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hp LaserJet 2300
2300L•2300•2300d
2300n•2300dn•2300dtn

hp LaserJet 2300 series printers

use

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1 Printer basics

Thank you for purchasing an HP LaserJet 2300 series printer. If you have not done so, see the getting started guide (*start*) provided with the printer for setup instructions.

Now that the printer is set up and ready to use, take a few moments to familiarize yourself with the printer. This section provides information about the following topics:

- "Printer configurations" on page 8
- "Printer features" on page 9
- "Printer software" on page 11
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Printer configurations

The HP LaserJet 2300 printer is available in six configurations, as described below.

The illustrations in this guide are based on the HP LaserJet 2300 printer model unless otherwise stated. To find out which HP LaserJet 2300 configuration you have, look at the label on the front of the printer.

HP LaserJet 2300L
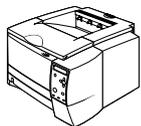
The HP LaserJet 2300L printer prints letter-size paper at speeds up to 20 pages per minute (ppm) or A4-size paper at up to 19 ppm. It comes with a built-in 250-sheet tray, both parallel and universal serial bus (USB) ports, and 32 megabytes (MB) of random-access memory (RAM). The printer is expandable, with one available enhanced input/output (EIO) slot and two dual inline memory module (DIMM) slots for adding a network print server card, fonts, and memory.

HP LaserJet 2300
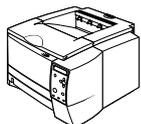
The HP LaserJet 2300 printer is the same as the HP LaserJet 2300L printer, except that it prints at speeds up to 25 ppm with letter-size paper and 24 ppm with A4-size paper.

HP LaserJet 2300d
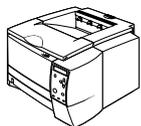
The HP LaserJet 2300d printer is the same as the HP LaserJet 2300 printer, except that the printer comes with 48 MB of RAM and a built-in duplexer (for automatically printing on both sides of paper).

HP LaserJet 2300n
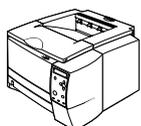
The HP LaserJet 2300n printer is the same as the HP LaserJet 2300 printer, except that it is designed for network users. It comes with a full-featured HP Jetdirect EIO print server card (for connecting to a 10/100Base-TX network) and 48 MB of RAM.

HP LaserJet 2300dn
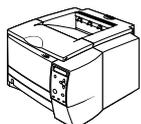
The HP LaserJet 2300dn printer is the same as the HP LaserJet 2300n printer, except that the printer comes with a built-in duplexer (for automatically printing on both sides of paper).

HP LaserJet 2300dtn
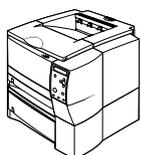
The HP LaserJet 2300dtn printer is the same as the HP LaserJet 2300dn printer, except that it also has an additional 500-sheet tray.

Printer features

The following table describes the features for the HP LaserJet 2300 series printers.

Fast print speed	• The HP LaserJet 2300L prints on letter-size paper at speeds up to 20 pages per minute (ppm) or A4-size paper at up to 19 ppm. • All other models print on letter-size paper at speeds up to 25 pages per minute (ppm) or A4-size paper at up to 24 ppm.
Built-in duplexing	• Duplex (two-sided) printing is a standard feature of the HP LaserJet 2300d printer, HP LaserJet 2300dn printer, and HP LaserJet 2300dtn printer.
Print cartridge and status features	• The 6,000-page HP Smart Print Cartridge detects and reports toner status. • No-shake design maximizes toner use. • Supplies status page provides toner gauge, page count, and information on paper sizes used. • The printer checks for authentic HP print cartridges.
Excellent print quality	• FastRes 1200 produces 1200-dpi (dots per inch) print quality for fast, high-quality printing of business text and graphics. • ProRes 1200 produces 1200-dpi printing for the best quality in line art and graphic images. • Adjustable settings optimize print quality. • The HP Smart Print Cartridge produces crisp, sharp output.
Flexible paper handling	• Use tray 1 (multipurpose) for letterhead, envelopes, labels, transparencies, custom-sized media, postcards, and heavy paper. • Use the adjustable 250-sheet tray (tray 2) for standard sizes of paper. • Use the 500-sheet tray (tray 3) for letter and A4-size paper. • Two output bins are available: select either the top output bin or the rear output bin for the most appropriate output location, depending on media type. • A straight-through paper path capability is available from tray 1 to the rear output bin. • Built-in duplexing is available for the HP LaserJet 2300d printer, HP LaserJet 2300dn printer, and HP LaserJet 2300dtn printer.
Expandability	• A 250-sheet or 500-sheet tray is available, so that you do not have to add paper as often. • One enhanced input/output (EIO) card slot is available for interface. • Three dual inline memory module (DIMM) slots are available, two for adding memory and fonts.
Printer languages and fonts	• Fast printing performance, advanced font and graphics technologies, and advanced imaging capabilities are benefits of the PCL 6 printer language. The PCL 6 technology also includes 45 scalable TrueType™ fonts and one bitmapped line printer font. • Other languages and fonts include HP PCL5e and PostScript® (PS) 3 emulation, which includes 35 built-in PS language fonts. • The printer automatically determines and switches to the appropriate language for the print job.

Interface connections and networking	● The printer includes a bidirectional ECP type-B parallel port (IEEE-1284 compliant) and a USB port (compatible with 1.1 and 2.0 low and full speed certified devices) ● The printer has an EIO slot for HP Jetdirect EIO print servers so that you can connect quickly and easily.
Enhanced memory and memory expansion	● The HP LaserJet 2300 series printers come with either 32 MB or 48 MB of memory and can be expanded to 288 or 304 MB, respectively, with available memory (DIMM) slots. Most documents can be printed using the standard amount of printer memory.
Energy savings	● The printer automatically conserves electricity by reducing power consumption when it is not printing. ● As an ENERGY STAR® partner, Hewlett-Packard Company has determined that this product meets ENERGY STAR® guidelines for energy efficiency.
Economical printing	● N-up printing and two-sided printing with the built-in duplexer save paper (the built-in duplexer is included only with the HP LaserJet 2300d printer, HP LaserJet 2300dn printer, and HP LaserJet 2300dtn printer). ● Printing in EconoMode saves toner.

Printer software

The printer comes with helpful software, including printer drivers and optional software. For easy printer setup and access to the full range of printer features, HP recommends that you install the software provided.

Check the installation notes and Readme files on the printer CD-ROM for additional software and languages (HP software is not available in all languages).

