the printer settings.
- View troubleshooting information.
- View online documentation.

See Using the hp toolbox for more information.
Embedded Web server

Note
This feature is only available on the HP LaserJet 1320n, HP LaserJet 1320tn, and HP LaserJet 1320nw printers.

The embedded Web server is available for the HP LaserJet 1320 series printer over the Internal HP Jetdirect network connection.

With the embedded Web server, you can gain access to the printer settings and information by typing an IP address or hostname of the printer in a Web browser (such as Netscape Navigator or Microsoft® Internet Explorer) on any computer. You can use the embedded Web server to configure the printer, view status information, and obtain troubleshooting information.

Note
These settings can also be changed using HP Toolbox.

The embedded Web server works with the following supported web browsers:

- Internet Explorer 5.5 (and later)
- Netscape Navigator 4.75 (and later)

See Using the embedded Web server for more information.
Software for Macintosh computers

The following sections describe the software for Macintosh computers that is available for the HP LaserJet 1160 and HP LaserJet 1320 series printers.

hp LaserJet 1160 printer

The following sections describe how to access the Macintosh software for the HP LaserJet 1160 printer.

Accessing the printer driver (Mac OS 9.1 and later)

1. From the Apple menu, select the Chooser.
2. On the top, left side of the Chooser dialog box, click HP LaserJet.
3. Select one of the following options, depending on how the computer and the printer are connected:
   - TCP/IP: In the pop-up dialog, select yes to scan for TCP/IP network printers.
   - USB: Go to step 4.
4. On the right side of the Chooser dialog box, click HP LaserJet 1160 printer.
5. Close the Chooser.

Accessing the printer driver (Mac OS X v10.1 and later)

1. Print Center should automatically launch. If it does not launch, perform the following steps:
   a. Double-click the hard drive icon on the desktop.
   b. Open the Applications folder, and then open the Utilities folder.
   c. Double-click Print Center or Printer Setup Utility, depending on the operating system.
2. Click Add. The Add Printer List dialog box appears.
3. Select one of the following options from the top menu, depending on how the computer and the printer are connected:
   - USB
   - TCP/IP: For connecting to your TCP/IP printer in OS X v10.1, select hp ip printing. For OS X v10.2 and later, select Rendezvous.
4. Select the printer name from the printer list.
5. Click Add.

hp LaserJet 1320 series printer

The following sections describe how to access the Macintosh software for the hp LaserJet 1320 series printer.
Accessing the printer driver (Mac OS 9.x)
1. Double-click the hard drive icon on the desktop.
2. Open the Applications folder, and then open the Utilities folder.
3. Launch the Desktop Printer Utility.
4. Double-click Printer (USB).
5. In the USB Printer Selection section of the dialog box, click Change.
7. Click Auto Setup.
8. Click Create at the bottom of the Window.
9. Click Save.

Accessing the printer driver (Mac OS X v10.1 and later)
1. Print Center should automatically launch. If it does not launch, perform the following steps:
   a. Double-click the hard drive icon on the desktop.
   b. Open the Applications folder, and then open the Utilities folder.
   c. Double-click Print Center or Printer Setup Utility, depending on the operating system.
2. Click Add. The Add Printer List dialog box appears.
3. Select one of the following options from the top menu, depending on how the computer and the printer are connected:
   - USB
   - TCP/IP: For connecting to your TCP/IP printer in OS X v10.1, select hp ip printing.
     For OS X v10.2 and later, select Rendezvous.
4. Select the printer name from the printer list.
5. Click Add.

PostScript Printer Description files (PPDs)
PPDs, in combination with the Apple printer driver, access the printer features and allow the computer to communicate with the printer. An installation program for the PPDs is provided on the HP LaserJet 1320 series printer CD.
Printer media specifications

HP LaserJet printers produce excellent print quality. The printer accepts a variety of media, such as cut-sheet paper (including recycled paper), envelopes, labels, transparencies, vellum, and custom-size paper. Properties such as weight, grain, and moisture content are important factors affecting printer performance and output quality.

The printer can use a variety of paper and other print media in accordance with the guidelines in this user guide. Media that does not meet these guidelines might cause the following problems:

- Poor print quality
- Increased media jams
- Premature wear on the printer, requiring repair

For best results, use only HP brand paper and print media. Hewlett-Packard Company cannot recommend the use of other brands. Because they are not HP products, HP cannot influence or control their quality.

It is possible for media to meet all of the guidelines in this user guide and still not produce satisfactory results. This might be the result of improper handling, unacceptable temperature and humidity levels, or other variables over which Hewlett-Packard has no control.

Before you purchase a large quantity of media, make sure that it meets the requirements specified in this user guide and in *HP LaserJet printer family media guide*. The guidelines can be downloaded from [http://www.hp.com/support/ljpaperguide/](http://www.hp.com/support/ljpaperguide/) or see [Ordering supplies and accessories](#) for more information about ordering the guidelines. Always test media before you purchase a large quantity.

**CAUTION**

Using media that does not meet Hewlett-Packard’s specifications might cause problems for the printer, requiring repair. This repair is not covered by the Hewlett-Packard warranty or service agreements.

**Supported media sizes**

The following are the supported media sizes:

- **Minimum**: 76 x 127 mm (3 x 5 in.)
- **Maximum**: 216 x 356 mm (8.5 x 14 in.)
This chapter provides information on the following topics:

- **USB connections**
- **Parallel connections**
- **Network connections**
- **Wireless connections**
USB connections

All HP LaserJet 1160 and HP LaserJet 1320 series printer models support USB connections.

Connecting the USB cable

1. Plug the USB cable into the printer.
2. Plug the other end of the USB cable into the computer when prompted to do so during the software installation.
Parallel connections

The HP LaserJet 1160 and HP LaserJet 1320 printer models support parallel connections.

Connecting the parallel cable

1. Connect the parallel cable to the printer.
2. Connect the other end of the parallel cable to the computer.
Network connections

The HP LaserJet 1320n, HP LaserJet 1320tn, and HP LaserJet 1320nw printers can connect to networks through the Internal HP Jetdirect network port. The HP LaserJet 1320nw printer can also connect to 802.11b/g wireless networks. External network print servers are available for the HP LaserJet 1160 and HP LaserJet 1320 series printers. The following table identifies what is required to add networking to any HP LaserJet 1160 or HP LaserJet 1320 series printer.

<table>
<thead>
<tr>
<th>HP LaserJet model</th>
<th>10Base-T</th>
<th>10/100Base-TX</th>
<th>802.11b/g</th>
<th>Bluetooth®</th>
</tr>
</thead>
<tbody>
<tr>
<td>1160</td>
<td>HP Jetdirect 170x</td>
<td>HP Jetdirect 175x (HP Jetdirect 300x, HP Jetdirect 500x) HP Jetdirect en3700</td>
<td>HP Jetdirect ew2400</td>
<td>HP bt1300</td>
</tr>
<tr>
<td>1320</td>
<td>HP Jetdirect 170x</td>
<td>HP Jetdirect 175x (HP Jetdirect 300x, HP Jetdirect 500x) HP Jetdirect en3700</td>
<td>HP Jetdirect ew2400</td>
<td>HP bt1300</td>
</tr>
<tr>
<td>1320n</td>
<td>Included</td>
<td>Included</td>
<td>HP Jetdirect ew2400 HP Jetdirect 380x (802.11b only)</td>
<td>HP bt1300</td>
</tr>
<tr>
<td>1320tn</td>
<td>Included</td>
<td>Included</td>
<td>HP Jetdirect ew2400 HP Jetdirect 380x (802.11b only)</td>
<td>HP bt1300</td>
</tr>
<tr>
<td>1320nw</td>
<td>Included</td>
<td>Included</td>
<td>Included</td>
<td>HP bt1300</td>
</tr>
</tbody>
</table>

To order the print server, see 10/100 networking and wireless print servers.
Connecting to the network

Connect one end of a network cable to the network connector on the back of the device, and connect the other end to the network. Be sure to install the printer driver on all computers that connect to the network.

![Network Diagram]

Note

The following procedures are for the HP LaserJet 1320n, HP LaserJet 1320tn, and HP LaserJet 1320nw printers only.

The Ethernet network must be functional before proceeding with the following instructions.

Connect the printer to the network

To connect the HP LaserJet 1320n, HP LaserJet 1320tn, or HP LaserJet 1320nw printer to a wired network, you need the following:

- Functional wired network
- CAT-5 Ethernet cable

To connect the printer to the network, perform the following steps:

1. Connect the CAT-5 Ethernet cable to an available port on the Ethernet hub or router.
2. Connect the Ethernet cable to the Ethernet port on the back of the printer.
3. Check that one of the network lights (10 or 100) on the network port located on the back of the printer comes on.

Note

It might take a few moments for the printer network settings to become active and available for use. If one of the network lights does not come on, see Wired network setup problemsolving

4. Print a network configuration page. For more information, see Network Configuration page.

Install the printer software

1. Close all applications.
2. Insert the software installation CD into the computer's CD-ROM drive. The Welcome screen displays.
3. Click **Next**, and follow the instructions that the Installer provides to check and prepare the system, and install drivers, plug-ins, and software.

   This might take several minutes.

**Print a Network Configuration page**

When the printer is in the Ready state, press and hold the **Go** button for 5 seconds. The Network Configuration page automatically prints with the printer Configuration page.

---

**Note**

To reset the networking card, when the printer is turned off, press and hold the **Reset** button located on the back of the printer. While holding down the Reset button, turn on the printer, and continue to hold the Reset button until the printer is in the Ready state.
Wireless connections

The HP LaserJet 1320nw printer includes the IEEE 802.11b/g standard for wireless networking.

The HP LaserJet 1160 and HP LaserJet 1320 series printer models also support the IEEE 802.11b/g standard for wireless networking and Bluetooth wireless connectivity options through optional external accessories.

For a complete list of available Internal HP Jetdirect wireless print servers and HP bt1300 Wireless Printer Adapters (Bluetooth), see 10/100 networking and wireless print servers.

For more information about wireless printing, see Wireless printing.
Managing the printer

This chapter provides information on the following topics:

- Printer information pages
- Using the hp toolbox
- Using the embedded Web server
- Wireless printing
Printer information pages

Special pages reside within the memory of the printer. These pages help you to diagnose and solve problems with the printer.

Demo page

The Demo page contains examples of text and graphics. To print the Demo page, press Go when the printer is ready (Ready light on) and not printing.

Configuration page

The Configuration page lists current settings and properties of the printer. It also contains a status log report. You can print a Configuration page from the printer, the embedded web server, or the HP Toolbox.

To print the Configuration page from the printer, press Go for 5 seconds when the printer is in the ready state.

Note

You can also get the information contained in the Event log and the Configuration page through the HP Toolbox without printing the pages. See Using the hp toolbox for more information.

Supplies Status page

The Supplies Status page provides information about the print cartridge that is installed in the printer, the amount of toner left in the print cartridge, and the number of pages and print jobs that have been processed. The Supplies Status page also provides ordering and recycling information. The Supplies Status page automatically prints when a Configuration page is printed from the control panel.

Network Configuration page

Note

The Network Configuration page is only available on the HP LaserJet 1320n, HP LaserJet 1320tn, and HP LaserJet 1320nw printers.

The Network Configuration page provides information about the printer's network configuration, including the IP address, firmware revision, network statistics, protocol information, and so on. The Network Configuration page automatically prints when a Configuration page is printed from the control panel.
Using the hp toolbox

The HP toolbox is a Web application that you can use for the following tasks:

- Check the printer status.
- Configure the printer settings.
- View troubleshooting information.
- View online documentation.

You can view the HP toolbox when the printer is directly connected to your computer or when using a supported network connection. You must have performed a complete software installation to use the HP toolbox.

**Note**

You do not have to have Internet access to open and use the HP toolbox. However, if you click a link in the Other Links area, you must have Internet access in order to go to the site associated with the link. See Other links for more information.

To install the HP Toolbox, you must install the TCP/IP protocol and the most recent version of the Java™ Virtual Machine on the computer. You must also install the DOT4 protocol for all USB connections, LPT connections for Windows 2000 and XP, and LPT1 connections for Windows 98, Me, and NT 4.0. See the system administrator or computer manufacturer's documentation for more information about installing the TCP/IP protocol and the DOT4 protocol. To download the most recent version of the Java Virtual Machine from Sun Microsystems, go to [http://www.sun.com/](http://www.sun.com/).

**Supported operating systems**

HP toolbox is supported for the following operating systems:

- Windows 98, 2000, Me, and XP
- Mac OS X v10.2 and later

**Supported browsers**

To use the HP toolbox, you must have one of the following browsers:

- Microsoft Internet Explorer 5.5 or later
- Netscape Navigator 6 or later

**To view hp toolbox on Windows**

1. On the Start menu, point to Programs, point to HP LaserJet 1160 or HP LaserJet 1320, and choose the HP toolbox.
2. The HP toolbox opens in a Web browser.

**Note**

Once you open the URL, you can bookmark it so that you can return to it quickly in the future.

**To view hp toolbox on Mac**

1. Double-click the hard drive icon on the desktop.
2. Click **Applications**, and then click **Utilities**.
3. Double-click **hp toolbox**.

**hp toolbox sections**

The HP toolbox software contains these sections:

- **Status tab**
- **Troubleshooting tab**
- **Alerts tab**
- **Documentation tab**
- **Advanced Printer Settings window**
- **Network window** (available only for the HP LaserJet 1320n, HP LaserJet 1320tn, and HP LaserJet 1320nw printers)

**Other links**

Each page in the HP toolbox contains links to the HP website for product registration, product support, and for ordering supplies. You must have Internet access in order to use any of these links. If you use a dial-up connection and did not connect when you first opened the HP toolbox, you must connect before you can visit these websites.

**Status tab**

The Status tab has links to these main pages:

- **Device Status**. View printer status information. This page will indicate printer conditions such as a paper jam or an empty tray. After you correct a problem with the printer, click the **Refresh** button to update the device status.

- **Supplies Status**. View detailed supplies status such as the percent of toner remaining in the print cartridge and the number of pages printed with the current print cartridge. This page also has links to order supplies and to find recycling information.

- **Print Info pages**. Print the configuration page and various other information pages that are available for the printer.

**Troubleshooting tab**

The Troubleshooting tab provides links to various printer troubleshooting information. For example, these pages provide information on how to clear a jam, how to resolve print quality problems, how to interpret the control panel lights, and how to resolve other problems with the printer.
Alerts tab
The Alerts tab allows you to configure the printer to automatically notify you of printer alerts. The Alerts tab has links to these main pages:

- Set up status alerts
- Set up e-mail alerts
- Administrative settings

Set up status alerts
On the Set up status alerts page you can choose to turn alerts on or off, specify when the printer should send an alert, and choose from two different types of alerts:

- a pop-up message
- a task bar icon

Click Apply to activate the settings.

Set up e-mail alerts
This page allows you to designate up to two e-mail addresses to notify of printer status alerts. Follow the instructions on the screen to set up e-mail alerts.

Administrative settings
This page allows you to set the frequency of how often the HP toolbox checks for printer alerts. Three settings are available:

- Less often
- Normal
- More often

If you want to reduce network I/O traffic, reduce the frequency that the printer checks for alerts.

Documentation tab
The Documentation tab contains links to these information sources:

- User Guide. Contains the information about the printer usage, warranty, specifications, and support that you are currently reading. The user guide is available in both .html and .pdf format.
- Read Me. Contains additional information that is not included in this user guide.