This section provides information about the following topics:

Operating systems and printer components
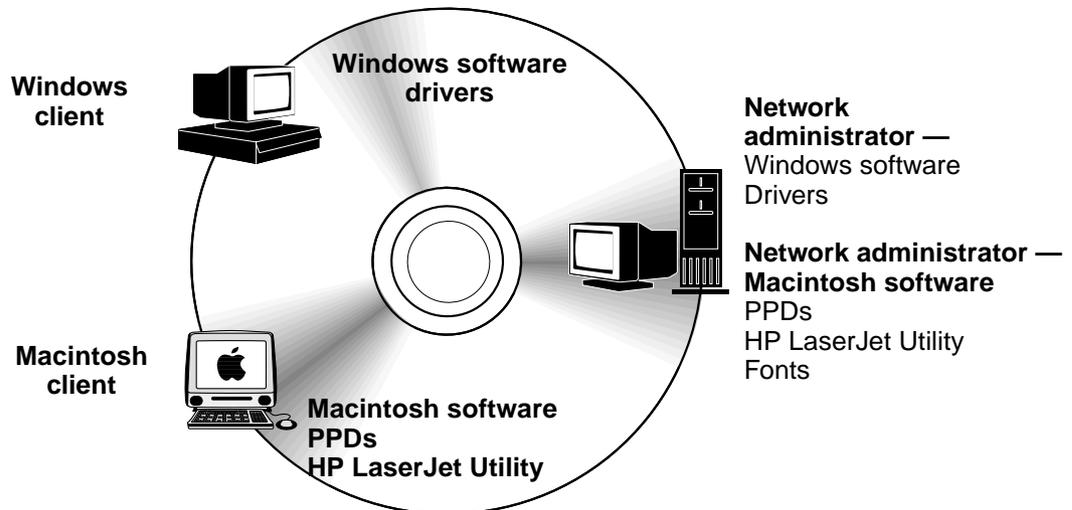
The printer CD-ROM contains the software components and drivers for end users and network administrators. The printer drivers provided on the CD-ROM must be installed to take full advantage of printer features. The other programs are recommended, but are not required for operation. Check the installation notes and Readme files on the printer CD-ROM for more information.

The CD-ROM includes software designed for end users and network administrators operating in the following environments:

● Microsoft® Windows® 95, Windows 98, and Windows Me (Millennium Edition)

● Microsoft Windows NT® 4.0

● Microsoft Windows 2000 and Windows XP

● Apple Mac OS, version 8.6 to 9.*xx*, 10.1 or later

The most recent printer drivers for all supported operating systems are available at http://www.hp.com/support/lj2300. If you do not have access to the Internet, see the support flyer that came in the printer box for information about obtaining the most recent software.

The following table lists the available software for your printer.

Software	Windows 9x/Me	Windows NT 4.0	Windows 2000/XP	Mac OS	UNIX/ Linux	OS/2
Windows Installer	x	x	x			
PCL 6	x	x	x			
PCL 5e	x	x	x			
PostScript emulation	x	x	x			
HP Web Jetadmin*		x	x		x	
Macintosh Installer				x		
Macintosh PostScript Printer Description (PPD) files				x		
IBM drivers*						x
Model scripts*					x	

*Available only on the World Wide Web.

Printer drivers

Printer drivers allow you to gain access to the printer features and allow the computer to communicate with the printer (by using a printer language). Check the installation notes and Readme files on the printer CD-ROM for additional software and languages.

The following printer drivers are included with the printer. The most recent drivers are available at http://www.hp.com/support/lj2300. Depending on the configuration of Windows-based computers, the installation program for the printer software automatically checks the computer for Internet access to obtain the latest drivers.

Operating system	PCL 6	PCL 5e	PS	PPDs[1]
Windows 95, 98, Me	x	x	x	x
Windows NT 4.0	x	x	x	x
Windows 2000, XP	x	x	x	x
Mac OS			x	x

1. PostScript Printer Description files.

You can obtain Model Scripts for UNIX® and Linux by downloading them from the Internet or by requesting them from an HP-authorized service or support provider. (See the support flyer that came in the printer box.)

OS/2 drivers are available from IBM and are packaged with OS/2.

Note   If the printer driver you want is not on the printer CD-ROM or is not listed here, check the installation notes and Readme files to see if the printer driver is supported for the printer. If it is not supported, contact the manufacturer or distributor of the program you are using and request a driver for the printer.

Select the right printer driver for your needs

Select a printer driver based on the way that you use the printer. Certain printer features are available only in the PCL 6 drivers. See the printer driver Help for availability of features.

- Use the PCL 6 driver to take full advantage of printer features. For general office printing, the PCL 6 driver is recommended to provide optimum performance and print quality.
- Use the PCL 5e driver if backward compatibility with previous PCL printer drivers or older printers is necessary.
- Use the PS driver if you are printing primarily from PostScript-specific programs such as Adobe® or Corel, for compatibility with PostScript Level 3 needs, or for PS font DIMM support.

Note   The printer automatically switches between PS and PCL printer languages.

Printer driver Help

Each printer driver has Help screens that can be activated by using either the **Help** button, the **F1** button on the computer keyboard, or a question-mark symbol in the upper right corner in the printer driver (depending on the Windows operating system used). These Help screens give detailed information about the specific driver. Printer driver Help is separate from your program Help.

Software for Macintosh computers

The HP installer provides PostScript Printer Description (PPD) files, Printer Dialog Extensions (PDEs), and the HP LaserJet Utility for use with Macintosh computers.

The embedded Web server can be used by Macintosh computers if the printer is connected to a network. See "Using the embedded Web server" on page 62 for more information.

PPDs

PPDs, in combination with the Apple LaserWriter® 8 driver for OS 8 to 9.*x.x* and PS Converter for OS X 10.1 or later, allow you to gain access to the printer features and allow the computer to communicate with the printer. An installation program for the PPDs, PDEs, and other software is provided on the CD-ROM. Use the appropriate PS driver that comes with the operating system.

PDEs

PDEs (Printer Dialog Extensions), in combination with the Apple LaserWriter Driver for OS X, allow you to gain access to the printer features and allow the computer to communicate with the printer. An installation program for the PPDs, PDEs, and other software is provided on the CD-ROM. Use the Apple LaserWriter driver that comes with the operating system.

HP LaserJet Utility

Use the HP LaserJet Utility to control features that are not available in the driver. The illustrated screens make selecting printer features by using the Macintosh computer easier than ever. Use the HP LaserJet Utility to do the following operations:

- customize the printer control panel messages
- name the printer, assign it to a zone on the network, download files and fonts, and change most of the printer settings
- set a password for the printer
- use the computer to lock out functions at the printer control panel to prevent unauthorized access (see the printer software Help)
- configure and set the printer for IP printing

Note The HP LaserJet Utility currently is not supported for OS X, but the utility is supported for the Classic environment.

Installing the printing system software

The printer comes with printing system software and printer drivers on a CD-ROM. The printing system software on the CD-ROM must be installed to take full advantage of the printer features.

If you do not have access to a CD-ROM drive, you can download the printing system software from the Internet at http://www.hp.com/lj2300.

Sample model scripts for UNIX® (HP-UX®, Sun Solaris) and Linux networks are available for download at http://www.hp.com/support.

You can download the latest software free of charge at http://www.hp.com/lj2300.

After you have followed the installation instructions and loaded the software, see "Using printer-driver features" on page 49 to get the most out of your printer.

Choose the installation procedure from the following:

- "Installing Windows printing system software for direct connections" on page 16
- "Installing Windows printing system software for networks" on page 17
- "Installing Macintosh printing system software for networks" on page 18
- "Installing Macintosh printing system software for direct connections" on page 19
- "Installing the software after the parallel or USB cable has been connected" on page 20

Installing Windows printing system software for direct connections

This section explains how to install the printing system software for Microsoft Windows 95, Windows 98, Windows Me, Windows NT 4.0, Windows 2000, and Windows XP.

When installing the printing software in a direct-connect environment, always install the software before connecting the parallel or USB cable. If the parallel or USB cable was connected before the software installation, see "Installing the software after the parallel or USB cable has been connected" on page 20

Either a parallel or USB cable can be used for the direct connection. You *cannot* connect parallel and USB cables at the same time. Use an IEEE 1284-compatible cable or a standard 2-meter USB cable.

Windows 95 and NT 4.0 do not support USB cable connections.

To install the printing system software

1   Close all software programs that are open or running.

2   Insert the printer CD-ROM into the CD-ROM drive.

    If the welcome screen does not open, start it by using the following procedure:

    a   On the **Start** menu, click **Run**.

    b   Type the following (where X is the letter of the CD-ROM drive): `X:\setup`

    c   Click **OK**.

3   When prompted, click **Install Printer** and follow the instructions on the computer screen.

4   Click **Finish** when the installation has completed.

5   Restart the computer.

6   Print a page from any software program to make sure that the software is correctly installed.

If installation fails, reinstall the software. If this fails, check the installation notes and Readme files on the printer CD-ROM or the flyer that came in the printer box, or go to http://www.hp.com/support/lj2300 for help or more information.

Installing Windows printing system software for networks

The software on the printer CD-ROM supports network installation with a Microsoft network (except Windows 3.1*x*). For network installation on other operating systems, go to http://www.hp.com/support/lj2300.

The HP Jetdirect print server that is included with the HP LaserJet 2300n, HP LaserJet 2300dn printer, or HP LaserJet 2300dtn printer has a 10/100Base-TX network port. If you need an HP Jetdirect print server with another type of network port, see "Ordering parts, accessories, and supplies" on page 116, or contact your local HP dealer (see "Contacting HP" on page 123).

The installer does not support printer installation or printer object creation on Novell servers. It supports only direct-mode network installations between Windows computers and a printer. To install your printer and create objects on a Novell server, use an HP utility (such as HP Web Jetadmin or HP Install Network Printer Wizard) or a Novell utility (such as NWadmin).

To install the printing system software

1   If you are installing the software on Windows NT 4.0, Windows 2000, or Windows XP, make sure that you have administrator privileges.

2   Make sure that the HP Jetdirect print server is configured correctly for the network by printing a configuration page (see "Configuration page" on page 72). On the second page, locate the printer IP address. You might need this address to complete network installation.

3   Close all software programs that are open or running.

4   Insert the printer CD-ROM into the CD-ROM drive.

    If the welcome screen does not open, start it by using the following procedure:

    a   On the **Start** menu, click **Run**.

    b   Type the following (where `X` is the letter of the CD-ROM drive): `X:\setup`

    c   Click **OK**.

5   When prompted, click **Install Printer** and follow the instructions on the computer screen.

6   Click **Finish** when installation has completed.

7   Restart the computer.

8   Print a page from any software program to make sure that the software is correctly installed.

    If installation fails, reinstall the software. If this fails, check the installation notes and Readme files on the printer CD-ROM or the flyer that came in the printer box, or go to http://www.hp.com/support/lj2300 for help or more information.

To set up a Windows computer to use the network printer using Windows-sharing

If the printer is directly connected to a computer using a parallel cable, you can share the printer on the network so that other network users can print to it.

See your Windows documentation to enable Windows-sharing. After the printer is shared, install the printer software on all computers that share the printer.

Installing Macintosh printing system software for networks

This section describes how to install Macintosh printing system software. The printing system software support Mac OS 8.6 and later.

The printing system software includes the following components:

● **PostScript® Printer Description files**
The PostScript (PS) Printer Description files (PPDs), in combination with the Apple LaserWriter 8 printer driver, provide access to the printer features and allow the computer to communicate with the printer. An installation program for the PPDs and other software is provided on the CD-ROM that came with the printer. In addition, use the Apple LaserWriter 8 printer driver that comes with the computer.

● **HP LaserJet Utility**
The HP LaserJet Utility provides access to features that are not available in the printer driver. Use the illustrated screens to select printer features and complete tasks with the printer:

   • Name the printer, assign it to a zone on the network, download files and fonts, and change many of the printer settings.

   • Set a password for the printer.

   • Check the levels of printer consumables.

   • Configure and set the printer for Internet Protocol (IP) or AppleTalk printing.

To install printer drivers in Mac OS 9.2 or earlier

1 Connect the network cable between the HP Jetdirect print server and a network port.

2 Insert the CD-ROM into the CD-ROM drive. The CD-ROM menu runs automatically. If the CD-ROM menu does not run automatically, double-click the CD-ROM icon on the desktop, and then double-click the Installer icon. This icon is located in the Installer/<language> folder of the Starter CD-ROM (where <language> is your language preference). (For example, the Installer/English folder contains the Installer icon for the English printer software.)

3 Follow the instructions on the screen.

4 Open the Chooser from within the Apple Menu.

5 Select **LaserWriter 8** from the left side of the **Chooser** dialog box.

6 Select your printer from the list that appears on the right side of the **Chooser** dialog box and then select **Create**.

To install printer drivers in Mac OS X

1 Connect the network cable between the HP Jetdirect print server and a network port.

2 Insert the CD-ROM into the CD-ROM drive. The CD-ROM menu runs automatically. If the CD-ROM menu does not run automatically, double-click the CD-ROM icon on the desktop, and then double-click the Installer icon. This icon is located in the Installer/<language> folder of the Starter CD-ROM (where <language> is your language preference). (For example, the Installer/English folder contains the Installer icon for the English printer software.)

3 Double-click the HP LaserJet Installers folder.

4 Double-click the Mac OS X folder.

5 Double-click the **Installer** icon for the desired language.

6 On your computer hard drive, double-click **Applications**, then **Utilities**, and then **Print Cente**r.

7 Click **Add Printer**.

8 Select the connection type.

9 Select the printer name.

10 Click **Add Printer**.

11 Close the Print Center by clicking the close button in the upper-left corner.

Some networks might not allow the printer to be set up automatically. You might need to manually select the correct PPD when installing the printer.

Macintosh computers cannot be connected directly to the printer.

Installing Macintosh printing system software for direct connections

This section explains how to install the printing system software for Mac OS 8.6 to 9.2.*x* and Mac OS X.

The Apple LaserWriter driver must be installed to use the PostScript Printer Description (PPD) files. Use the Apple LaserWriter 8 driver that came with your Macintosh computer.

To install the printing system software

1 Connect a USB cable between the USB port on the printer and the USB port on the computer. Use a standard 2-meter USB cable. (See "Interface ports" on page 26 for an illustration.)

2 Close all software programs that are open or running.

3 Insert the printer CD-ROM into the CD-ROM drive and run the installer.

The CD-ROM menu runs automatically. If the CD-ROM menu does not run automatically, double-click the CD-ROM icon on the desktop, and then double-click the **Installer** icon. This icon is located in the Installer/<language> folder of the Starter CD-ROM (where <language> is your language preference).

4 Follow the instructions on the computer screen.

5 Restart the computer.

6 **For Mac OS X:** From HD/Applications/Utilities/Print Center, start the Print Center. If the printer does not set up automatically, do the following:

  a Click **Add Printer**.

  b From within the printer list, select USB as the connection type.

  c Select the printer and then click **Add** in the lower-left corner.