Advanced Printer Settings window
When you click the Advanced Printer Settings link, a new window opens. The Advanced Printer Settings window has two tabs:

- Information tab
- Settings tab
**Information tab**

The Information tab provides quick links to the following information:

- Device status
- Device configuration
- Supplies status
- Event log
- Print Info pages

**Settings tab**

The Settings tab has links to several pages that allow you to view and change the printer's configuration.

*Note* Driver settings can override settings made in the HP Toolbox.

- **Device Information.** View basic information about the printer.
- **Paper Handling.** View and change the settings for the printer's input tray.
- **Printing.** View and change the default printer job settings.
- **PCL.** View and change the PCL font information.
- **PostScript.** This page is available for the HP LaserJet 1320 series printer only. View and change the settings for PS errors and timeout.
- **Print Quality.** View and change the print quality settings.
- **Print Modes.** View and change the print modes for various media types.
- **System Setup.** View and change system information.
- **I/O.** View and change the I/O timeout setting.
- **Resets.** Change all the printer settings back to the factory default settings.

**Network window**

*Note* This option is only available for the HP LaserJet 1320n, HP LaserJet 1320tn, and HP LaserJet 1320nw printers.

When you click the **Network** link on the Advanced Printer Settings page, a new window opens. Use this section to configure network settings.
Using the embedded Web server

The embedded Web server can be directly accessed on the HP LaserJet 1320n, HP LaserJet 1320tn, and HP LaserJet 1320nw printers. The embedded Web server provides the same functions as the Advanced Printer Settings section of the HP toolbox. The main differences between using the embedded Web server and using the HP toolbox are the following:

- You do not need to install any software on the computer. You only need to have a supported Web browser. To use the embedded Web server, you must have Microsoft Internet Explorer 5.5 or later or Netscape Navigator 4.75 or later.
- The embedded Web server is available in English only.
- The embedded Web server does not provide e-mail or status alerts.

The embedded Web server allows you to view printer and network status and to manage printing functions from your computer instead of from the printer control panel. Below are examples of what you can do using the embedded Web server:

- view printer status information
- view and print internal pages
- determine the remaining life on all supplies and order new ones
- set the size and type of paper loaded in each tray
- view and change tray configurations
- view and change the printer default configuration settings
- view and change network configuration

The embedded Web server works when the printer is connected to an IP-based network. The embedded Web server does not support IPX-based printer connections.

---

**Note**

You do not have to have Internet access to open and use the embedded Web server. However, if you click a link in the Other Links area, you must have Internet access in order to go to the site associated with the link.

---

**To open the embedded Web server**

1. In a supported Web browser, type the IP address or hostname for the printer. To find the IP address, print a Configuration page at the printer by pressing and holding Go for 5 seconds.

---

**Note**

Once you open the URL, you can bookmark it so that you can return to it quickly in the future.

2. The embedded Web server has three tabs that contain settings and information about the printer: the Information tab, the Settings tab, and the Networking tab. Click the tab that you want to view.
Information tab

The Information pages group consists of the following pages.

- **Device Status.** This page displays the printer status and shows the life remaining of HP supplies. This page also displays product information such as the network name, network address, and model information.

- **Configuration.** This page shows the information found on the printer Configuration page.

- **Supplies Status.** This page shows the life remaining of HP supplies and provides supplies part numbers.
  - To order new supplies, click **Order Supplies** in the **Other Links** area on the left side of the window.
  - To visit any web site, you must have Internet access.

- **Event log.** This page shows a list of all printer events and errors.

- **Print Info Pages.** This page has links that allow you to print the various information pages that reside within the memory of the printer.

Settings tab

This tab allows you to configure the printer from your computer. If this printer is networked, always consult with the printer administrator before changing settings on this tab.

The **Settings** tab contains the following pages:

- **Device Information.** View and change basic information about the printer.

- **Paper Handling.** View and change the settings for the printer's input tray.

- **Printing.** View and change the default printer job settings.

- **PCL.** View and change the PCL font information.

- **PostScript.** View and change the settings for PS errors and timeout.

- **Print Quality.** View and change the print quality settings.

- **Print Modes.** View and change the print modes for various media types.

- **System Setup.** View and change system information.

- **I/O.** View and change the I/O timeout setting.

- **Service.** Complete service tasks in the printer, such as changing all the printer settings back to the factory default settings.

Networking tab

This tab allows the network administrator to control network-related settings for the printer when it is connected to an IP-based network.
**Other links**

This section contains links that connect you to the Internet. You must have Internet access in order to use any of these links. If you use a dial-up connection and did not connect when you first opened the embedded Web server, you must connect before you can visit these web sites. Connecting might require that you close the embedded Web server and reopen it.

- **Product Registration.** Connects you to the product registration page on the HP web site.
- **Order Supplies.** Click this link to connect to the Sure Supply web site and order genuine HP supplies from HP or a reseller of your choice.
- **Product Support.** Connects to the support site for the HP LaserJet 1320 series printer. You can search for help regarding general topics.
Wireless networks offer a safe, secure, and cost-effective alternative to traditional wired network connections. The HP LaserJet 1320nw printer has built-in wireless connectivity. For the other printer models, see 10/100 networking and wireless print servers for a list of available wireless print servers.

IEEE 802.11b/g standard

With wireless IEEE 802.11b/g compliant connectivity, the printers can be placed in the office or home and connected to a wireless network running Microsoft, Apple, NetWare, UNIX®, or Linux® network operating systems. This wireless technology provides a high-quality printing solution without the physical constraints of wiring. Peripherals can be conveniently placed in an office or home and can be easily moved without changing network cables.

Optional external HP Jetdirect 802.11b/g print servers are available for USB connections.

See the documentation that came with the HP LaserJet 1320nw printer for more information.

Bluetooth

Bluetooth wireless technology is a low-power, short-range radio technology that can be used to wirelessly connect computers, printers, personal digital assistants, cell phones, and other devices.

Unlike infra-red technology, Bluetooth's reliance on radio signals means that devices do not have to be in the same room, office, or cubicle with an unobstructed line of sight in order to communicate. This wireless technology increases portability and efficiency within business network applications.

Bluetooth adapters are available for USB and parallel connections.
This chapter provides information on the following topics:

- Manual feed
- Canceling a print job
- Understanding print quality settings
- Using EconoMode (saves toner)
- Optimizing print quality for media types
- Guidelines for using media
- Choosing paper and other media
- Loading media into the input trays
- Printing an envelope
- Printing on transparencies or labels
- Printing on letterhead and preprinted forms
- Printing on custom-size media and card stock
- Automatic two-sided printing (duplex)
- Printing on both sides of the paper (manual two-sided printing)
- Printing multiple pages on a single sheet of paper (N-up printing)
- Printing booklets
- Printing watermarks
Manual feed

You can use manual feed when printing mixed media, for example, an envelope, then a letter, then an envelope, and so on. Feed an envelope into the single-sheet priority input slot (Tray 1) and load letterhead into the main input tray (Tray 2).

To print using manual feed, access the printer Properties or Printer Setup in your software application, and select Manual Feed (Tray 1) from the Source Tray drop-down list. See Printer Properties (driver) for instructions. After you have enabled the setting, feed the single sheet of media, and press the Go button each time to print.
Canceling a print job

You can cancel a print job from a software application or a print queue.

To stop the printer immediately, remove the remaining paper from the printer. After the printer stops, use one of the following options.

- **Printer control panel**: To cancel the print job, press and release the **CANCEL** button on the printer control panel.

- **Software application**: Typically, a dialog box appears briefly on your screen, allowing you to cancel the print job.

- **Windows print queue**: If a print job is waiting in a print queue (computer memory) or print spooler, delete the job there. Go to the **Printer** screen in Windows 98, Me, 2000, or XP, click **Start, Settings, and Printers**. Double-click the **HP LaserJet 1160** or the **HP LaserJet 1320** icon to open the window, select your print job, and click **Delete**.

- **Desktop print queue (Mac OS)**: For Mac OS 9, double-click the printer icon in the **Finder** to open the printer queue, highlight the print job, and click **Trash**. For Mac OS X, open **Print Center** (or **Printer Setup Utility** in v10.3), double-click the printer name, select the print job, and click **Delete**.

- **HP Toolbox**: Open HP Toolbox, browse to the printer's **Device Status** page, and click **Cancel Job**. See *Using the hp toolbox* for more information.

- **Embedded Web server**: Open the printer's embedded Web server page, and click **Cancel Job**. See *Using the embedded Web server* for more information.

If the status lights on the control panel continue to blink after you cancel a print job, the computer is still sending the job to the printer. Either delete the job from the print queue or wait until the computer finishes sending data. The printer will return to the Ready state.
Understanding print quality settings

Print quality settings affect how light or dark the print is on the page and the style that the graphics are printed. You can also use the print quality settings to optimize the print quality for a specific media type. See Optimizing print quality for media types for more information.

You can change the settings in the printer Properties to accommodate the types of jobs you are printing. The following are the settings:

- **1200 dpi**: (HP LaserJet 1320 series printer only) This setting uses ProRes 1200 to provide fine-line detail at 1200 x 1200 dpi.

- **1200 dpi effective output quality**: This setting provides 1200 dpi effective output quality using FastRes 1200.

- **600 dpi**: This setting provides 600 x 600 dpi output with Resolution Enhancement technology (RET) for improved text.

- **EconoMode (Saves Toner)**: Text is printed using less toner. This setting is useful when you are printing drafts. You can turn on this option independently of other print quality settings. See Using EconoMode (saves toner) for more information.

1. Access the printer Properties (or Printing Preferences in Windows 2000 and XP). See Printer Properties (driver) for instructions.

2. On the Paper/Quality tab or the Finishing tab (the Paper Type/Quality tab for some Mac drivers), select the print quality setting you want to use.

---

**Note**

Not all printer features are available in all drivers or operating systems. See the printer Properties (driver) online Help for information about availability of features for that driver.

**Note**

To change the print quality settings for all future print jobs, access the Properties through the Start menu in the Windows task bar. To change the print quality settings only for the current software application's use, access the Properties through the Print Setup menu in the application you are using to print. See Printer Properties (driver) for more information.
Using EconoMode (saves toner)

EconoMode is a feature that allows the printer to use less toner per page. Selecting this option will extend the life of the toner supply and will reduce cost per page. However, it will also reduce print quality. The printed image is lighter, but it is adequate for printing drafts or proofs.

HP does not recommend the full-time use of EconoMode. If EconoMode is used full-time when the average toner coverage is significantly less than 5 percent, it is possible that the toner supply will outlast the mechanical parts in the print cartridge. If print quality begins to degrade under these circumstances, you must install a new print cartridge, even if there is toner supply remaining in the cartridge.

1. To enable EconoMode, access the printer Properties (or Printing Preferences in Windows 2000 and XP). See Graphics quality for instructions.

2. On the Paper/Quality tab or the Finishing tab (the Paper Type/Quality tab for some Mac drivers), select the EconoMode checkbox.

---

**Note**

Not all printer features are available in all drivers or operating systems. See the printer Properties (driver) online Help for information about availability of features for that driver.

**Note**

See Graphics quality for instructions on enabling EconoMode for all future jobs.
Optimizing print quality for media types

Media type settings control the temperature of your printer's fuser. You can change the settings for the media that you are using to optimize the print quality.

You can access the optimizing feature from the Paper tab in your printer driver, from HP Toolbox, or from the embedded Web server.

The HP LaserJet 1160 and HP LaserJet 1320 series printers provide a number of print modes that allow the unit to adapt more specifically to the printer's media environment. The following tables provide an overview of the driver print modes.

Note: When using the CARDSTOCK, ENVELOPE, LABEL, and ROUGH modes, the printer pauses between pages and the number of pages per minute decreases.

### Driver print modes

<table>
<thead>
<tr>
<th>Mode</th>
<th>Purpose and media</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLAIN</td>
<td>75 to 104 g/m² (20 to 27 lb)</td>
</tr>
<tr>
<td>LIGHT</td>
<td>&lt; 75 g/m² (20 lb)</td>
</tr>
<tr>
<td>HEAVY</td>
<td>90 to 105 g/m² (24 to 28 lb)</td>
</tr>
<tr>
<td>CARDSTOCK</td>
<td>Card stock or thick media</td>
</tr>
<tr>
<td>TRANSPARENCY</td>
<td>4-mil, 0.1 Monochrome Overhead</td>
</tr>
<tr>
<td>ENVELOPE</td>
<td>Standard HP LaserJet envelopes</td>
</tr>
<tr>
<td>LABEL</td>
<td>Standard HP LaserJet labels</td>
</tr>
<tr>
<td>BOND</td>
<td>Bond paper</td>
</tr>
<tr>
<td>ROUGH</td>
<td>Rough paper</td>
</tr>
</tbody>
</table>
Guidelines for using media

The following sections provide guidelines and instructions for printing on transparencies, envelopes, and other special media. Guidelines and specifications are included to help you select media that optimizes print quality and avoid media that may cause jams or damage the printer.

Paper

For best results, use conventional 75 g/m² (20 lb) paper. Make sure that the paper is of good quality and free of cuts, nicks, tears, spots, loose particles, dust, wrinkles, voids, and curled or bent edges.

If you are unsure about what type of paper you are loading (such as bond or recycled), check the label on the package of paper.

Some paper causes print quality problems, jamming, or damage to the printer.

Paper usage

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Problem with paper</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor print quality or toner adhesion. Problems with feeding.</td>
<td>Too moist, too rough, too smooth, or embossed. Faulty paper lot.</td>
<td>Try another kind of paper: between 100-250 Sheffield and 4-6 percent moisture content. Check the printer and make sure that the appropriate media type has been selected.</td>
</tr>
<tr>
<td>Dropouts, jamming, or curl.</td>
<td>Stored improperly.</td>
<td>Store paper flat in its moistureproof wrapping.</td>
</tr>
<tr>
<td>Increased gray background shading.</td>
<td>Might be too heavy.</td>
<td>Use lighter paper.</td>
</tr>
<tr>
<td>Excessive curl. Problems with feeding.</td>
<td>Too moist, wrong grain direction, or short-grain construction.</td>
<td>Use long-grain paper. Print using the straight-through output path. Check the printer and make sure that the appropriate media type has been selected.</td>
</tr>
<tr>
<td>Jamming or damage to printer.</td>
<td>Cutouts or perforations.</td>
<td>Do not use paper with cutouts or perforations.</td>
</tr>
<tr>
<td>Problems with feeding.</td>
<td>Ragged edges.</td>
<td>Use good quality paper.</td>
</tr>
</tbody>
</table>
The printer uses heat and pressure to fuse toner to the paper. Make sure that any colored paper or preprinted forms use inks that are compatible with the printer temperature (200° C (392° F) for 0.1 second).

Do not use letterhead that is printed with low-temperature inks, such as those used in some types of thermography.

Do not use raised letterhead.

Do not use transparencies designed for Inkjet printers or other low temperature printers. Use only transparencies that are specified for use with HP LaserJet printers.

**Labels**

HP recommends that you print labels from the single-sheet priority input slot (Tray 1) using the straight-through output path. See [Straight-through output path](#) for more information.

**CAUTION**

Do not feed a sheet of labels through the printer more than once. The adhesive degrades and might damage the printer.

**Label construction**

When selecting labels, consider the quality of the following components:

- **Adhesives**: The adhesive material should be stable at 200° C (392° F), the printer's maximum temperature.
- **Arrangement**: Only use labels with no exposed backing between them. Labels can peel off sheets that have spaces between the labels, causing serious jams.
- **Curl**: Prior to printing, labels must lie flat with no more than 13 mm (0.5 in.) of curl in any direction.
- **Condition**: Do not use labels with wrinkles, bubbles, or other indications of separation.

**Transparencies**

Transparencies must be able to withstand 200° C (392° F), the printer's maximum temperature.