  For Mac OS 8.6 to 9.2.*x*:

  a From HD/Applications/Utilities, open the Apple Desktop Printer Utility.

  b Double-click **Printer (USB)**.

  c Next to **USB Printer Selection**, click **Change**.

  d Select the printer, click **Auto Setup**, and then click **Create**.

  e On the **Printing** menu, click **Set Default Printer**.

7 Print a page from any software program to make sure that the software is correctly installed.

If installation fails, reinstall the software. If this fails, see the installation notes or Readme files on the printer CD-ROM or the flyer that came in the printer box, or go to http://www.hp.com/support/lj2300 for help or more information.

Installing the software after the parallel or USB cable has been connected

If you have already connected a parallel or USB cable to a Windows computer, the **New Hardware Found** dialog box appears when you turn on the computer.

To install the software for Windows 95, Windows 98, or Windows Me

1 In the **New Hardware Found** dialog box, click **Search CD-ROM drive**.

2 Click **Next**.

3 Follow the instructions on the computer screen.

4 Print a page from any software program to make sure that the software is correctly installed.

   If installation fails, reinstall the software. If this fails, check the installation notes and Readme files on the printer CD-ROM or the flyer that came in the printer box, or go to http://www.hp.com/support/lj2300 for help or more information.

To install the software for Windows 2000 or Windows XP

1 In the **New Hardware Found** dialog box, click **Search**.

2 On the **Locate Driver Files** screen, select the **Specify a Location** check box, clear all other check boxes, and then click **Next**.

3 Type the following (where X is the letter of the CD-ROM drive):

   ```
   X:\2000XP
   ```

4 Click **Next**.

5 Follow the instructions on the computer screen.

6 Click **Finish** when installation has completed.

7 Select a language and follow the instructions on the computer screen.

8 Print a page from any software program to make sure that the software is correctly installed.

   If installation fails, reinstall the software. If this fails, check the installation notes and Readme files on the printer CD-ROM or the flyer that came in the printer box, or go to http://www.hp.com/support/lj2300 for help or more information.

Uninstalling the software

This section explains how to uninstall the printing system software.

To remove software from Windows operating systems

Use the Uninstaller in the HP LaserJet 2300/Tools program group to select and remove any or all of the Windows HP printing-system components.

1 Click **Start** and then click **Programs**.

2 Point to **HP LaserJet 2300** and then click **Tools**.

3 Click **Uninstaller**.

4 Click **Next**.

5 Select the HP printing-system components you want to uninstall.

6 Click **OK**.

7 Follow the instructions on the computer screen to complete the uninstallation.

To remove software from Macintosh operating systems

Drag the HP LaserJet folder and PPDs to the trash can.

Control panel

This section provides information about the control panel and its features:

- "Control panel layout" on page 22
- "Using the printer Help system" on page 25
- "Printing control panel menus" on page 25
- "Changing control panel settings" on page 25
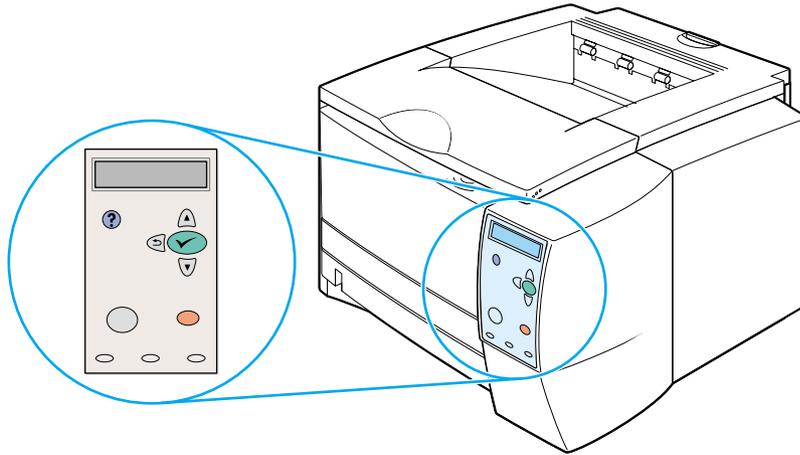
Control panel layout

The control panel includes the following controls:

- graphical display that can show up to two lines of messages
- four navigation buttons: ↰ (BACK button), ▲ (UP button), ▼ (DOWN button), and ✓ (SELECT button)
- ? (HELP button)
- PAUSE/RESUME button
- CANCEL JOB button
- three light-emitting diode (LED) indicator lights: READY light, DATA light, and ATTENTION light

See "Interpreting control-panel messages" on page 89 to identify and troubleshoot control panel messages.
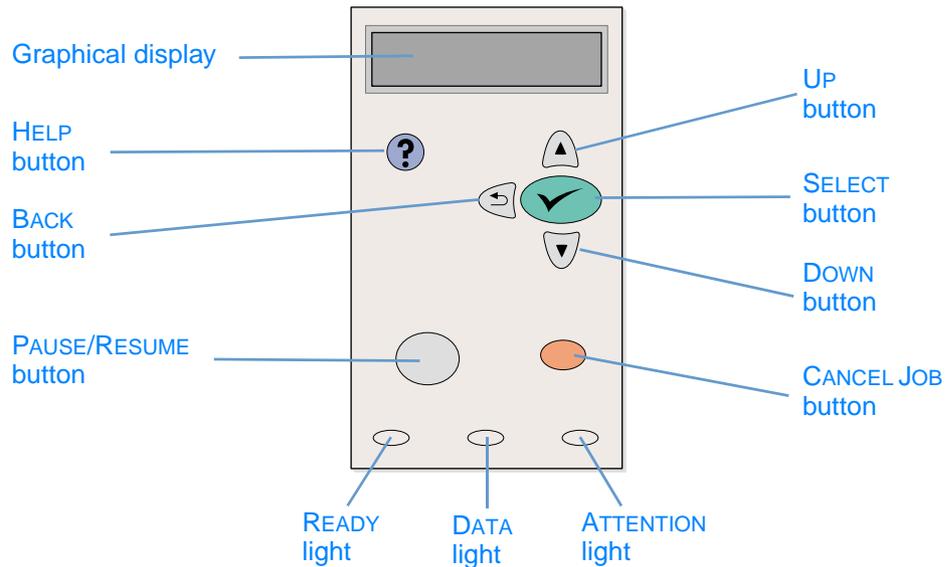
Control panel buttons

Button	Function
? (HELP)	• Provides information about the message on the graphical display.
↺ (BACK)	• Backs up one level in the menu tree or backs up one numeric entry. • Exits menus if held down for more than 1 second.
PAUSE/RESUME	• PAUSE: Causes the printer to stop printing the current job and expel all active pages from the paper path. • RESUME: Returns the printer to the ready or busy state from the menus or the online Help.
▲ (UP)	• Navigates to the previous item in the list, or increases the value of items that are numerical in nature.
✓ (SELECT)	• Opens menus and navigates through menu levels. • Clears an error condition when the condition is clearable. • Saves the selected value for an item. • Performs the action associated with the item that is highlighted on the graphical display.
▼ (DOWN)	• Navigates to the next item in the list, or decreases the value of items that are numerical in nature.
CANCEL JOB	• Cancels the current print job in process and expels all active pages from the paper path. The time that it takes to cancel the job depends on the size of the print job. (Press the button only once.) **Note:** The control panel lights cycle while the print job is cleared from both the printer and the computer, and then return to the ready state (READY light on).

Control panel lights

Light	State	Indication
READY	On	The printer is online and ready to accept data to print.
	Off	The printer cannot accept data because it is offline (paused) or has experienced an error.
	Blinking	The printer is going offline. The printer stops processing the current print job and expels all active pages from the paper path.
DATA	On	The printer has data to print, but is waiting to receive all of the data.
	Off	The printer has no data to print.
	Blinking	The printer is processing or printing the data.
ATTENTION	On	The printer has experienced a problem. Note the message on the control panel display, and then turn the printer off and then on again. See "Interpreting control-panel messages" on page 89 for help in resolving problems.
	Off	The printer is functioning without error.
	Blinking	Action is required. See the control panel display.

Using the printer Help system

This printer features a Help system at the control panel that provides instructions for resolving most printer errors.

To view Help for a message (if available), press ? (HELP button). If the Help topic is longer than two lines, use ▲ (UP button) and ▼ (DOWN button) to scroll through the entire topic.

To exit the Help system, press ? (HELP button) again.

Printing control panel menus

To see the current settings for the menus and items available at the control panel, print a control panel menu map. You might want to store the menu map near the printer for reference.

To print a control panel menu map

1　Press ✓ (SELECT button) to open the menus.

2　Use ▲ (UP button) or ▼ (DOWN button) to scroll to INFORMATION, and then press ✓ (SELECT button).

3　Use ▲ (UP button) or ▼ (DOWN button) to scroll to PRINT MENU MAP, and then press ✓ (SELECT button).

Changing control panel settings

For a complete list of menu items and possible values, see "Control panel menus" on page 143. Certain menu options appear only if the associated tray or accessory is installed. For example, the EIO menu appears only if you have an EIO card installed.

To change a control panel setting

1　Press ✓ (SELECT button) to open the menus.

2　Use ▲ (UP button) or ▼ (DOWN button) to scroll to the menu that you want, and then press ✓ (SELECT button).

3　Some menus might have several submenus. Use ▲ (UP button) or ▼ (DOWN button) to scroll to the submenu item that you want, and then press ✓ (SELECT button).

4　Use ▲ (UP button) or ▼ (DOWN button) to scroll to the setting, and then press ✓ (SELECT button). Some settings change rapidly if ▲ (UP button) or ▼ (DOWN button) is held down. An asterisk (∗) appears next to the selection on the display, indicating that it is now the default.

5　Press PAUSE/RESUME to exit the menu.

Note　Printer-driver settings override control panel settings. Software program settings override both printer-driver settings and control panel settings.

If you cannot gain access to a menu or item, it is either not an option for the printer, or you have not enabled the associated higher-level option. See your network administrator if a function has been locked (Access denied menus locked appears on the printer control panel display).

Interface ports

The HP LaserJet 2300 printer has two interface ports:

- IEEE-1284B parallel port
- USB port (compatible with 1.1 and 2.0 low and full speed certified devices)

The HP LaserJet 2300n printer, HP LaserJet 2300dn, and HP LaserJet 2300dtn printer also include an HP Jetdirect EIO print server card that contains a 10/100Base-TX port. You can purchase an HP Jetdirect EIO print server card for the other HP LaserJet 2300 series printers. See "Ordering parts, accessories, and supplies" on page 116, or contact your local HP dealer (see "Contacting HP" on page 123).

Parallel port (IEEE-1284B)

USB port

Network EIO port (RJ-45)
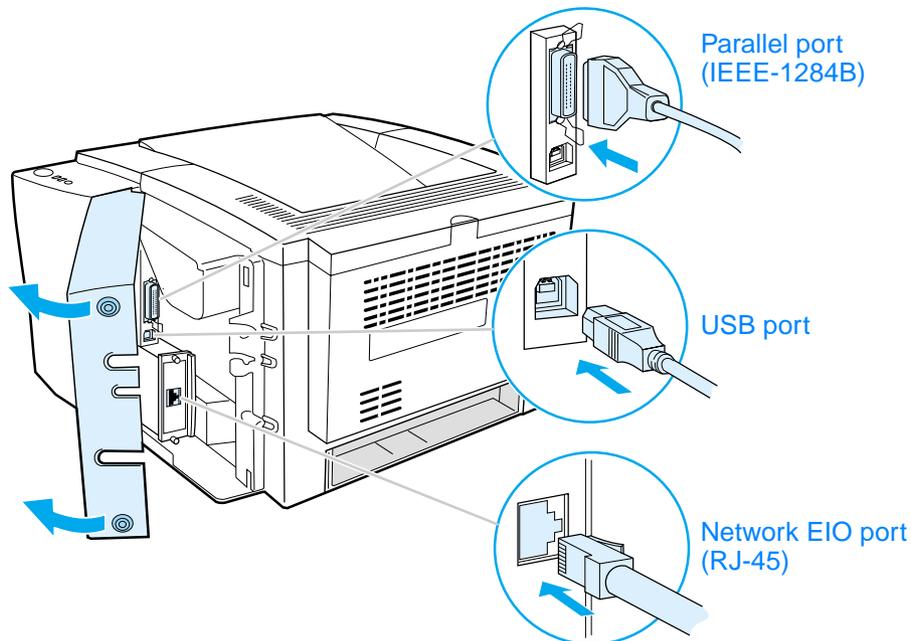
2 Printing tasks

This section provides information about the following topics:

Purchasing paper and other media

HP LaserJet printers produce excellent print quality. You can print on a variety of print media, such as paper (including up to 100 percent recycled fiber content paper), envelopes, labels, transparencies, and custom-sized media.

Properties such as weight, grain, and moisture content are important factors that affect printer performance and output quality. To achieve the best possible print quality, use only high-quality, copier-grade paper. See "Media specifications" on page 134 for details.

Note	Always test a sample of paper before purchasing large quantities. Your supplier should understand the requirements specified in the *hp LaserJet printer family print media guide*. For ordering information, see "Ordering parts, accessories, and supplies" on page 116 or go to http://www.hp.com/support/ljpaperguide.

Media input options

The printer comes with up to three paper trays. The printer automatically selects the requested media from the correct tray if that media is loaded in any of the trays. If the media is not available, a message on the control panel prompts you to select the media or tray that you want instead.