**CAUTION**

You can print transparencies from the main input tray (Tray 2). However, do not load more than 75 transparencies at one time.

**Envelopes**

HP recommends that you print envelopes from the single-sheet priority input slot (Tray 1) using the straight-through paper path. See [Straight-through output path](#) for more information.
Envelope construction

Envelope construction is critical. Envelope fold lines can vary considerably, not only between manufacturers, but also within a box from the same manufacturer. Successful printing on envelopes depends upon the quality of the envelopes. When selecting envelopes, consider the following components:

- **Weight**: The weight of the envelope paper should not exceed 90 g/m² (24 lb), or jamming might result.
- **Construction**: Prior to printing, envelopes should lie flat with less than 6 mm (0.25 in.) curl and should not contain air. Envelopes that trap air may cause problems. Do not use envelopes that contain clasps, snaps, tie strings, transparent windows, holes, perforations, cut outs, synthetic materials, stamping, or embossing. Do not use envelopes with adhesives that do not require moistening, but rely instead on pressure to seal them.
- **Condition**: Make sure that the envelopes are not wrinkled, nicked, or otherwise damaged. Make sure that the envelopes do not have any exposed adhesive.
- **Sizes**: From 90 x 160 mm (3.5 x 6.3 in.) to 178 x 254 mm (7 x 10 in.).

Envelopes with double-side seams

An envelope with double-side-seam construction has vertical seams at both ends of the envelope rather than diagonal seams. This style might be more likely to wrinkle. Make sure that the seam extends all the way to the corner of the envelope as shown in the following illustration:

1 acceptable envelope construction
2 unacceptable envelope construction

Envelopes with adhesive strips or flaps

Envelopes with a peel-off adhesive strip or with more than one flap that folds over to seal must use adhesives compatible with the heat and pressure in the printer: 200° C (392° F). The extra flaps and strips might cause wrinkling, creasing, or jams.
Envelope storage

Proper storage of envelopes contributes to good print quality. You should store envelopes flat. If air is trapped in an envelope, creating an air bubble, the envelope might wrinkle during printing.

Card stock and heavy media

You can print many types of card stock from the paper input tray, including index cards and postcards. Some card stock performs better than others because its construction is better suited for feeding through a laser printer.

For optimum printer performance, do not use paper heavier than 157 g/m² (42 lb). Paper that is too heavy might cause misfeeds, stacking problems, paper jams, poor toner fusing, poor print quality, or excessive mechanical wear.

Note

You might be able to print on heavier paper if you do not fill the input tray to capacity and if you use paper with a smoothness rating of 100-180 Sheffield.

Card stock construction

- **Smoothness**: 135-157 g/m² (36-42 lb) card stock should have a smoothness rating of 100-180 Sheffield. 60-135 g/m² (16-36 lb) card stock should have a smoothness rating of 100-250 Sheffield.
- **Construction**: Card stock should lie flat with less than 5 mm (0.2 in.) of curl.
- **Condition**: Make sure that the card stock is not wrinkled, nicked, or otherwise damaged.
- **Sizes**: Only use card stock within the following size ranges:
  - **Minimum**: 76 x 127 mm (3 x 5 in.)
  - **Maximum**: 216 x 356 mm (8.5 x 14.0 in.)

Card stock guidelines

Set margins at least 2 mm (0.08 in.) away from the edges.

Letterhead and preprinted forms

Letterhead is premium paper that often has a watermark, sometimes uses cotton fiber, and is available in a wide range of colors and finishes with matching envelopes. Preprinted forms can be made of a broad spectrum of paper types ranging from recycled to premium.

Many manufacturers now design these grades of paper with properties optimized for laser printing and advertise the paper as laser compatible or laser guaranteed. Some of the rougher surface finishes, such as cockle, laid, or linen, might require the special fuser modes that are available on some printer models to achieve adequate toner adhesion.

Note

Some page-to-page variation is normal when printing with laser printers. This variation cannot be observed when printing on plain paper. However, this variation is obvious when printing on preprinted forms because the lines and boxes are already placed on the page.
To avoid problems when using preprinted forms, embossed paper, and letterhead, observe the following guidelines:

- Avoid using low-temperature inks (the kind used with some types of thermography).
- Use preprinted forms and letterhead paper that have been printed by offset lithography or engraving.
- Use forms that have been created with heat-resistant inks that will not melt, vaporize, or release undesirable emissions when heated to 205° C (401° F) for 0.1 second. Typically, oxidation-set or oil-based inks meet this requirement.
- When the form is preprinted, be careful not to change the moisture content of the paper, and do not use materials that change the paper's electrical or handling properties. Seal the forms in moisture-proof wrap to prevent moisture changes during storage.
- Avoid processing preprinted forms that have a finish or coating.
- Avoid using heavily embossed or raised-letterhead papers.
- Avoid papers that have heavily textured surfaces.
- Avoid using offset powders or other materials that prevent printed forms from sticking together.
Choosing paper and other media

HP LaserJet printers produce excellent print quality documents. You can print on a variety of media, such as paper (including up to 100% recycled fiber content paper), envelopes, labels, transparencies, and custom-size media. The following are the supported media sizes:

- Minimum: 76 by 127 mm (3 by 5 in.)
- Maximum: 216 by 356 mm (8.5 by 14 in)

Properties such as weight, grain, and moisture content are important factors that affect printer performance and quality. To achieve the best possible print quality, only use high-quality media designed for laser printers. See Printer media specifications for detailed paper and media specifications.

Note
Always test a sample of the media before you purchase large quantities. Your media supplier should understand the requirements specified in the HP LaserJet printer family print media guide (HP part number 5963-7863). See Printer media specifications for more information.

HP media

HP recommends the following HP media:

- HP Multipurpose Paper
- HP Office Paper
- HP All-in-One Printing Paper
- HP LaserJet Paper
- HP Premium Choice LaserJet Paper

Media to avoid

The HP LaserJet 1160 and HP LaserJet 1320 series printers can handle many types of media. Use of media outside the printer's specifications will cause a loss of print quality and increase the chance of paper jams occurring.

- Do not use paper that is too rough.
- Do not use paper with cutouts or perforations other than standard 3-hole punched paper.
- Do not use multipart forms.
- Do not use paper with a watermark if you are printing solid patterns.

Media that may damage the printer

In rare circumstances media can damage the printer. The following media must be avoided to prevent possible damage:

- Do not use media with staples attached.
- Do not use transparencies designed for Inkjet printers or other low temperature printers. Use only transparencies that are specified for use with HP LaserJet printers.
- Do not use photo paper intended for Inkjet printers.
Do not use paper that is embossed or coated and is not designed for the temperatures of the printer's image fuser. Select media that can tolerate temperatures of 200° C (392° F) for 0.1 second. HP produces a selection of media that is designed for the HP LaserJet 1160 and HP LaserJet 1320 series printers.

Do not use letterhead paper with low temperature dyes or thermography. Preprinted forms or letterhead must use inks that can tolerate temperatures of 200° C (392° F) for 0.1 second.

Do not use any media that produces hazardous emissions, or that melts, offsets, or discolors when exposed to 200° C (392° F) for 0.1 second.

Loading media into the input trays

The following sections describe how to load media into the different input trays.

**CAUTION**

If you try to print on media that is wrinkled, folded, or damaged in any way, a jam might occur. See Printer media specifications for more information.

**Single-sheet priority input slot (Tray 1)**

The single-sheet priority input slot holds one sheet of media up to 163 g/m² (43 lb) or one envelope, transparency, or card. Load media with the top forward and the side to be printed facing up. To prevent jams and skewing, always adjust the side media guides before feeding the media.

**Note**

When feeding media into the single-sheet priority input slot, the printer pulls the media partially into the engine and waits for you to press the Go button (blinking light). You must wait for the printer to stop before feeding another sheet of media. You can only feed one sheet of media at a time.

**250-sheet input tray (Tray 2 or optional Tray 3)**

The input tray holds up to 250 pages of 75 g/m² (20 lb) paper or fewer pages of heavier media (25 mm (0.9 in) or less stack height). Load media with the top forward and the side to be printed facing down. To prevent jams and skewing, always adjust the side and rear media guides.

**Note**

When you add new media, make sure that you remove all of the media from the input tray and straighten the stack of new media. This helps prevent multiple sheets of media from feeding through the printer at one time, reducing media jams.
Printing an envelope

Only use envelopes that are recommended for laser printers. See Printer media specifications for more information.

Note

You must load envelopes one at a time in the single-sheet priority input slot (Tray 1).

1. To prevent the envelope from curling as it prints, open the straight-through output door.

2. Before loading the envelope, open the single-sheet priority input slot (Tray 1), and adjust the media guides to the width of the envelope.
3. Place the envelope with the side to be printed facing up and the top edge along the left media guide. Feed the envelope into the slot. The envelope will partially feed into the printer, and the printer will pause.

**Note**  
If the envelope has a flap on the short edge, feed that edge into the printer first.


5. On the *Paper/Quality* tab or the *Paper* tab (the *Paper Type/Quality* tab for some Mac drivers), select *Envelope* as the media type.

**Note**  
Not all printer features are available in all drivers or operating systems. See the printer Properties (driver) online Help for information about availability of features for that driver.

6. Print the document.

To print using manual feed, see *Manual feed*. 

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ENWW
Printing on transparencies or labels

Only use transparencies and labels that are recommended for use in laser printers, such as HP transparency film and HP LaserJet labels. See Printer media specifications for more information.

**CAUTION**

Be sure to set the correct media type in the printer settings as instructed below. The printer adjusts the fuser temperature according to the media type setting. When printing on special media such as transparencies or labels, this adjustment prevents the fuser from damaging the media as it passes through the printer.

**CAUTION**

Inspect the media to make sure that it is not wrinkled or curled and that it does not have any torn edges or missing labels.

1. Open the straight-through output door.
2. Before feeding the media, open the single-sheet priority input slot (Tray 1), and adjust the media guides to the width of the media.
3. Feed a single page in the single-sheet priority input slot (Tray 1). Make sure that the top of the media is forward and the side to be printed (rough side) is facing up. The media will partially feed into the printer, and the printer will pause.

**Note**

You can load multiple transparencies in the main input tray (Tray 2). However, do not load more than 75 transparencies at a time.

5. On the Paper/Quality tab or the Paper tab (the Paper Type/Quality tab for some Mac drivers), choose the correct media type.

**Note**

Not all printer features are available in all drivers or operating systems. See the printer Properties (driver) online Help for information about availability of features for that drivers.

6. Print the document. Remove the media from the back of the printer as it prints to prevent it from sticking together, and place the printed pages on a flat surface.
Printing on letterhead and preprinted forms

The HP LaserJet 1160 and HP LaserJet 1320 series printers can print on letterhead and preprinted forms that can withstand temperatures of 205° C (401° F).

1. Before feeding the media, open the single-sheet priority input slot, and adjust the media guides to the width of the media.

2. Feed the media with the top forward and the side to be printed facing up. The media will partially feed into the printer and the printer will pause.

3. Print the document.

To print using manual feed, see Manual feed.

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Note

To print a single-page cover letter on letterhead, followed by a multiple-page document, feed the letterhead face up in the single-sheet priority input slot (Tray 1), and load the standard paper in the main input tray (Tray 2). The printer automatically prints from the single-sheet priority input slot first.
The HP LaserJet 1160 and HP LaserJet 1320 series printer can print on custom-size media or card stock between 76 by 127 mm (3 by 5 inches) and 216 by 356 mm (8.5 by 14 inches).

Use the main input tray for multiple sheets. See Main input tray (Tray 2) for the supported media sizes.

**CAUTION**

Make sure that the sheets are not stuck together before you load them.

1. Open the straight-through output door.

2. Before feeding the media, open the single-sheet priority input slot (Tray 1), and adjust the media guides to the width of the media.

3. Feed the media in the single-sheet priority input slot (Tray 1) with the narrow side forward and the side to be printed facing up. The media will partially feed into the printer, and the printer will pause.

4. Select the correct size in the printer settings. (Software settings can override printer Properties.)

5. Access the printer Properties (or Printing Preferences in Windows 2000 and XP). See Printer Properties (driver) for instructions.

6. On the Paper/Quality tab or the Paper tab (the Paper Type/Quality tab for some Mac drivers), select the custom size option. Specify the dimensions of the custom-size media.

**Note**

Not all printer features are available in all drivers or operating systems. See the printer Properties (driver) online Help for information about availability of features for that driver.
7. Print the document.
   To print using manual feed, see Manual feed.
Automatic two-sided printing (duplex)

Automatic two-sided printing is standard for the HP LaserJet 1320 series printer. Automatic two-sided printing supports A4, letter, and legal paper.

Note Depending on the media size, you might have to adjust the automatic two-sided printing media-size selector to the appropriate size. Push in the media-size selector for letter/legal-size media. Pull out the media-size selector for A4-size media.

The following sections provide instructions for the different operating systems.

Windows
To automatically print on both sides of the paper (HP LaserJet 1320 series printer only), perform the following steps:
1. Make sure that the straight-through output door is closed.
2. Access the printer Properties (or Printing Preferences in Windows 2000 and XP).
3. On the Finishing tab, select Print On Both Sides.
4. Print the document.

Mac OS 9
1. Do a File-Print, select Layout, and select Print on Both Sides.
2. If the Print on Both Sides check box does not appear, perform the following steps:
   a. On the desktop, click Printer queue.
b. On the Menu bar, select **Printing-Change Setup**.
c. On the Installable Options-Change menu, select **Duplex Unit**.
d. On the To menu, select **Installed**.
e. Click **OK**.

**Mac OS X**

1. Do a **File-Print**, select **Duplex**, and select **Print on Both Sides**.
2. If the **Print on Both Sides** check box does not appear, perform the following steps:
   a. In **Print Center (Printer Setup Utility for Mac OS X v10.3)**, click **Printer queue**.
   b. On the Menu bar, select **Printers-Show Info**.
   c. On the Installable Options menu, check **Duplex Unit**.
   d. Click **Apply Changes**.
   e. Close the menu.
Printing on both sides of the paper (manual two-sided printing)

To print on both sides of the paper (manual two-sided printing), you must run the paper through the printer twice. You can print using the top output bin or the straight-through output door. Hewlett-Packard recommends that you use the top output bin for lightweight paper and use the straight-through output path for any heavy media or media that curls when printed.

Note
This feature is not supported in Mac OS X.

Note
Manual two-sided printing can cause the printer to become dirty, reducing print quality. See Cleaning the printer for instructions if the printer becomes dirty.

Manual two-sided printing using the top output bin

The following sections provide instructions for the different operating systems.

Windows

1. Make sure that the straight-through output door is closed.


3. On the Device Settings tab, select the option to allow manual two-sided printing.


Note
Not all printer features are available in all drivers or operating systems. See the printer Properties (driver) online Help for information about availability of features for that driver.

5. Print the document.
6. After side one has printed, remove the remaining paper from the input tray, and set it aside until after you finish the manual two-sided print job.

7. Gather the printed pages, and straighten the stack.

8. Place the stack back in the input tray. The printed side should be facing up with the bottom edge towards the printer.

9. Press the Go button on the control panel to print side two.
Mac OS 9 (HP LaserJet 1160 printer)

Note
For the HP LaserJet 1160 printer, two-sided printing is not supported in Mac OS X.

1. Make sure that the straight-through output door is closed.
2. Do a File-Print, select Layout, and select Print on Both Sides.
3. Print the document.
4. After side one has printed, remove the remaining paper from the input tray, and set it aside until after you finish the manual two-sided print job.
5. Gather the printed pages, and straighten the stack.
6. Place the stack back in the input tray. The printed side should be facing up with the bottom edge towards the printer first.
7. Press the Go button on the control panel to print side two.