Tray 1
(pull-down)

Tray 2
(250-sheet tray)

Tray 3
(500-sheet tray,
if installed)
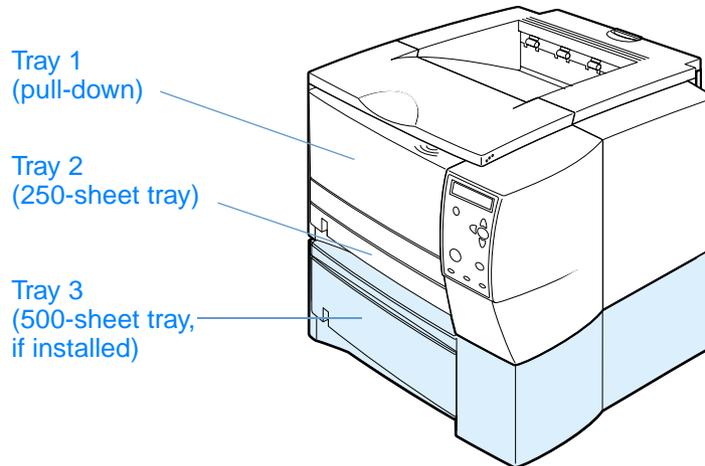
Tray 1 media sizes

Tray 1, a multipurpose tray, adjusts for sizes from 76 by 127 mm (3 by 5 inches) to a legal-size sheet, 216 by 356 mm (8.5 by 14 inches). Tray 1 should be used when printing the following types of media:

- envelopes (see "Printing on envelopes" on page 37)
- labels (see "Printing on labels" on page 39)
- transparencies (see "Printing on transparencies" on page 40)
- custom-sized media or cardstock (see "Printing on custom-sized media or cardstock" on page 41)
- postcards (see "Printing on custom-sized media or cardstock" on page 41)

Tray 2 (250-sheet tray) paper sizes

A 250-sheet tray can be purchased as an accessory if the printer did not come with a tray 3. It has settings for the following paper sizes:

- A4
- A5
- B5 (ISO)
- B5 (JIS)
- Letter
- Legal
- Executive
- 8.5 by 13 inches (FoolsCap, Folio, JIS Exec)

See "Loading tray 2 (250-sheet tray) or optional 250-sheet tray in tray 3 position" on page 32 to change the paper size. See "Supported sizes of media" on page 134 for specific dimensions.

CAUTION	Load only paper in the 250-sheet tray. Other types of print media, such as labels or transparencies, can jam if you try to print on them from either the 250-sheet tray or the 500-sheet tray.

Tray 3 (500-sheet tray) paper sizes

A 500-sheet tray can be purchased as an accessory if the printer did not come with a tray 3. It has settings for the following paper sizes:

- A4
- Letter

See "Loading tray 3 (500-sheet tray)" on page 34 to change the paper size. See "Supported sizes of media" on page 134 for specific dimensions.

CAUTION	Load only paper in the 500-sheet tray. Other types of print media, such as labels or transparencies, can jam if you try to print on them from either the 250-sheet tray or the 500-sheet tray.

Loading trays

Loading tray 1 (multipurpose tray)

Tray 1 holds up to 100 sheets of paper or up to 10 envelopes. See the following sections for printing on special media:

● preprinted material—"Printing on letterhead, prepunched, or preprinted paper (single-sided)" on page 42

● envelopes—"Printing on envelopes" on page 37

● labels—"Printing on labels" on page 39

To load tray 1

1 Open tray 1 by pulling the front cover down.

2 Slide out the plastic tray extender. If the media that is being loaded is longer than 229 mm (9 inches), also flip open the additional tray extender.

3 Slide the paper-width guides slightly wider than the media.

4 Place media into the tray (short-edge in, print-side up). The media should be centered between the paper-width guides and under the tabs on the paper-width guides.

5 Slide the paper-width guides inward until they lightly touch the media stack on both sides without bending it. Make sure that the media fits under the tabs on the paper-width guides.

Note
Do not add media to tray 1 while the printer is printing. This could cause a paper jam. Do not close the front door when the printer is printing.
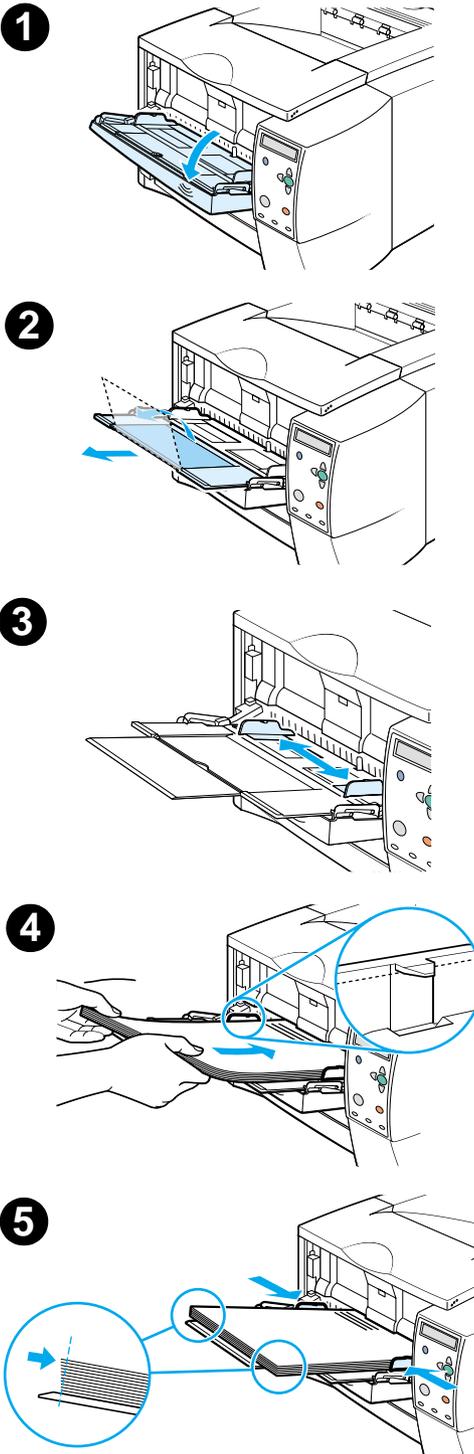
Loading tray 2 (250-sheet tray) or optional 250-sheet tray in tray 3 position

1
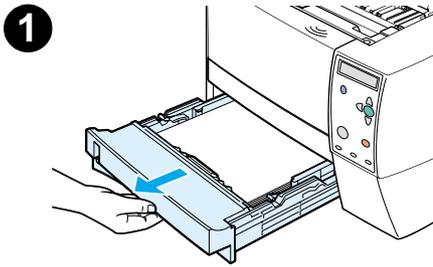
Tray 2 supports only paper (A4, A5, B5 ISO, B5 JIS, Letter, Legal, Executive, and 8.5 by 13 inches).

To load tray 2

1 Pull the tray out of the printer and remove any paper.

2 Move the side width guides outward to match the paper size you are loading.

3 On the rear paper-length guide, press on the blue tab and adjust it so that the pointer matches the paper size that you are loading.