Mac OS 9 (HP LaserJet 1320 series printer)

Note
For the HP LaserJet 1320 series printer, two-sided printing is not supported in Mac OS X.

1. Make sure that the straight-through output door is closed.
2. If Manual Duplex does not appear as a printer option, perform the following steps:
   a. Verify that hp Manual Duplex&Booklet (Classic) was selected when the software driver was installed with the Custom Install option.
   b. Do a File-Print, select Plug-In Preferences, and click the right-facing arrow. The right-facing arrow changes to a down-facing arrow, and the hp Manual Duplex&Booklet feature displays.
   c. Select Print Time Filters, select hp Manual Duplex&Booklet, and click Save Settings.
   d. Select Manual Duplex, and select Print on Both Sides.
3. Print the document.
4. After side one has printed, remove the remaining paper from the input tray, and set it aside until after you finish the manual two-sided print job.
5. Gather the printed pages, and straighten the stack.
6. Place the stack back in the input tray. The printed side should be facing up with the bottom edge towards the printer first.
7. Press the Go button on the control panel to print side two.

Manual two-sided printing using the straight-through output door

The following sections provide instructions for the different operating systems.
Windows

1. Open the straight-through output door.


3. On the Device Settings tab, select the option to allow manual two-sided printing.


Note

Not all printer features are available in all drivers or operating systems. See the printer Properties (driver) online Help for information about availability of features for that driver.

5. Print the document using the single-sheet priority input slot (Tray 1). Feed the pages into the slot one at a time.
6. Gather the printed pages, and straighten the stack. Turn the printed side down with the top edge toward the printer.

7. Feed the pages into the single-sheet priority input slot (Tray 1) one at a time, starting with the first sheet printed. Feed the printed side facing down and the top edge forward.

**Mac OS 9 (HP LaserJet 1160 printer)**

*Note*

For the HP LaserJet 1160 printer, two-sided printing is not supported in Mac OS X.

1. Open the straight-through output door.
2. Do a File-Print, select Layout, and select Print on Both Sides.
4. Print the document using the single-sheet priority input slot (Tray 1). Feed the pages into the slot one at a time.
5. After side one has printed, remove the remaining paper from the input tray, and set it aside until after you finish the manual two-sided print job.
6. Gather the printed pages, and straighten the stack. Turn the printed side down with the top edge toward the printer.
7. Feed the pages into the single-sheet priority input slot (Tray 1) one at a time, starting with the first sheet printed.

**Mac OS 9 (HP LaserJet 1320 series printer)**

*Note*

For the HP LaserJet 1320 series printer, two-sided printing is not supported in Mac OS X.

1. Open the straight-through output door.
2. If Manual Duplex does not appear as a printer option, perform the following steps:
a. Verify that **hp Manual Duplex&Booklet (Classic)** was selected when the software
driver was installed with the **Custom Install** option.

b. Do a **File-Print**, select **Plug-In Preferences**, and click the right-facing arrow. The
right-facing arrow changes to a down-facing arrow, and the **hp Manual
Duplex&Booklet** feature displays.

c. Select **Print Time Filters**, select **hp Manual Duplex&Booklet**, and click **Save
Settings**.

d. Select **Manual Duplex**, and select **Print on Both Sides**.

e. Select **Alternate output bin is open (straight through paper path)**.

3. Print the document using the single-sheet priority input slot (Tray 1). Feed the pages into
the slot one at a time.

4. After side one has printed, remove the remaining paper from the input tray, and set it
aside until after you finish the manual two-sided print job.

5. Gather the printed pages, and straighten the stack. Turn the printed side down with the
top edge toward the printer.

6. Feed the pages into the single-sheet priority input slot (Tray 1) one at a time, starting
with the first sheet printed.
Printing multiple pages on a single sheet of paper (N-up printing)

You can select the number of pages that you want to print on a single sheet of paper. If you choose to print more than one page per sheet, the pages appear smaller and are arranged on the sheet in the order that they would otherwise be printed.

1. From your software application, access the printer Properties (or Printing Preferences in Windows 2000 and XP). See Printer Properties (driver) for instructions.

2. On the Finishing tab (the Layout tab for some Mac drivers), select the correct number of pages per sheet.

   Note

   Not all printer features are available in all drivers or operating systems. See the printer Properties (driver) online Help for information about availability of features for that driver.

3. There is also a check box for page borders and a pull-down menu to specify the order of pages printed on the sheet.
Printing booklets

You can print booklets on letter, legal, or A4 paper.

1. Load the paper, and make sure that the straight-through output door is closed.


3. On the Device Settings tab, select the option to allow manual two-sided printing.

4. On the Finishing tab (the Paper Type/Quality tab for some Mac drivers), select the option to Print On Both Sides. Ensure that Straight Paper Path is not checked.

5. Set the number of pages per sheet to 2. Select the appropriate binding option, and click OK. Print the document.

6. If you are printing on card stock or heavy media, see Manual two-sided printing using the straight-through output door for instructions.

   For all other media types, see Manual two-sided printing using the top output bin for instructions.

7. Fold and staple the pages.

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Note

This feature is not available for Mac OS X v10.1 and later on the HP LaserJet 1320 series printer.
Printing watermarks

You can use the watermark option to print text "underneath" (in the background) of an existing document. For example, you might want to have large gray letters reading Draft or Confidential printed diagonally across the first page or all of the pages of a document.

1. From your software application, access the printer Properties (or Printing Preferences in Windows 2000 and XP). See Printer Properties (driver) for instructions.

2. On the Effects tab (the Watermark/Overlay tab for some Mac drivers), select the watermark you want to use.

Note
Not all printer features are available in all drivers or operating systems. See the printer Properties (driver) online Help for information about availability of features for that driver.
This chapter provides information on the following topics:

- Cleaning the printer
- Changing the pickup roller
- Cleaning the pickup roller
- Changing the printer separation pad
Cleaning the printer

Clean the outside of the printer with a clean, damp cloth when necessary.

**CAUTION**

Do not use ammonia-based cleaners on or around the printer.

During the printing process, paper, toner, and dust particles can accumulate inside the printer. Over time, this buildup can cause print quality problems, such as toner specks or smearing, and paper jams. To correct and prevent these types of problems, you can clean the print cartridge area and the printer media path.

**Cleaning the print cartridge area**

You do not need to clean the print cartridge area often. However, cleaning this area can improve the quality of your printed sheets.

**WARNING!**

Before cleaning the printer, turn the printer off by unplugging the power cord, and wait for the printer to cool.

1. Open the print cartridge door, and remove the print cartridge.

**CAUTION**

To prevent damage, do not expose the print cartridge to light. Cover the print cartridge if necessary. Also, do not touch the black sponge transfer roller inside the printer. By doing so, you can damage the printer.
2. With a dry, lint-free cloth, wipe any residue from the media path area and the print cartridge cavity.

3. Replace the print cartridge, and close the print cartridge door.

4. Plug the power cord back into the printer.
Cleaning the printer media path

If you are experiencing toner specks or dots on the printouts, clean the printer media path. This process uses a transparency to remove dust and toner from the media path. Do not use bond or rough paper.

Note

For best results use a sheet of transparency. If you do not have any transparencies, you can use copier grade media (70 to 900 g/m² (18 to 24 lb.)) with a smooth surface.

1. Make sure that the printer is idle and the Ready light is on.
2. Load the media in the input tray.
3. Print a cleaning page using one of the following methods:
   - Access the HP toolbox. See Using the hp toolbox for instructions. Click the Troubleshooting tab, and click Print Quality Tools. Select the cleaning page. Or
   - On the printer control panel, press and hold the Go button until all three lights come on (about 10 seconds). When all three lights come on, release the Go button.

Note

The cleaning process takes approximately 2 minutes. The cleaning page will stop periodically during the cleaning process. Do not turn the printer off until the cleaning process has finished. You might need to repeat the cleaning process several times to thoroughly clean the printer.
Changing the pickup roller

Normal use with good media causes wear. The use of poor media might require more frequent replacement of the pickup roller.

If the printer regularly mispicks (no media feeds through), you might need to change or clean the pickup roller. See Ordering supplies and accessories to order a new pickup roller.

**CAUTION**

Failure to complete this procedure might damage the printer.

1. Unplug the power cord from the printer, and allow the printer to cool.

2. Open the print cartridge door, and remove the print cartridge.
3. Remove the main input tray (Tray 2).

4. Open the front automatic two-sided path door (HP LaserJet 1320 series printer only).

5. Place the printer on the work surface with the front of the printer facing up.
6. Pull the white tabs outward, and rotate the tabs up.

7. Slide the right tab to the right, and leave the tab in this position throughout the procedure.
8. Slide the pickup roller assembly to the right, and remove the left end cap.

9. Remove the pickup roller.
10. Insert the left side of the new pickup roller into the left slot (1), and insert the right side (with notches in the shaft) into the right slot (2).

11. Rotate the shaft until the notches engage and the shaft clicks into place.

12. Place the end cap over the shaft on the left side, push the end cap to the right, and rotate the tab downward into position.

13. Push the right tab to the left, and rotate the tab downward into position.

14. Place the printer on the work surface with the top of the printer facing up.
15. Close the front automatic two-sided path door.

16. Reinstall the print cartridge, and close the print cartridge door.

17. Plug the printer in to turn it back on.
Cleaning the pickup roller

If you want to clean the pickup roller rather than replace it, follow the instructions below:

1. Remove the pickup roller as described in steps 1 through 9 of Changing the pickup roller.
2. Dab a lint-free cloth in water, and scrub the roller.

3. Using a dry, lint-free cloth, wipe the pickup roller to remove loosened dirt.

4. Allow the pickup roller to dry completely before you reinstall it in the printer (see steps 10 through 17 of Changing the pickup roller).
Changing the printer separation pad

Normal use with good media causes wear. The use of poor media might require more frequent replacement of the separation pad. If the printer regularly pulls multiple sheets of media at a time, you might need to change the separation pad.

1. Remove the main input tray (Tray 2).

2. Locate the separation pad.
3. Remove the screws.

4. Remove the separation pad.
5. Insert the new separation pad.

6. Replace the screws.
Problemsolving

This chapter provides information on the following topics:

- Finding the solution
- Status light patterns
- Common Macintosh problems
- Troubleshooting PostScript (PS) errors
- Paper handling problems
- Printed page is different than what appeared on screen
- Printer software problems
- Improving print quality
- Clearing jams
- Wired network setup problemsolving
Finding the solution

You can use this section to find the solution to common printer problems.

**Step 1: Is the printer set up correctly?**

- Is the printer plugged into a power outlet that is known to work?
- Is the on/off switch in the on position?
- Is the print cartridge properly installed? See [Changing the print cartridge](#).
- Is paper properly loaded in the input tray? See [Loading media into the input trays](#).

<table>
<thead>
<tr>
<th>Yes</th>
<th>If you answered yes to the questions above, go to Step 2: Is the Ready light on?</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>If the printer will not turn on, <a href="#">Contact HP support</a>.</td>
</tr>
</tbody>
</table>

**Step 2: Is the Ready light on?**

Do the control panel lights look like this picture?

![Control panel lights diagram](image)

*Note* See [Printer control panel](#) for a description of the lights and buttons on the control panel.

<table>
<thead>
<tr>
<th>Yes</th>
<th>Go to Step 3: Can you print a demo page?</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>If the control panel lights do not look like the picture above, see Status light patterns. If you are unable to resolve the problem, <a href="#">Contact HP support</a>.</td>
</tr>
</tbody>
</table>

**Step 3: Can you print a demo page?**

Press the Go button to print a demo page.
Yes | If the demo page printed, go to Step 4: Is the print quality acceptable?  
---|---  
No | If no paper came out, see Paper handling problems.  
| If you are unable to resolve the problem, Contact HP support.

### Step 4: Is the print quality acceptable?

| Yes | If the print quality is acceptable, go to Step 5: Is the printer communicating with the computer?  
---|---  
No | If the print quality is poor, see Improving print quality.  
| Verify that the print settings are correct for the media you are using. See Choosing paper and other media for information on adjusting the settings for various types of media.  
| If you are unable to resolve the problem, Contact HP support.

### Step 5: Is the printer communicating with the computer?  
Try printing a document from a software application.

| Yes | If the document prints, go to Step 6: Does the printed page look like you expected?  
---|---  
No | If the document does not print, see Printer software problems.  
| If you are using a Macintosh computer, see Common Macintosh problems.  
| If you are using a PS driver, see Troubleshooting PostScript (PS) errors.  
| If you are unable to resolve the problem, Contact HP support.

### Step 6: Does the printed page look like you expected?

| Yes | The problem should be resolved. If it is not resolved, Contact HP support.  
---|---  
No | See Printed page is different than what appeared on screen.  
| If you are unable to resolve the problem, Contact HP support.
Contact HP support

- In other locations, see http://www.hp.com/.
Status light patterns

Light status legend

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>∙</td>
<td>Symbol for &quot;light off&quot;</td>
</tr>
<tr>
<td>∙</td>
<td>Symbol for &quot;light on&quot;</td>
</tr>
<tr>
<td>∙</td>
<td>Symbol for &quot;light blinking&quot;</td>
</tr>
</tbody>
</table>

Control panel light message

<table>
<thead>
<tr>
<th>Light status</th>
<th>State of the printer</th>
<th>Action</th>
</tr>
</thead>
</table>
| ![Light Status](image) | Initialization/Startup  
While in the Startup state, the Go, Ready, and Attention lights cycle (at the rate of 500 ms) one after another. | During the Initialization process, pressing buttons has no effect. |
<table>
<thead>
<tr>
<th>Light status</th>
<th>State of the printer</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Reconfiguration Initialization</td>
<td>During the Reconfiguration process, pressing buttons has no effect.</td>
</tr>
<tr>
<td></td>
<td>During the printer start up, you can request special initialization sequences that reconfigure the printer. When one of the sequences is requested, such as Cold Reset, the lights cycle as in the Initialization/Startup state.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ready</td>
<td>To print a Configuration page, press and hold the Go button for 5 seconds.</td>
</tr>
<tr>
<td></td>
<td>The printer is ready with no job activity.</td>
<td>To print a Demo page, press and release the Go button.</td>
</tr>
<tr>
<td></td>
<td>Processing Data</td>
<td>To cancel the current job, press the Cancel button.</td>
</tr>
<tr>
<td></td>
<td>The printer is processing or receiving data.</td>
<td></td>
</tr>
</tbody>
</table>
## Control panel light message (continued)

<table>
<thead>
<tr>
<th>Light status</th>
<th>State of the printer</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Light status icon" /></td>
<td>Job Cancel</td>
<td>Pressing the Go button has no effect.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Once the cancellation process has been completed, the printer returns to the Ready state.</td>
</tr>
<tr>
<td><img src="image2" alt="Light status icon" /></td>
<td>Manual Feed or Continuable Error</td>
<td><strong>To recover from the error and print whatever data is possible, press the Go button.</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>If the recovery is successful, the printer goes to the Processing Data state and completes the job.</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>If the recovery is unsuccessful, the printer returns to the Continuable Error state.</strong></td>
</tr>
<tr>
<td><img src="image3" alt="Light status icon" /></td>
<td>Attention</td>
<td><strong>To reset the printer after a jam, press the Go button.</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>You might need to clear the error manually, and press the Go button or close the top cover.</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>If the error persists, the printer returns to the Attention state.</strong></td>
</tr>
<tr>
<td>Light status</td>
<td>State of the printer</td>
<td>Action</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>----------------------</td>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Fatal Error</strong></td>
<td></td>
<td>• Turn off the printer, wait 10 seconds, and turn on the printer.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• If you are unable to resolve the problem, Contact HP support.</td>
</tr>
<tr>
<td><strong>Accessory Error</strong></td>
<td>Accessory Error</td>
<td>To display additional error information, press the Go button. The light pattern changes. For more information about the light pattern now displayed, see Accessory error indicators. When you release the Go button, the printer returns to the initial Accessory Error state.</td>
</tr>
<tr>
<td>(HP LaserJet 1320 series printer only)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cleaning Page</strong></td>
<td></td>
<td>During cleaning mode, pressing buttons has no effect. The printer motor slows down and the printer prints a page.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Light status</td>
<td>State of the printer</td>
<td>Action</td>
</tr>
<tr>
<td>------------------------------</td>
<td>--------------------------------------------------------------------------------------</td>
<td>-------------------------------------------</td>
</tr>
<tr>
<td>Toner Low</td>
<td>The Go, Ready, and Attention lights act independently of the Toner Low state.</td>
<td>Insert a new print cartridge.</td>
</tr>
<tr>
<td>Toner Missing</td>
<td>The print cartridge has been removed from the printer.</td>
<td>Reinsert the print cartridge in the printer.</td>
</tr>
<tr>
<td>Wireless Connection Established</td>
<td>The Go, Ready, Attention, and Toner lights act independently of the Wireless light.</td>
<td>No action is necessary.</td>
</tr>
</tbody>
</table>
Control panel light message (continued)

<table>
<thead>
<tr>
<th>Light status</th>
<th>State of the printer</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wireless Disabled</td>
<td>The Go, Ready, Attention, and Toner lights act independently of the Wireless light.</td>
<td>No action is necessary.</td>
</tr>
</tbody>
</table>

Attempting to Establish Wireless Connection
The Wireless light blinks at one-half second intervals.
The Go, Ready, Attention, and Toner lights act independently of the Wireless light.
No action is necessary.

Accessory error indicators

<table>
<thead>
<tr>
<th>Accessory error</th>
<th>Attention light</th>
<th>Ready light</th>
<th>Go light</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal HP Jetdirect error</td>
<td>On</td>
<td>Off</td>
<td>Off</td>
</tr>
<tr>
<td>DIMM slot incompatible error</td>
<td>Off</td>
<td>Off</td>
<td>On</td>
</tr>
</tbody>
</table>

Return to Finding the solution.
Common Macintosh problems

Choose the item that best describes the problem:

- **Problems in the Chooser**
- **Printing errors**
- **USB problems**
- **OS X problems**

### Problems in the Chooser

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Possible cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>LaserWriter icon does not appear in the Chooser. (HP LaserJet 1320 series printer)</td>
<td>Software not installed correctly.</td>
<td>The LaserWriter 8 driver should be present as a part of the Mac OS. Make sure that the LaserWriter driver is in the Extensions folder within the systems folder. If not, install the LaserWriter driver from your Mac OS CD.</td>
</tr>
<tr>
<td>The HP LaserJet printer driver icon does not appear in the Chooser. (HP LaserJet 1160 printer)</td>
<td>The software was not installed properly.</td>
<td>Reinstall the software.</td>
</tr>
<tr>
<td>Printer name does not appear in the printer list.</td>
<td>Make sure the cables are connected correctly, the printer is on, and the Ready light is on.</td>
<td>Verify that the printer driver is installed. Make sure the correct printer driver has been selected in the Chooser. Use the HP LaserJet driver for the HP LaserJet 1160 printer. Use the LaserWriter 8 driver for the HP LaserJet 1320 series printer.</td>
</tr>
<tr>
<td>The printer driver does not automatically set up your selected printer even though you clicked Auto Setup in the Chooser. (HP LaserJet 1320 series printer)</td>
<td></td>
<td>Reinstall the printer software. Select an alternate PPD.</td>
</tr>
</tbody>
</table>
### Printing errors

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Possible cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>You cannot use the computer while the printer is printing.</td>
<td>Background Printing has not been selected.</td>
<td><strong>LaserWriter 8.3</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Turn Background Printing on in the Chooser.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Status messages will now be redirected to the)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Print Monitor allowing you to continue working</td>
</tr>
<tr>
<td></td>
<td></td>
<td>while the computer is processing data to</td>
</tr>
<tr>
<td></td>
<td></td>
<td>be sent to the printer.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>LaserWriter 8.4 and higher</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Turn Background Printing on by selecting</td>
</tr>
<tr>
<td></td>
<td></td>
<td>File, Print Desktop, and Background Printing.</td>
</tr>
<tr>
<td>An encapsulated PostScript (EPS) file does not print with the correct</td>
<td>This problem occurs with some software applications.</td>
<td>Try downloading the fonts contained in the</td>
</tr>
<tr>
<td>fonts.</td>
<td></td>
<td>EPS file to the printer before printing.</td>
</tr>
<tr>
<td>Your document is not printing with New York, Geneva, or Monaco fonts.</td>
<td></td>
<td>Send the file in ASCII format instead of</td>
</tr>
<tr>
<td></td>
<td></td>
<td>binary encoding.</td>
</tr>
</tbody>
</table>

### USB problems

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Possible cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unable to print from a third-party USB card.</td>
<td>This error occurs when the software for USB printers is</td>
<td>When adding a third-party USB card, you might need Apple’s USB Adapter</td>
</tr>
<tr>
<td></td>
<td>not installed.</td>
<td>Card Support software. The most current version of this software is</td>
</tr>
<tr>
<td></td>
<td></td>
<td>available from Apple’s web site.</td>
</tr>
</tbody>
</table>
## USB problems (continued)

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Possible cause</th>
<th>Solution</th>
</tr>
</thead>
</table>
| A USB-connected HP LaserJet printer does not appear in the Chooser. | This problem is caused by either a software or hardware component. | **Software troubleshooting**  
- Check that your Macintosh supports USB.  
- Verify if your Macintosh has Mac OS 8.6 or later.  
**Hardware troubleshooting**  
- Check that the printer is turned on.  
- Verify that the USB cable is properly connected.  
- Check that you are using the appropriate high-speed USB cable.  
- Ensure that there are not too many USB devices drawing power from the chain. Disconnect all devices from the chain and connect the cable directly to the USB port on the host computer.  
- Check to see if there are more than two non-powered USB hubs in a row on the chain. Disconnect all devices from the chain and connect the cable directly to the USB port on the host computer. |

**Note**  
The iMac keyboard is a non-powered USB hub.

| The LaserWriter driver does not display USB devices in the Chooser. | For the HP LaserJet 1320 series printer, use the Apple Desktop utility to set up the printer. |
## OS X problems

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Possible cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Printer features do not appear.</td>
<td>The wrong PPD is selected for the printer.</td>
<td>Verify which PPD is selected as follows:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>In the Print dialog box, click <strong>Summary</strong>. Verify that the &quot;PPD for:&quot; setting is correct.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If the PPD setting is incorrect, delete the printer in the Print Center and add it again.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>You might need to manually select the PPD.</td>
</tr>
<tr>
<td>When using OS X v10.2, the printer is not using &quot;Rendezvous&quot; (mDNS)</td>
<td></td>
<td>You might need to upgrade your Internal HP Jetdirect card to a version that supports Rendezvous.</td>
</tr>
<tr>
<td>Tray 2 does not appear as an installed option, even though it is</td>
<td></td>
<td>The ability to manually select installable options is supported only in Mac OS X v10.2 and</td>
</tr>
<tr>
<td>installed on the printer. (HP LaserJet 1320 series printer only)</td>
<td></td>
<td>later.</td>
</tr>
</tbody>
</table>
Troubleshooting PostScript (PS) errors

The following situations are PS language specific and may occur when several printer languages are being used.

Note
To receive a printed or screen displayed message when PS errors occur, open the Print Options dialog box and click the desired selection next to the PS Errors section. You can also access this from the embedded Web server.

<table>
<thead>
<tr>
<th>PS errors</th>
<th>Possible cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>The job prints in</td>
<td>The requested typeface is not downloaded. A personality switch may have been</td>
<td>Download the desired font and send the print job again. Verify the type</td>
</tr>
<tr>
<td>Courier (the</td>
<td>downloaded. A personality switch may have been performed to print a PCL job</td>
<td>location of the font. Download to printer if applicable. Check with the</td>
</tr>
<tr>
<td>printer's default</td>
<td>just before the PS printing job was received.</td>
<td>software documentation.</td>
</tr>
<tr>
<td>typeface) instead</td>
<td></td>
<td></td>
</tr>
<tr>
<td>of the typeface you requested.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A legal page prints with clipped</td>
<td>Print job too complex.</td>
<td>You may need to print your job at 600 dots per inch, reduce the complexity of the page, or install more memory.</td>
</tr>
<tr>
<td>margins.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A PS error page prints.</td>
<td>Print job may not be PS.</td>
<td>Make sure the print job is a PS job. Check to see whether the software application expected a setup or PS header file to be sent to the printer.</td>
</tr>
<tr>
<td>Limit Check Error</td>
<td>Print job is too complex.</td>
<td>You may need to print your job at 600 dots per inch, reduce the complexity of the page, or install more memory.</td>
</tr>
<tr>
<td>VM Error</td>
<td>Font Error</td>
<td>Select unlimited downloadable fonts from printer driver.</td>
</tr>
<tr>
<td>Range Check</td>
<td>Font Error</td>
<td>Select unlimited downloadable fonts from printer driver.</td>
</tr>
</tbody>
</table>

Return to Finding the solution.
Paper handling problems

Choose the item that best describes the problem:

- Paper jam
- Print is skewed (crooked)
- More than one sheet of media feeds through the printer at one time
- Printer does not pull media from the media input tray
- Printer curled the media
- Printed media does not exit to the correct path
- Print job is extremely slow

Paper jam

- See Clearing jams for more information.
- Make sure that you are printing with media that meets specifications. See Printer media specifications for more information.
- Make sure that you are printing with media that is not wrinkled, folded, or damaged.
- Make sure that the printer is clean. See Cleaning the printer for more information.
- If you are printing to the straight-through output path, close and open the door again to make sure that the green release levers are closed.
- If you are using the automatic two-sided printing feature, make sure that the media indicator is set to the correct paper size.

Print is skewed (crooked)

A small amount of skew is normal and might become obvious when using preprinted forms.

- See Page skew for more information.
- Adjust the media guides to the width and length of the media that you are using and try reprinting. See Media paths or Loading media into the input trays for more information.

More than one sheet of media feeds through the printer at one time

- The media input tray might be too full. See Loading media into the input trays for more information.
- Make sure that the media is not wrinkled, folded, or damaged.
- Try paper from a new ream. Do not fan the paper before loading it into the input tray.
- The printer separation pad might be worn. See Changing the printer separation pad for more information.
Printer does not pull media from the media input tray

- Make sure that the printer is not in manual feed mode. See Status light patterns for more information.
- Make sure that the media guides are adjusted properly.
- The pickup roller might be dirty or damaged. See Cleaning the pickup roller or Changing the pickup roller for instructions.

Printer curled the media

- See Curl or wave for more information.
- Open the straight-through output door to print straight through. See Media paths or Choosing paper and other media for more information.

Printed media does not exit to the correct path

Open or close the straight-through output door to reflect the output path that you want to use. See Media paths for more information.

Print job is extremely slow

The maximum speed of the printer is up to 20 pages per minute for the HP LaserJet 1160 printer and up to 22 pages per minute for the HP LaserJet 1320 series printer. Your print job might be very complex. Try the following:

- Reduce the complexity of your document (for example, reduce the number of multiple graphics).
- In the printer driver, set the media type to plain paper.

**Note**

This may cause toner to fuse improperly if using heavy media.

- Add printer memory. See Installing a memory DIMM (HP LaserJet 1320 series printer only).
- Narrow media or heavy media will slow printing. Use normal media.

Return to Finding the solution.
Choose the item that best describes the problem:

- **Garbled, incorrect, or incomplete text**
- **Missing graphics or text, or blank pages**
- **Page format is different than on another printer**
- **Graphics quality**

**Garbled, incorrect, or incomplete text**

- The wrong printer driver might have been selected when the software was installed. Make sure that the HP LaserJet 1160 or HP LaserJet 1320 printer driver is selected in the printer Properties.

- If a specific file prints garbled text, there might be a problem with that specific file. If a specific application prints garbled text, there might be a problem with that application. Make sure that the appropriate printer driver is selected.

- There might be a problem with your software application. Try printing from another software application.

- The parallel cable might be loose or defective. Try the following:
  - Disconnect the cable and reconnect it at both ends.
  - Try printing a job that you know works.
  - If possible, attach the cable and printer to another computer, and try printing a job that you know works.
  - Try using a new IEEE-1284B compliant parallel cable that is 3 m (10 ft) or less. See Ordering supplies and accessories.
  - Turn off the printer and the computer. Remove the parallel cable, and inspect both ends of the cable for damage. Reconnect the parallel cable, making sure that the connections are tight. Make sure that the printer is directly connected to the computer. Remove any switchboxes, tape backup drives, security keys, or any other devices that are attached between the parallel port on the computer and the printer. These devices can sometimes interfere with communication between the computer and the printer. Restart the printer and the computer.

**Missing graphics or text, or blank pages**

- Make sure that your file does not contain blank pages.

- The sealing tape might still be in the print cartridge. Remove the print cartridge, and pull the tab on the end of the cartridge until the entire length of the tape is removed. Reinstall the print cartridge. See Changing the print cartridge for instructions. To check the printer, print a demo page by pressing the Go button.

- The graphic settings in the printer Properties might not be correct for the type of job that you are printing. Try a different graphic setting in the printer Properties. See Printer Properties (driver) for more information.

- Clean the printer, particularly the contacts between the print cartridge and the power supply.
Page format is different than on another printer

If you used an older or different printer driver (printer software) to create the document or the printer Properties settings in the software are different, the page format might change when you try to print using your new printer driver or settings. To help eliminate this problem, try the following:

- Create documents and print them using the same printer driver (printer software) and printer Properties settings regardless of which HP LaserJet printer you use to print them.
- Change the resolution, paper size, font settings, and other settings. See Printer Properties (driver) for more information.

Graphics quality

The graphics settings might be unsuitable for your print job. Check the graphic settings, such as resolution, in the printer Properties and adjust them as necessary. See Printer Properties (driver) for more information.

Note

Some resolution may be lost when converting from one graphics format to another.

Return to Finding the solution.
## Printer software problems

<table>
<thead>
<tr>
<th>Problem</th>
<th>Solution</th>
</tr>
</thead>
</table>
| A printer driver for the HP LaserJet 1160 or HP LaserJet 1320 printer is not visible in the Printer folder | ● Reinstall the printer software. In the Windows task bar, click Start, select Programs, select HP LaserJet 1160 or HP LaserJet 1320, and click Uninstall. Turn the printer off. Install the printer software from the CD-ROM. Turn the printer back on.  
**Note**  
Close any applications that are running. To close an application that has an icon in the system tray, right-click the icon, and select Close or Disable.  
● Try plugging the USB cable into a different USB port on the PC.  
● If you are trying to print to a shared printer, in the Windows task bar, click Start, select Settings, and select Printers. Double-click the Add Printer icon. Follow the instructions in the Add Printer Wizard. |
| An error message was displayed during the software installation | ● Reinstall the printer software. In the Windows task bar, click Start, select Programs, select HP LaserJet 1160 or HP LaserJet 1320, and click Uninstall. Turn the printer off. Install the printer software from the CD-ROM. Turn the printer back on.  
**Note**  
Close any applications that are running. To close an application that has an icon in the task bar, right-click the icon, and select Close or Disable.  
● Check the amount of free space on the drive where you are installing the printer software. If necessary, free up as much space as you can, and reinstall the printer software.  
● If necessary, run the Disk Defragmenter, and reinstall the printer software. |
| The printer is in Ready mode, but nothing prints | ● Print a Configuration page from the control panel of the printer, and verify the printer functionality.  
● Verify that all of the cables are properly seated and within specifications. This includes the USB, parallel, network, and power cables. Try a new cable. |

Return to Finding the solution.
This section provides information about identifying and correcting print defects.