Continued on the next page.
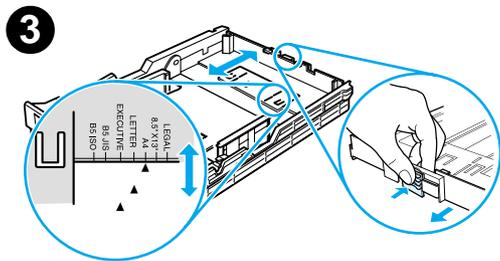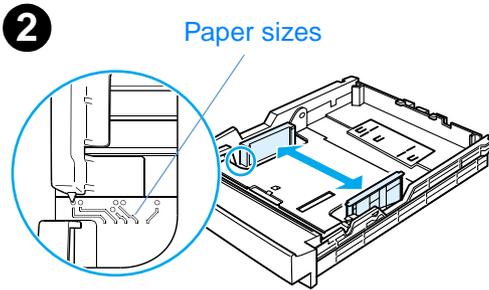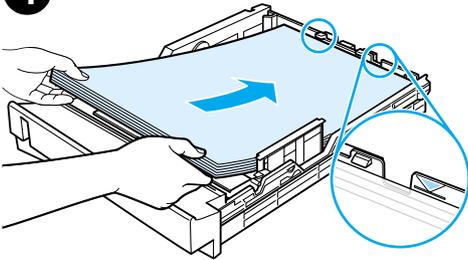
2

Paper sizes

3

4 Place the paper in the tray and make sure that it is flat at all four corners. Keep the paper below the height tabs on the paper-length guide in the rear of the tray.

5 Push down on the paper to lock the metal paper-lift plate in place.

6 Slide the tray back into the printer.
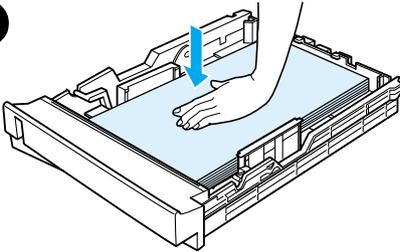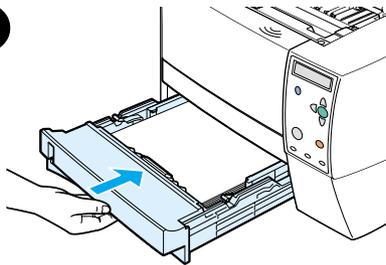
Note

Whenever you remove a 250-sheet tray from the printer, always push down on the paper to lock the metal paper-lift plate in place before you replace the tray. The metal paper-lift plate releases and lifts the paper up when you push the tray into the printer.

Loading tray 3 (500-sheet tray)

1

Tray 3 supports only paper (A4 and Letter).

To load tray 3

1 Pull the tray out of the printer and remove any paper.

2 To adjust for letter-size paper, pull up on the rear paper stop.

2

To adjust for A4-size paper, push the rear paper stop down.

3 For letter-size paper, move the side width guides outward as far as possible.

For A4-size paper, move the side width guides inward as far as possible.

3

4 Place the paper in the tray and make sure that it is flat at all four corners. Keep the paper below the hooks on the side and rear of the tray.

5 Slide the tray back into the printer.

4

5
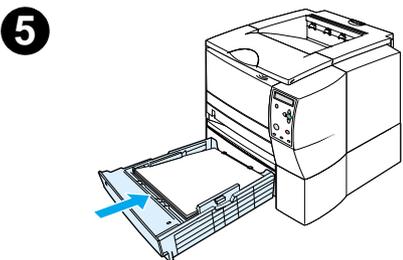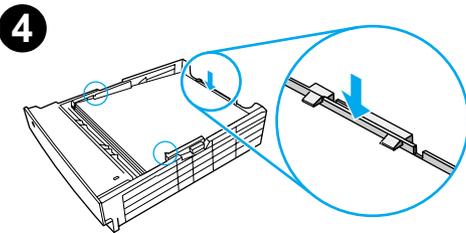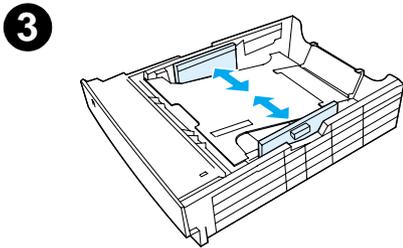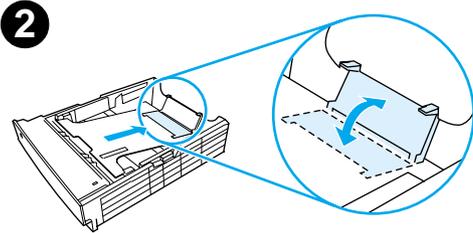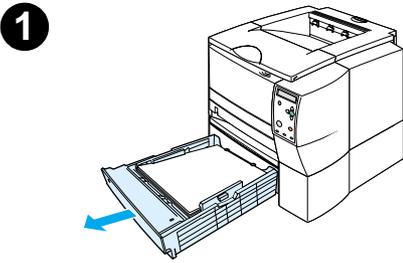
Media output options

The printer comes with two output bins. The top output bin is used when the rear output bin is closed. The rear output bin is used when the rear output bin is open.

Top output bin (face down)   Rear output bin (face up)
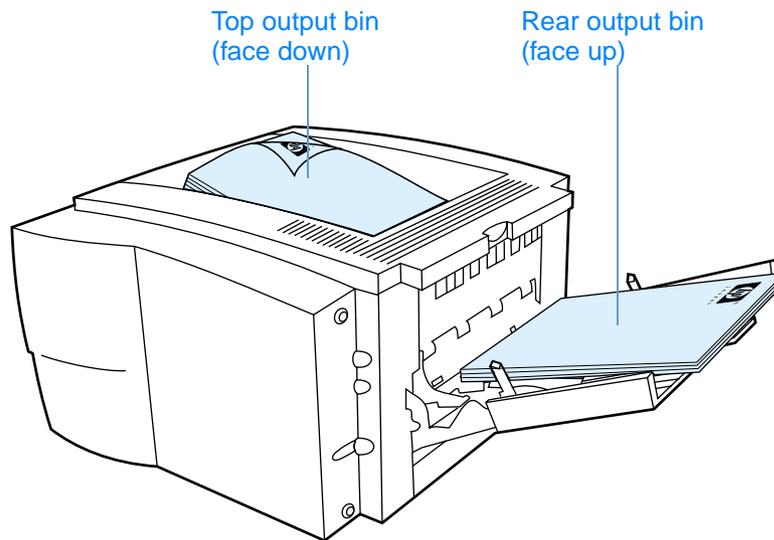
Note   When tray 1 and the rear output bin are used together, they provide a straight-through paper path for your print job. Using a straight-through paper path can sometimes reduce curling.

Printing on special media

This section discusses printing on types of media that require special handling:

Printing on envelopes

You can print envelopes from tray 1. Tray 1 holds up to 10 envelopes and supports standard or custom sizes.

For printing on any size of envelope, make sure to set the margins in your program at least 15 mm (0.6 inch) from the edge of the envelope.