### Light print or faded

- The toner supply is low. See [Redistributing toner](#) for more information.
- The media might not meet Hewlett-Packard's media specifications (for example, the media is too moist or too rough). See [Printer media specifications](#) for more information.
- If the whole page is light, the print density adjustment is too light or EconoMode might be turned on. Adjust the print density, and disable EconoMode in the printer Properties. See [Saving toner](#) for more information.

### Toner specks

- The media might not meet Hewlett-Packard's media specifications (for example, the media is too moist or too rough). See [Printer media specifications](#) for more information.
- The printer might need to be cleaned. See [Cleaning the printer](#) or [Cleaning the printer media path](#) for instructions.
## Dropouts

- A single sheet of media might be defective. Try reprinting the job.
- The media's moisture content is uneven or the media has moist spots on its surface. Try printing with new media. See [Printer media specifications](#) for more information.
- The media lot is bad. The manufacturing processes can cause some areas to reject toner. Try a different type or brand of media.
- The print cartridge might be defective. See [Changing the print cartridge](#) for more information.

**Note**

If these steps do not correct the problem, contact an HP-authorized dealer or service representative.

## Vertical lines

The photosensitive drum inside the print cartridge has probably been scratched. Install a new HP print cartridge. See [Changing the print cartridge](#) for instructions.

## Gray background

- Make sure that the single-sheet priority input slot (Tray 1) is in place.
- Decrease the print density setting through HP Toolbox or the embedded Web server. This decreases the amount of background shading. See [Using the hp toolbox](#).
- Change the media to a lighter basis weight. See [Printer media specifications](#) for more information.
- Check the printer's environment. Very dry (low humidity) conditions can increase the amount of background shading.
- Install a new HP print cartridge. See [Changing the print cartridge](#) for instructions.
Toner smear

- If toner smears appear on the leading edge of the media, the media guides might be dirty. Wipe the media guides with a dry, lint-free cloth. See Cleaning the printer for more information.
- Check the media type and quality.
- Try installing a new HP print cartridge. See Changing the print cartridge for instructions.
- The fuser temperature might be too low. In your printer driver, make sure the appropriate media type is selected.

Loose toner

- Clean the inside of the printer. See Cleaning the printer for instructions.
- Check the media type and quality. See Printer media specifications for more information.
- Try installing a new HP print cartridge. See Changing the print cartridge for instructions.
- In your printer driver, make sure the appropriate media type is selected.
- Plug the printer directly into an AC outlet instead of into a power strip.

Vertical repetitive defects

- The print cartridge might be damaged. If a repetitive mark occurs at the same spot on the page, install a new HP print cartridge. See Changing the print cartridge for instructions.
- The internal parts might have toner on them. See Cleaning the printer for more information. If the defects occur on the back of the page, the problem will probably correct itself after a few more printed pages.
- In your printer driver, make sure the appropriate media type is selected.
Misformed characters

- If characters are improperly formed, producing hollow images, the media stock might be too slick. Try a different media. See Printer media specifications for more information.
- If characters are improperly formed, producing a wavy effect, the printer might need service. Print a configuration page. If the characters are improperly formed, contact an HP-authorized dealer or service representative. See How to contact HP for more information.

Page skew

- Make sure that the media is loaded correctly and the media guides are not too tight or too loose against the media stack. See Loading media into the input trays for more information.
- The input bin might be too full. See Loading media into the input trays for more information.
- Check the media type and quality. See Printer media specifications for more information.

Curl or wave

- Check the media type and quality. Both high temperature and humidity cause media to curl. See Printer media specifications for more information.
- The media might have been in the input tray too long. Turn over the stack of media in the tray. Also, try rotating the media 180° in the input tray.
- Open the straight-through output door and try printing straight through. See Media paths for more information.
- The fuser temperature might be too high. In your printer driver, make sure the appropriate media type is selected. If the problem persists, select a media type that uses a lower fuser temperature, such as transparencies or light media.
**Wrinkles or creases**

- Make sure that media is loaded properly. See [Loading media into the input trays](#) for more information.
- Check the media type and quality. See [Printer media specifications](#) for more information.
- Open the straight-through output door and try printing straight through. See [Media paths](#) for more information.
- Turn over the stack of media in the tray. Also, try rotating the media 180° in the input tray.
- For envelopes, this can be caused by air pockets inside the envelope. Remove the envelope, flatten the envelope, and try printing again.

---

**Toner scatter outline**

- If large amounts of toner have scattered around the characters, the media might be resisting the toner. (A small amount of toner scatter is normal for laser printing.) Try a different media type. See [Printer media specifications](#) for more information.
- Turn over the stack of media in the tray.
- Use media designed for laser printers. See [Printer media specifications](#) for more information.

---

Return to [Finding the solution](#).
Clearing jams

Occasionally, media becomes jammed during a print job. You are notified of a media jam by an error in the software and the printer control panel lights. See Status light patterns for more information.

The following are some of the causes of media jams:

- The input trays are loaded improperly or too full. See Loading media into the input trays for more information.

**Note**

When you add new media, always remove all of the media from the input tray and straighten the stack of new media. This helps prevent multiple sheets of media from feeding through the printer at one time, reducing media jams.

- The media does not meet HP specifications. See Printer media specifications for more information.

- The printer might need to be cleaned to remove paper dust and other particles from the paper path. See Cleaning the printer for instructions.

There might be loose toner in the printer after a media jam. This toner clears up after a few sheets print.

**CAUTION**

Media jams might result in loose toner on the page. If you get any toner on your clothes, wash them in cold water. *Hot water will permanently set the toner into the fabric.*

Return to Finding the solution.

**Print cartridge area**

To clear a jam in the print cartridge area, perform the following steps:

**CAUTION**

Do not use sharp objects, such as tweezers or needlenose pliers, to remove jams. Damage caused by sharp objects will not be covered by the warranty.

1. Open the print cartridge door, and remove the print cartridge.

**CAUTION**

To prevent damage to the print cartridge, minimize its exposure to direct light.
2. Open the straight-through output door.

3. Rotate the green pressure release levers downward.

4. With both hands, grasp the side of the media that is most visible (this includes the middle), and carefully pull it free from the printer.
5. Replace the print cartridge, and close the print cartridge door.

Input trays

To clear a jam in the input trays, perform the following steps:

**CAUTION**

Do not use sharp objects, such as tweezers or needlenose pliers, to remove jams. Damage caused by sharp objects will not be covered by the warranty.

1. Open the straight-through output door.
2. Rotate the green pressure release levers downward.

3. Open the single-sheet priority input slot (Tray 1) door.

4. With both hands, grasp the side of the media that is most visible (this includes the middle), and carefully pull it free from the printer.
5. Close the single-sheet priority input slot (Tray 1) door.

6. Open the main input tray (Tray 2).

7. With both hands, grasp the side of the media that is most visible (this includes the middle), and carefully pull it free from the printer.
8. If no media is visible, open the print cartridge door, remove the print cartridge, and rotate the upper media guide. Carefully pull the media up and out of the printer.

9. Close the main input tray (Tray 2).

Output bin

CAUTION
Do not use sharp objects, such as tweezers or needlenose pliers, to remove jams. Damage caused by sharp objects will not be covered by the warranty.
With both hands, grasp the side of the media that is most visible (this includes the middle), and carefully pull it free from the printer.

Straight-through output path
To clear a jam in the straight-through output path, perform the following steps:

**CAUTION**
Do not use sharp objects, such as tweezers or needlenose pliers, to remove jams. Damage caused by sharp objects will not be covered by the warranty.

1. Open the straight-through output door.
2. Rotate the green pressure release levers downward.

3. With both hands, grasp the side of the media that is most visible (this includes the middle), and carefully pull it free from the printer.

*Note* If you cannot grasp the media with your hands, perform the procedure in Print cartridge area.

4. Close the straight-through output door.

*Note* The pressure release levers automatically close when you close the straight-through output door.
Automatic two-sided printing (duplexing) path

To clear a jam in the automatic two-sided path, perform the following steps:

**CAUTION**

Do not use sharp objects, such as tweezers or needle-nose pliers, to remove jams. Damage caused by sharp objects will not be covered by the warranty.

1. Open the straight-through output door.

2. Rotate the green pressure release levers downward.
3. Remove the main input tray (Tray 2).

4. Push down on the green lever on the automatic two-sided path door on the front of the printer.

5. With both hands, grasp the side of the media that is most visible (this includes the middle), and carefully pull it free from the printer.
6. Close the automatic two-sided path door.

7. Reinsert the main input tray (Tray 2).

8. Open the automatic two-sided path door on the back of the printer.
9. With both hands, grasp the side of the media that is most visible (this includes the middle), and carefully pull it free from the printer.

10. Close the automatic two-sided path door.
Wired network setup problemsolving

If the computer is unable to discover the HP LaserJet 1320n, HP LaserJet 1320tn, or HP LaserJet 1320nw printer, perform the following steps:

1. Check the cables to ensure that they are properly connected. Check all of the following connections:
   - Power cables
   - Cables between the printer and the hub or switch
   - Cables between the hub or switch and the computer
   - Cables to and from the modem or Internet connection, if applicable

2. To make sure that the computer's network connections are working properly (Windows only), perform the following steps:
   - On the Windows desktop, double-click My Network Places or Network Neighborhood.
   - Click the Entire Network link.
   - Click the Entire Contents link.
   - Double-click one of the network icons, and make sure that some devices are listed.

3. To verify that the network connection is active, perform the following steps:
   - Check the network light on the network (RJ-45) connector on the back of the printer.
   - If one of the lights is on solid, the printer is connected to the network.
   - If both network lights are off, check the cable connections from the printer to the gateway, switch, or hub to ensure that the connections are secure.
   - If the connections are secure, turn off the power to the printer for at least 10 seconds, and then turn on the power to the printer.
4. To print a network configuration page, press the network Reset button located on the back of the printer.

- On the Network Configuration page, check to see if a non-zero IP address is assigned to the printer.
- If the Network Configuration page does not have a valid, non-zero IP address, reset the Internal HP Jetdirect print server to the factory defaults. To cold reset the Internal HP Jetdirect print server, turn off the printer. While pressing the Reset button on the back of the printer, turn on the printer. Continue to press the Reset button until the printer is in the Ready state (from 5 to 30 seconds).
- Two minutes after the printer reaches the Ready state, print another Network Configuration page, and check to see if a valid IP address is assigned to the printer.
- If the IP address is still zeros, Contact HP support.
This appendix provides information on the following topics:

- Environmental specifications
- Acoustic emissions
- Electrical specifications
- Physical specifications
- Printer capacities and ratings
- Memory specifications
- Port availability
## Environmental specifications

<table>
<thead>
<tr>
<th>Operating environment</th>
<th>Printer plugged into an AC outlet:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>● Temperature: 10° C to 32.5° C (50° F to 90.5° F)</td>
</tr>
<tr>
<td></td>
<td>● Humidity: 20 to 80 percent (no condensation)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Storage environment</th>
<th>Printer unplugged from an AC outlet:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>● Temperature: 0° C to 40° C (32° F to 104° F)</td>
</tr>
<tr>
<td></td>
<td>● Humidity: 10 to 80 percent (no condensation)</td>
</tr>
</tbody>
</table>

**Note**

Acoustic emissions

Declared per ISO 9296

**HP LaserJet 1160 printer**

<table>
<thead>
<tr>
<th>Sound power level</th>
<th>Printing (20 ppm): $L_{WA} = 6.2$ Bels A and 62 dB (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ready (PowerSave): essentially inaudible</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sound pressure level bystander position</th>
<th>Printing (20 ppm): $L_{PA} = 48$ dB (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ready (PowerSave): essentially inaudible</td>
</tr>
</tbody>
</table>

**HP LaserJet 1320 printer**

<table>
<thead>
<tr>
<th>Sound power level</th>
<th>Printing (22 ppm): $L_{WA} = 6.2$ Bels A and 62 dB (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ready (PowerSave): essentially inaudible</td>
</tr>
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</table>

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<tr>
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</thead>
<tbody>
<tr>
<td></td>
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</tr>
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</table>

**HP LaserJet 1320n printer**

<table>
<thead>
<tr>
<th>Sound power level</th>
<th>Printing (22 ppm): $L_{WA} = 6.2$ Bels A and 62 dB (A)</th>
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</thead>
<tbody>
<tr>
<td></td>
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</thead>
<tbody>
<tr>
<td></td>
<td>Ready (PowerSave): essentially inaudible</td>
</tr>
</tbody>
</table>

**Note**


**Note**

Configuration tested: HP LaserJet 1320 base unit, standard tray, A4 paper, and simplex continuous print.
## Electrical specifications

**WARNING!** Power requirements are based on the country/region where the printer is sold. Do not convert operating voltages. Doing so might damage the printer and void the product warranty.

### HP LaserJet 1160 printer

<table>
<thead>
<tr>
<th>Power requirements (110)</th>
<th>110-127v (+/-10%), 50/60 Hz (+/-2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power requirements (220)</td>
<td>220v-240v (+/-10%), 50/60 Hz (+/-2 Hz)</td>
</tr>
<tr>
<td>Power consumption</td>
<td></td>
</tr>
<tr>
<td></td>
<td>● During printing (20 ppm): 340 watts (average)</td>
</tr>
<tr>
<td></td>
<td>● During Ready (Standby) and PowerSave*: 4 Watts</td>
</tr>
<tr>
<td></td>
<td>* Instant on fuser technology</td>
</tr>
<tr>
<td></td>
<td>● Off: &lt;1 watts</td>
</tr>
<tr>
<td>Minimum recommended circuit capacity for typical product</td>
<td>● 4.5 amps at 115 volts</td>
</tr>
<tr>
<td></td>
<td>● 2.6 amps at 230 volts</td>
</tr>
</tbody>
</table>

### HP LaserJet 1320 printer

<table>
<thead>
<tr>
<th>Power requirements (110)</th>
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<td></td>
<td>● During printing (22 ppm): 340 watts (average)</td>
</tr>
<tr>
<td></td>
<td>● During Ready (Standby) and PowerSave*: 6 Watts</td>
</tr>
<tr>
<td></td>
<td>* Instant on fuser technology</td>
</tr>
<tr>
<td></td>
<td>● Off: &lt;1 watts</td>
</tr>
<tr>
<td>Minimum recommended circuit capacity for typical product</td>
<td>● 4.5 amps at 115 volts</td>
</tr>
<tr>
<td></td>
<td>● 2.6 amps at 230 volts</td>
</tr>
</tbody>
</table>

### HP LaserJet 1320n printer

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<thead>
<tr>
<th>Power requirements (110)</th>
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<tbody>
<tr>
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<td></td>
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<tr>
<td></td>
<td>● Off: &lt;1 watts</td>
</tr>
<tr>
<td>Minimum recommended circuit capacity for typical product</td>
<td>● 4.5 amps at 115 volts</td>
</tr>
<tr>
<td></td>
<td>● 2.6 amps at 230 volts</td>
</tr>
</tbody>
</table>
### HP LaserJet 1320nw printer

<table>
<thead>
<tr>
<th>Power requirements (110)</th>
<th>110-127v (+/-10%), 50/60 Hz (+/-2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power requirements (220)</td>
<td>220v-240v (+/-10%), 50/60 Hz (+/-2 Hz)</td>
</tr>
<tr>
<td>Power consumption</td>
<td></td>
</tr>
<tr>
<td>● During printing (22 ppm): 345 watts (average)</td>
<td></td>
</tr>
<tr>
<td>● During Ready (Standby) and PowerSave*: 6 Watts</td>
<td></td>
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</tr>
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<td></td>
</tr>
<tr>
<td>● 2.6 amps at 230 volts</td>
<td></td>
</tr>
</tbody>
</table>

---

**Note**

**Note**
The power reported is the highest value measured for monochrome printing using all standard voltages.

**Note**
The default time from Ready mode to PowerSave mode and the recovery time from PowerSave mode to the start of printing is negligible (less than 10 seconds) because of the instant on fusing.

**Note**
The heat dissipation in Ready mode is 20 BTU/hour.
## Physical specifications

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Width: 350 mm (16.8 inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Depth: 352 mm (13.9 inches)</td>
</tr>
<tr>
<td></td>
<td>Height: 256 mm (10.0 inches)</td>
</tr>
<tr>
<td>Weight (2,500-page cartridge installed)</td>
<td>HP LaserJet 1160 printer: 10.7 kg (23.6 lb)</td>
</tr>
<tr>
<td></td>
<td>HP LaserJet 1320 series printer: 11.3 kg (24.9 lb)</td>
</tr>
</tbody>
</table>

**Note**  
Values are current as of April 1, 2004. Values are subject to change without notice. See http://www.hp.com/support/lj1160/ or http://www.hp.com/support/lj1320/ for current information.
## Printer capacities and ratings

<table>
<thead>
<tr>
<th>Print speed</th>
<th>HP LaserJet 1160 printer:</th>
</tr>
</thead>
<tbody>
<tr>
<td>● 20 ppm (Letter), 19 ppm (A4)</td>
<td></td>
</tr>
<tr>
<td>● First page out in as low as 8.5 seconds</td>
<td></td>
</tr>
<tr>
<td>HP LaserJet 1320 series printer:</td>
<td></td>
</tr>
<tr>
<td>● 22 ppm (Letter), 21 ppm (A4)</td>
<td></td>
</tr>
<tr>
<td>● First page out in as low as 8.5 seconds</td>
<td></td>
</tr>
</tbody>
</table>

| Main input tray (Tray 2) capacity | 250 sheets of regular weight 75 g/m² (20 lb) paper |
| Single-sheet priority input slot (Tray 1) capacity | 1 sheet of paper up to 163 g/m² (43 lb) paper or 1 envelope |
| Optional input tray (Tray 3) capacity (HP LaserJet 1320 series printer or Q2485A) | 250 sheets of regular weight 75 g/m² (20 lb) paper |
| Top (face down) output bin capacity | 125 sheets of regular weight 75 g/m² (20 lb) paper |
| Minimum paper size | 76 by 127 mm (3 by 5 inches) |
| Maximum paper size | 216 by 356 mm (8.5 by 14 inches) |
| Media weight | Output bin: 60 to 105 g/m² (16 to 28 lbs) |
| | Straight through media path: 60 to 163 g/m² (16 to 43 lbs) |
| Base memory | 16 MB of RAM |
| Upgrade memory expansion | One DIMM slot available for a 16, 32, 64, or 128 MB RAM DIMM |

| Print resolution | 1200 dpi: (HP LaserJet 1320 series printer only) This setting uses ProRes 1200 to provide fine-line detail at 1200 x 1200 dpi. |
| | 1200 effective dpi: This setting provides 1200 dpi effective output quality using FastRes 1200. |
| | 600 dpi: This setting provides 600 x 600 dpi output with Resolution Enhancement technology (RET) for improved text. |

| Duty cycle | 10,000 single-sided pages per month (maximum) |
| | 1,000 single-sided pages per month (average) |

| PCL | PCL 5e, PCL 6 |
| PS | PostScript Level 2 emulation |
Memory specifications

<table>
<thead>
<tr>
<th>Base memory</th>
<th>16 MB RAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upgrade memory expansion</td>
<td>100-pin, 66 MHz minimum speed</td>
</tr>
</tbody>
</table>
## Port availability

<table>
<thead>
<tr>
<th>Port Type</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>USB</td>
<td>Compatible with USB 2.0 specifications</td>
</tr>
<tr>
<td>Network</td>
<td>RJ-45, Ethernet 10/100</td>
</tr>
<tr>
<td>Wireless</td>
<td>802.11b/g</td>
</tr>
<tr>
<td>Parallel</td>
<td>● IEEE-1284B receptacle</td>
</tr>
<tr>
<td></td>
<td>● Set host computer to ECP</td>
</tr>
</tbody>
</table>

(HP LaserJet 1320n, HP LaserJet 1320tn, and HP LaserJet 1320nw printers only)

(HP LaserJet 1320nw printer only)

(HP LaserJet 1160 and HP LaserJet 1320 printers only)
FCC compliance

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

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

Note

Any changes or modifications to the printer that are not expressly approved by Hewlett-Packard could void the user's authority to operate this equipment.

Use of a shielded interface cable is required to comply with the Class B limits of Part 15 of FCC rules.
Declaration of Conformity statements

Declaration of Conformity
according to ISO/IEC Guide 22 and EN 45014

Manufacturer's Name: Hewlett-Packard Company
Manufacturer's Address: 11311 Chinden Boulevard
Boise, Idaho 83714-1021, USA

declares that the product

Product Name: HP LaserJet 1160
Regulatory Model 3): BOISB-0402-02
Product Options: ALL

conforms to the following Product Specifications:

GB4943-2001

EN 61000-3-2:2000
EN 61000-3-3:1995 / A1
EN 55024:1998
FCC Title 47 CFR, Part 15 Class B2) / ICES-003, Issue 3

Supplementary Information:
The product herewith complies with the requirements of the EMC Directive 89/336/EEC and the Low Voltage Directive 73/23/EEC, and carries
the CE-marking accordingly.

1) The product was tested in a typical configuration with Hewlett-Packard Personal Computer Systems.
2) This Device complies with Part 15 of the FCC Rules. Operation is subject to the following two Conditions: (1) this device may not cause
harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
3) For regulatory purposes, this product is assigned a Regulatory model number. This number should not be confused with the product name
or the product number(s).

Boise, Idaho 83714, USA
30 April 2004

For Regulatory Topics ONLY, contact:

Australia Contact: Product Regulations Manager, Hewlett-Packard Australia Ltd., 31-41 Joseph Street, Blackburn, Victoria 3130, Australia

European Contact: Your Local Hewlett-Packard Sales and Service Office or Hewlett-Packard GmbH, Department HQ-TRE / Standards
Europe, Herrenberger Straße 140, Böblingen, D-71034, Germany (FAX: +49-7031-14-3143)

USA Contact: Product Regulations Manager, Hewlett-Packard Company, PO Box 15, Mail Stop 160, Boise, Idaho 83707-0015, USA (Phone: 208-396-6000)
Declaration of Conformity
according to ISO/IEC Guide 22 and EN 45014

Manufacturer's Name: Hewlett-Packard Company
Manufacturer's Address: 11311 Chinden Boulevard
                        Boise, Idaho 83714-1021, USA

declares that the product

Regulatory Model 3): BOISB-0402-00/BOISB-0402-01
Including
Q5931A - Optional 250-Sheet Input Tray

Product Options: ALL

conforms to the following Product Specifications:

       GB4943-2001

     EN 61000-3-2:2000
     EN 61000-3-3:1995 / A1
     EN 55024:1998
     FCC Title 47 CFR, Part 15 Class B2) / ICES-003, Issue 3

Supplementary Information:

1) The product was tested in a typical configuration with Hewlett-Packard Personal Computer Systems.

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

3) For regulatory purposes, this product is assigned a Regulatory model number. This number should not be confused with the product name or the product number(s).

4) Regulatory information regarding radio module approvals for the HP LaserJet 1320nw (Regulatory Model Number: BOISB-0402-01) can be found in the wireless user guide for that product.

Boise, Idaho 83714, USA
30 April 2004

For Regulatory Topics ONLY, contact:
Australia Contact: Product Regulations Manager, Hewlett-Packard Australia Ltd., 31-41 Joseph Street, Blackburn, Victoria 3130, Australia
European Contact: Your Local Hewlett-Packard Sales and Service Office or Hewlett-Packard GmbH, Department HQ-TRE / Standards Europe, Herrenberger Straße 140, Böblingen, D-71034, Germany (FAX: +49-7031-14-3143)
USA Contact: Product Regulations Manager, Hewlett-Packard Company, PO Box 15, Mail Stop 160, Boise, Idaho 83707-0015, USA (Phone: 208-396-6000)
Regulatory statements

Laser safety statement

The Center for Devices and Radiological Health (CDRH) of the U.S. Food and Drug Administration has implemented regulations for laser products manufactured since August 1, 1976. Compliance is mandatory for products marketed in the United States. The printer is certified as a "Class 1" laser product under the U.S. Department of Health and Human Services (DHHS) Radiation Performance Standard according to the Radiation Control for Health and Safety Act of 1968.

Since radiation emitted inside the printer is completely confined within protective housings and external covers, the laser beam cannot escape during any phase of normal user operation.

**WARNING!**

Using controls, making adjustments, or performing procedures other than those specified in this user guide could result in exposure to hazardous radiation.

Canadian DOC regulations

Complies with Canadian EMC Class B requirements.

«Conforme à la classe B des normes canadiennes de compatibilité électromagnétiques. «CEM» »

Korean EMI statement

사용시 안내문 (A급 기기)

이 기기는 업무용으로 전자파적합성가격을 받은 기기이오니, 만약 잘못 구입하였을 때에는 구입
한 곳에서 비업무용으로 교환하시기 바랍니다.
Laser statement for Finland

LASERTURVALLISUUS
LUOKAN 1 LASERLAITE
KLASS 1 LASER APPARAT
HP LaserJet 1160, HP LaserJet 1320, HP LaserJet 1320n, HP LaserJet 1320tn,
HP LaserJet 1320nw -laserkirjoitin on käyttäjän kannalta turvallinen luokan 1 laserlaite.
Normaalissa käytössä kirjoittimen suojakoteloointi estää lasersäteen pääsyn laitteen ulkopuolelle.
Laitteen turvallisuusluokka on määritetty standardin EN 60825-1 (1994) mukaisesti.

VAROITUS!
Laitteen käyttäminen muulla kuin käyttöohjeessa mainitulla tavalla saattaa altistaa käyttäjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

WARNING!
Om apparaten används på annat sätt än i bruksanvisning specificerats, kan användaren utsättas för osynlig laserstrålning, som överskrider gränsen för laserklass 1.

HUOLTO
HP LaserJet 1160, HP LaserJet 1320, HP LaserJet 1320n, HP LaserJet 1320tn,
HP LaserJet 1320nw -kirjoittimen sisällä ei ole käyttäjän huollettavissa olevia kohteita.
Laitteen saa avata ja huoltaa ainoastaan sen huoltamiseen koulutettu henkilö. Tällaiseksi huoltotoimenpiteeksi ei katsota väriainekasetin vaihtamista, paperiradan puhdistusta tai muita käyttäjän käsikirjassa lueteltuja, käyttäjän tehtäväksi tarkoitettuja ylläpitotoimia, jotka voidaan suorittaa ilman erikoistyökaluja.

VARO!
Mikäli kirjoittimen suojakotelo avataan, olet alttiina näkymättömälle lasersäteilylle laitteen ollessa toiminnassa. Älä katso säteeseen.

WARNING!
Om laserprinterens skyddshölje öppnas då apparaten är i funktion, utsättas användaren för osynlig laserstrålning. Betrakta ej strålen.

Tiedot laitteessa käytettävän laserdiodin säteilyominaisuuksista:

Aallonpituus 785-800 nm

Teho 5 mW

Luokan 3B laser
Protecting the environment
Hewlett-Packard Company is committed to providing quality products in an environmentally sound manner. This product has been designed with several attributes to minimize the impact on our environment.

Ozone production
This product generates no appreciable ozone gas (O₃).

Energy consumption
Energy usage drops significantly while in PowerSave mode, which saves money without affecting the high performance of this product. This product qualifies for Energy Star, which is a voluntary program to encourage the development of energy-efficient office products.

Energy Star® is a U.S. registered service mark of the U.S. EPA. As an Energy Star® partner, Hewlett-Packard Company has determined that this product meets Energy Star® guidelines for energy efficiency. For more information, see http://www.energystar.gov/.

Toner consumption
EconoMode uses significantly less toner, which might extend the life of the print cartridge.

Paper use
This product's automatic/manual two-sided printing (duplexing) and N-up printing (multiple pages printed on one page) features can reduce paper usage and the resulting demands on natural resources.

Plastics
Plastic parts over 25 grams (0.9 oz) are marked according to international standards that enhance the ability to identify plastics for recycling purposes at the end of the product's life.
HP LaserJet printing supplies

In many countries/regions, this product's printing supplies (such as print cartridge, drum, and fuser) can be returned to Hewlett-Packard through the HP printing supplies returns and recycling program. This easy-to-use, free takeback program is available in over 48 countries/regions. Multilingual program information and instructions are included in every new HP print cartridge and consumables package.

HP printing supplies returns and recycling program information

Since 1990, the HP printing supplies returns and recycling program has collected millions of used print cartridges that otherwise might have been discarded in the world's landfills. The HP LaserJet print cartridges and consumables are collected and bulk-shipped to our resource and recovery partners who disassemble the print cartridge. After a thorough quality inspection, selected parts are reclaimed for use in new print cartridges. Remaining materials are separated and converted into raw materials for use by other industries to make a variety of useful products.

U.S. recycling returns

For a more environmentally responsible return of used print cartridges and consumables, Hewlett-Packard encourages you to use bulk returns. Simply bundle two or more print cartridges together and use the single, prepaid, pre-addressed label that is supplied in the package. For more information in the U.S., call (800) 340-2445 or visit the HP LaserJet supplies Web site at http://www.hp.com/recycle.

Non-U.S. recycling returns

Non-U.S. customers should call the local HP sales and service office or visit the http://www.hp.com/recycle website for more information regarding availability of the HP printing supplies returns and recycle program.

Paper

This printer is suited for the use of recycled papers when the paper meets the guidelines in the HP LaserJet printer family print media guide. See Ordering supplies and accessories for ordering information. This product is suitable for the use of recycled paper according to DIN 19309.

Material restrictions

This product does not contain added mercury (except lamps containing less than 10 mg (2.2 lb)).

This product contains lead in solder that may require handling at end-of-life.

This product does not contain batteries.
For more information

For more information on the following HP environmental programs, see http://www.hp.com/go/environment/.

- Product environmental profile sheet for this and many related HP products
- HP's commitment to the environment
- HP's environmental management system
- HP's end-of-life product return and recycling program
- Material safety data sheets
Material safety data sheet

## Hewlett-Packard limited warranty statement

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<td>HP LaserJet 1160 and HP LaserJet 1320 series printers</td>
<td>One year from date of purchase</td>
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HP warrants to you, the end-user customer, that HP hardware and accessories will be free from defects in materials and workmanship after the date of purchase, for the period specified above. If HP receives notice of such defects during the warranty period, HP will, at its option, either repair or replace products which prove to be defective. Replacement products may be either new or equivalent in performance to new.

HP warrants to you that HP software will not fail to execute its programming instructions after the date of purchase, for the period specified above, due to defects in material and workmanship when properly installed and used. If HP receives notice of such defects during the warranty period, HP will replace software which does not execute its programming instructions due to such defects.

HP does not warrant that the operation of HP products will be uninterrupted or error free. If HP is unable, within a reasonable time, to repair or replace any product to a condition as warranted, you will be entitled to a refund of the purchase price upon prompt return of the product.

HP products may contain remanufactured parts equivalent to new in performance or may have been subject to incidental use.

Warranty does not apply to defects resulting from (a) improper or inadequate maintenance or calibration, (b) software, interfacing, parts or supplies not supplied by HP, (c) unauthorized modification or misuse, (d) operation outside of the published environmental specifications for the product, or (e) improper site preparation or maintenance.

HP’s limited warranty is valid in any country/region or locality where HP has a support presence for this product and where HP has marketed this product. The level of warranty service you receive may vary according to local standards. HP will not alter form, fit or function of the product to make it operate in a country/region for which it was never intended to function for legal or regulatory reasons. TO THE EXTENT ALLOWED BY LOCAL LAW, THE ABOVE WARRANTIES ARE EXCLUSIVE AND NO OTHER WARRANTY OR CONDITION, WHETHER WRITTEN OR ORAL, IS EXPRESSED OR IMPLIED AND HP SPECIFICALLY DISCLAIMS ANY IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY, SATISFACTORY QUALITY, AND FITNESS FOR A PARTICULAR PURPOSE. Some countries/regions, states or provinces do not allow limitations on the duration of an implied warranty, so the above limitation or exclusion might not apply to you. This warranty gives you specific legal rights and you might also have other rights that vary from country/region to country/region, state to state, or province to province.

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Limited warranty for print cartridge life

The following warranty applies to the print cartridge that came with this printer.

Note

This HP product is warranted to be free from defects in materials and workmanship. This warranty does not apply to products that (a) have been refilled, refurbished, remanufactured or tampered with in any way, (b) experience problems resulting from misuse, improper storage, or operation outside of the published environmental specifications for the printer product or (c) exhibit wear from ordinary use. To obtain warranty service, please return the product to place of purchase (with a written description of the problem and the print samples) or contact HP customer support. At HP’s option, HP will either replace products that prove to be defective or refund your purchase price. TO THE EXTENT ALLOWED BY LOCAL LAW, THE ABOVE WARRANTY IS EXCLUSIVE AND NO OTHER WARRANTY OR CONDITION, WHETHER WRITTEN OR ORAL, IS EXPRESSED OR IMPLIED AND HP SPECIFICALLY DISCLAIMS ANY IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY, SATISFACTORY QUALITY, AND FITNESS FOR A PARTICULAR PURPOSE. TO THE EXTENT ALLOWED BY LOCAL LAW, IN NO EVENT WILL HP OR ITS SUPPLIERS BE LIABLE FOR DIRECT, SPECIAL INCIDENTAL, CONSEQUENTIAL (INCLUDING LOST PROFIT OR DATA), OR OTHER DAMAGE, WHETHER BASED IN CONTRACT, TORT, OR OTHERWISE. THE WARRANTY TERMS CONTAINED IN THIS STATEMENT, EXCEPT TO THE EXTENT LAWFULLY PERMITTED, DO NOT EXCLUDE, RESTRICT OR MODIFY AND ARE IN ADDITION TO THE MANDATORY STATUTORY RIGHTS APPLICABLE TO THE SALE OF THIS PRODUCT TO YOU.
This appendix provides information on the following topics:

- Ordering supplies and accessories
- 10/100 networking and wireless print servers
- Using HP print cartridges
- DIMMs (memory or font)
You can increase the printer's capabilities with optional accessories and supplies. Use accessories and supplies specifically designed for the HP LaserJet 1160 and HP LaserJet 1320 series printers to ensure optimum performance.

The HP LaserJet 1320 series printer features Smart Printing Supplies. When you print a Configuration page by pressing and holding the Go button for 5 seconds, a Supplies Status page prints after the Configuration page. The Supplies Status page has information on the amount of toner remaining in the print cartridge, part numbers for ordering supplies, and whether the installed print cartridge is a genuine HP supply item.

### Ordering information

<table>
<thead>
<tr>
<th>Item</th>
<th>Description or use</th>
<th>Order number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Printing supplies</td>
<td>HP Multipurpose paper; HP brand paper for a variety of uses (1 box of 10 reams, 500 sheets each). To order a sample, in the U.S., call 1-800-471-4701.</td>
<td>HPM1120</td>
</tr>
<tr>
<td>HP LaserJet paper</td>
<td>Premium HP brand paper for use with HP LaserJet printers (1 box of 10 reams, 500 sheets each). To order a sample, in the U.S., call 1-800-471-4701.</td>
<td>HPJ1124</td>
</tr>
<tr>
<td>HP LaserJet transparency film</td>
<td>HP brand transparency film for use with HP LaserJet monochrome printers.</td>
<td>92296T (letter) 92296U (A4)</td>
</tr>
<tr>
<td>Print cartridge for the HP LaserJet 1160 printer</td>
<td>UltraPrecise print cartridge; Replacement print cartridge for the HP LaserJet 1160 printer.</td>
<td>Q5949A (2,500-page cartridge)</td>
</tr>
<tr>
<td>Print cartridges for the HP LaserJet 1320 series printer</td>
<td>UltraPrecise print cartridges; Replacement print cartridges for the HP LaserJet 1320 series printer.</td>
<td>Q5949A (2,500-page cartridge) Q5949X (6,000-page cartridge)</td>
</tr>
<tr>
<td>Supplementary documentation</td>
<td>HP LaserJet family print media guide; A guide to using paper and other print media with HP LaserJet printers.</td>
<td>5963-7863 Note</td>
</tr>
</tbody>
</table>

**Note**

This document can be downloaded from [http://www.hp.com/support/ljpaperguide/](http://www.hp.com/support/ljpaperguide/).
<table>
<thead>
<tr>
<th>Item</th>
<th>Description or use</th>
<th>Order number</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Replacement parts</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Media pickup roller</td>
<td>Used to pick the media from the input tray and advance it through the printer.</td>
<td>RL1-0540-000</td>
</tr>
<tr>
<td>Input tray</td>
<td>Used to hold media for the printer.</td>
<td>RM1-1292-000 (LJ1320)</td>
</tr>
<tr>
<td>Separation pad for the printer</td>
<td>Used to keep multiple sheets from feeding through the printer path.</td>
<td>RM1-1298-000</td>
</tr>
<tr>
<td><strong>Accessories</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>250-sheet paper feeder (Tray 3)</td>
<td>This is an accessory for the HP LaserJet 1320 series printer. It provides an additional 250-sheet input tray.</td>
<td>Q5931A</td>
</tr>
</tbody>
</table>
## 10/100 networking and wireless print servers

### hp LaserJet 1160 and hp LaserJet 1320 series printer

<table>
<thead>
<tr>
<th>Item and description</th>
<th>Order number</th>
</tr>
</thead>
<tbody>
<tr>
<td>HP Jetdirect 170x external print server for Ethernet (parallel port)</td>
<td>J3258B</td>
</tr>
<tr>
<td>HP Jetdirect 175x fast-Ethernet external print server (value line, USB port)</td>
<td>J6035C</td>
</tr>
<tr>
<td>Must be Version C or later.</td>
<td></td>
</tr>
<tr>
<td>HP Jetdirect 300x print server for fast Ethernet (parallel port)</td>
<td>J3263A</td>
</tr>
<tr>
<td>HP Jetdirect 500x print server for fast Ethernet (parallel port)</td>
<td>J3265A</td>
</tr>
<tr>
<td>HP Jetdirect 380x 802.11b wireless external print server (full featured, USB port)</td>
<td>J6061A</td>
</tr>
<tr>
<td>HP Jetdirect en3700 fast Ethernet print server</td>
<td>J7942A</td>
</tr>
<tr>
<td>HP Jetdirect ew2400 802.11b/g</td>
<td>J7951A</td>
</tr>
<tr>
<td>HP bt1300 Bluetooth Wireless Printer Adapter (both USB and parallel)</td>
<td>J6072A</td>
</tr>
</tbody>
</table>
Using HP print cartridges

The following sections provide information about HP print cartridges and instructions for redistributing toner and changing the print cartridge.

HP policy on non-HP print cartridges

Hewlett-Packard Company cannot recommend the use of non-HP print cartridges, either new, refilled, or remanufactured. Since they are not HP products, Hewlett-Packard cannot influence their design or control their quality. Service or repair that is required as a result of using non-HP print cartridges will not be covered under the printer warranty.

Note

The warranty does not apply to defects resulting from software, interfacing, or parts not supplied by Hewlett-Packard.

Storing print cartridges

Do not remove the print cartridge from its package until you are ready to use it.

CAUTION

To prevent damage to the print cartridge, minimize its exposure to direct light.

Some HP LaserJet print cartridge packages are stamped with an alphanumeric date code. This code represents a 30-month period beyond the date of production that facilitates efficient inventory management processes between HP and its resellers. It does not serve as an indication of toner life (shelf-life) or relate in any way to warranty terms and conditions.

Print cartridge life expectancy

The life of the print cartridge depends on the amount of toner that your print jobs require. When printing text at 5 percent coverage, the print cartridge lasts for the following average amounts:

- HP LaserJet 1160 printer: 2,500 pages
- HP LaserJet 1320 series printer: 2,500 pages (a replacement cartridge that lasts for 6,000 pages is also available)

This life expectancy assumes that you set the print density to 3 and turn EconoMode off. (These are the default settings.)

Saving toner

While in EconoMode, the printer uses less toner on each page. Selecting this option will extend the life of the print cartridge and reduce your cost per page, but it will reduce print quality. HP does not recommend the full-time use of EconoMode. See Using EconoMode (saves toner) for more information.
Redistributing toner

When toner is low, faded or light areas appear on the printed page. You might be able to temporarily improve print quality by redistributing the toner, which means that you might be able to finish the current print job before replacing the print cartridge.

1. Open the print cartridge door, and remove the print cartridge from the printer.

   ![Image of printer with open door and print cartridge removed]

   **CAUTION**
   To prevent damage, do not expose the print cartridge to light. Cover it with a sheet of paper.

2. To redistribute the toner, gently rock the print cartridge from front to back.

   ![Image of print cartridge being rocked]

   **CAUTION**
   If toner gets on your clothing, wipe it off with a dry cloth and wash the clothing in cold water. *Hot water sets toner into the fabric.*

3. Reinsert the print cartridge into the printer, and close the print cartridge door.

   ![Image of printer with closed door and print cartridge reinserted]

   If the print is still light, install a new print cartridge. See *Changing the print cartridge* for instructions.
Changing the print cartridge

1. Open the print cartridge door, and remove the old print cartridge. See the recycling information inside the print cartridge box.

   ![Image of printer with print cartridge door open]

   **CAUTION** To prevent damage, do not expose the print cartridge to light. Cover it with a piece of paper.

2. Remove the new print cartridge from the packaging.

3. Bend the tab on the left side of the cartridge to break it loose.

   ![Image of tab being bent]

4. Pull the tab until all the tape is removed from the cartridge. Put the tab in the print cartridge box to return for recycling.
5. Gently rock the toner cartridge from front to back to distribute the toner evenly inside the cartridge.

![Image of toner cartridge being rocked](image)

6. Insert the print cartridge in the printer, making sure that the print cartridge is in position. Close the print cartridge door.

![Image of printer with print cartridge inserted](image)

**CAUTION**
If toner gets on your clothing, wipe it off with a dry cloth and wash the clothing in cold water. *Hot water sets toner into the fabric.*
DIMMs (memory or font)

The following sections provide instructions for installing, testing, and removing DIMMs.

Installing a memory DIMM (HP LaserJet 1320 series printer only)

If you add memory (RAM only) to the HP LaserJet 1320 series printer, you can print more complex print jobs.

To install a DIMM, follow the instructions below:

**CAUTION**

Handling a DIMM (memory) without wearing a grounded, antistatic device might damage the DIMM. Touch any metal part of the printer or other grounded metal before touching the DIMM.

1. Turn off the power switch, and unplug all of the cables connected to the printer.

2. Open the print cartridge door. To open the left side panel, gently pull it out.
3. Locate the DIMM slot. The cam latches, located at the top and bottom, should rotate outward.

4. Remove the DIMM from the antistatic bag it came in, grasping the DIMM on the top edge.

5. Position the DIMM on the right side of the circuit board. The gold contacts should be pointing left and the cutouts should be at the top left and center left.
6. Carefully press the DIMM into the slot, making sure that it is straight and all the way in. The cam latches, located at the top and bottom, should rotate inward. To snap the cam latches into place, press the handles toward each other.

7. Close the left side panel and the print cartridge door.

8. Plug the printer back in, and turn on the power switch.
Testing the DIMM installation

To test the DIMM installation, print a configuration page, and check the Total Memory specified on the page. See Printer information pages for more information.

If all lights on the control panel are blinking, the DIMM installation was unsuccessful. Remove the DIMM and reinstall it.

Removing a DIMM

To remove a DIMM, follow the instructions below:

**CAUTION**

Handling a DIMM (memory) without wearing a grounded, antistatic device might damage the DIMM. Touch any metal part of the printer or other grounded metal before touching the DIMM.

1. Turn off the power switch, and unplug the printer.

2. Open the print cartridge door. To open the left side panel, gently pull it out.
3. To unlock the cam latches, press them outward.

4. Grasp the DIMM on the edge, gently pull straight out, and remove the DIMM from the printer.

**Note** Store the DIMM in an antistatic bag.
5. Close the left side panel and the print cartridge door.

6. Plug all of the cables connected to the printer back in, and turn on the power switch.
This appendix provides information on the following topics:

- Hardware service
- Extended warranty
- Guidelines for repacking the printer
- How to contact HP
Hardware service

If your hardware fails during the warranty period, Hewlett-Packard offers the following support options:

- **Hewlett-Packard repair services**: Hewlett-Packard will arrange to pick up the unit, repair it, and return it to you within 5 to 10 days, depending on your location.

- **Hewlett-Packard authorized service provider**: You can return the unit to a local authorized service dealer.
Extended warranty

HP Care Pack provides coverage for the HP product and all HP-supplied internal components. The hardware maintenance covers a three-year period from the date of the HP product purchase. The customer may purchase an HP Care Pack up to one year from the date of purchase of the HP product. For more information, contact the HP Customer Care Service and Support group. See Quick access to more information.

HP Care Pack options might be available after the standard warranty period has expired. Go to http://www.hpexpress-services.com/10467a/ and enter the product number to identify the HP Care Pack options that are available for your product.
Use the following guidelines when repacking the printer:

- If possible, include print samples and 5 to 10 sheets of paper or other media that did not print correctly.
- Remove and keep any DIMMs (memory) installed in the printer. See Installing a memory DIMM (HP LaserJet 1320 series printer only) for more information.

**CAUTION**
Static electricity can damage DIMMs. When handling DIMMs, wear a grounded, antistatic wrist strap.

- Remove and keep any cables, trays, and optional accessories installed in the printer.
- Remove and keep the print cartridge.

**CAUTION**
To prevent damage to the print cartridge, store the print cartridge in its original packing material, or store it so that it is not exposed to light.

- If possible, use the original shipping container and packing material. Shipping damage as a result of inadequate packing is your responsibility. If you have already disposed of the printer's packing material, contact a local mailing service for information on repacking the printer.
- Hewlett-Packard recommends that you insure the equipment for shipment.
How to contact HP

If you need to contact HP for service or support, use one of the following links:

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