The printer might print at a slower speed when printing envelopes. In addition, printing performance depends on the construction of the envelope. Always test a few sample envelopes before purchasing a large quantity. For envelope specifications, see "Envelopes" on page 139.

| WARNING! | Never use envelopes with coated linings, exposed self-stick adhesives, or other synthetic materials. These items can emit noxious fumes. |

CAUTION	Envelopes with clasps, snaps, windows, coated linings, exposed self-stick adhesives, or other synthetic materials can severely damage the printer.
	To avoid jamming and possible printer damage, never try to print on both sides of an envelope.
	Before you load envelopes, make that sure they are flat and not damaged or stuck together. Do not use envelopes with pressure-sensitive adhesive.
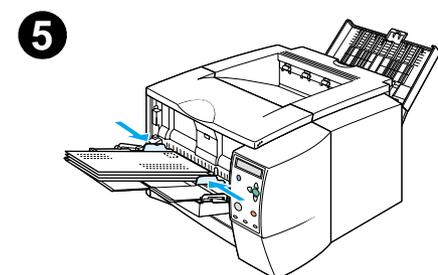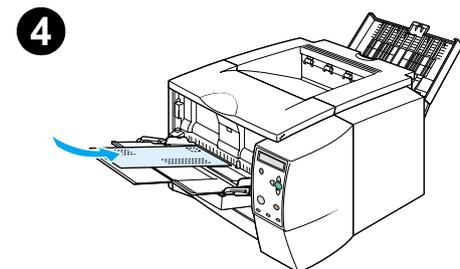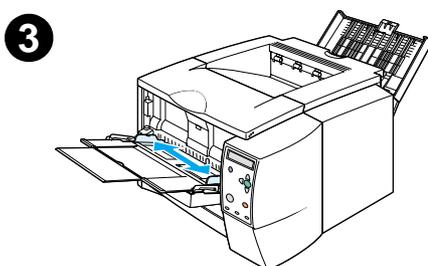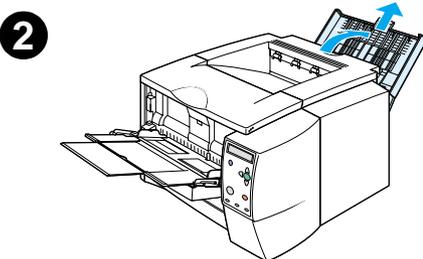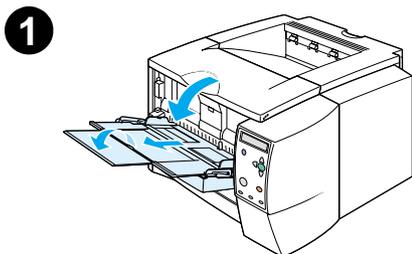
To load envelopes in tray 1

Many types of envelopes can be printed from tray 1. Up to 10 can be stacked in the tray.

1 Open tray 1 by pulling the front cover down.

2 Open the rear output bin by pulling down on the top section of the bin. Slide out the extender until it extends fully.

3 Slide the width guides on tray 1 outward to a position that is slightly wider than the media.

4 Place the envelopes into the tray short-edge in, print-side up. The stamp end must enter the printer first.

5 Slide the width guides inward until they lightly touch the envelope stack without bending it. The envelopes should be centered between the paper guides and under the tabs on the paper-width guides.

Note
If the envelope has a flap on the short edge, this edge must enter the printer first.

You might experience some jams when using any media with a length less than 178 mm (7 inches). This might be caused by paper that has been affected by environmental conditions. For optimum performance, make sure that you are storing and handling the paper correctly (see "Printing and paper storage environment" on page 138). Using media from another manufacturer might also help.

Printing on labels

Use only labels recommended for laser printers. For label specifications, see "Labels" on page 141.

Guidelines for printing on labels

- Print labels from tray 1.
- Load labels print-side up.
- Use the rear output bin for labels.
- Remove label sheets from the output bin as they are printed to prevent them from sticking together.
- Do not use labels that are separating from the backing sheet or are wrinkled or damaged in any way.
- Do not use label sheets that have the backing sheet exposed, and do not reuse partially used label sheets.
- Do not feed a sheet of labels through the printer more than once. The adhesive backing is designed for one pass through the printer.
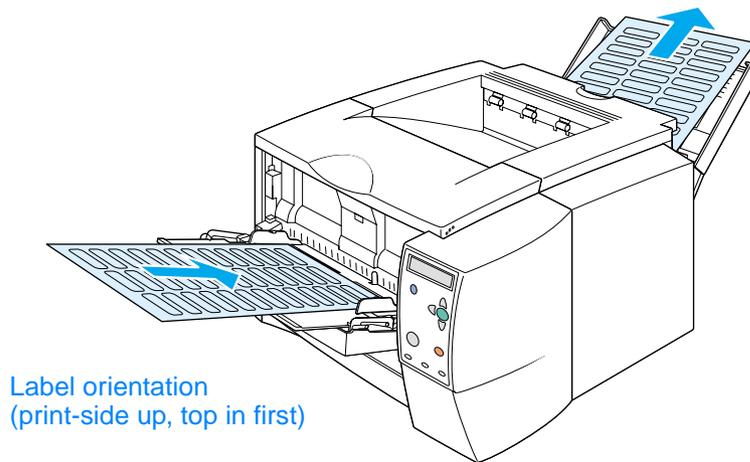
Label orientation
(print-side up, top in first)

CAUTION   If a sheet of labels becomes jammed in the printer, see "Clearing jams" on page 97.

Printing on transparencies

Use only transparencies recommended for use in laser printers. For transparency specifications, see "Transparencies" on page 141.

Guidelines for printing on transparencies

- Print transparencies from tray 1.
- Use the top output bin to reduce curling (this is for transparencies only; for other media use the rear output bin to reduce curling).
- Remove transparencies from the output bin as they are printed to prevent them from sticking.
- Place transparencies on a flat surface after removing them from the printer.
- Set the printer driver for transparencies (see "Printing by type and size of media" on page 53).
- For Macintosh computers, go to the HP LaserJet Utility and select transparencies.
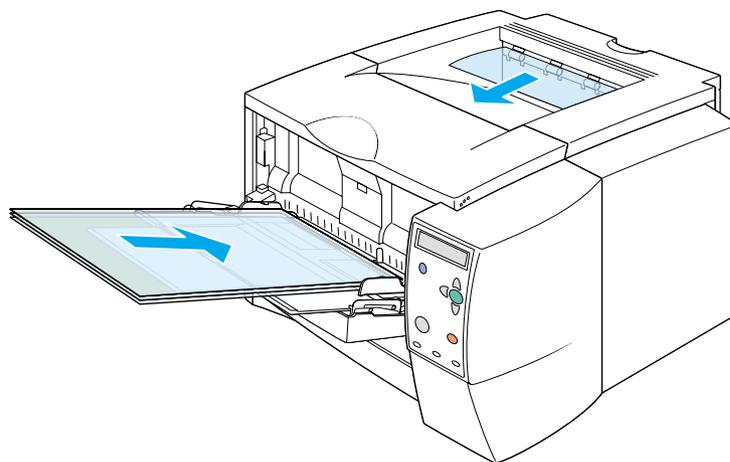
Printing on custom-sized media or cardstock

Postcards, 3-by-5 inch (index) cards, and other custom-sized media can be printed from tray 1. The minimum media size is 76 by 127 mm (3 by 5 inches) and the maximum media size is 216 by 356 mm (8.5 by 14 inches).

Printing on odd sizes or weights of media (for example, small, long, or narrow paper) can decrease print speed. The decreased speed helps to prolong the life of internal printer parts. It also improves print quality with these types of media.

Guidelines for printing on custom-sized media and cardstock

- Always insert the short-edge first into tray 1. If you want to print in landscape mode, make this selection through your software. Inserting paper long-edge first might cause a jam.
- Use the rear output bin to reduce curl.
- Do not print on media smaller than 76 mm (3 inches) wide or 127 mm (5 inches) long.
- In your software application, set margins at least 6.4 mm (0.25 inch) away from the edges of the media.
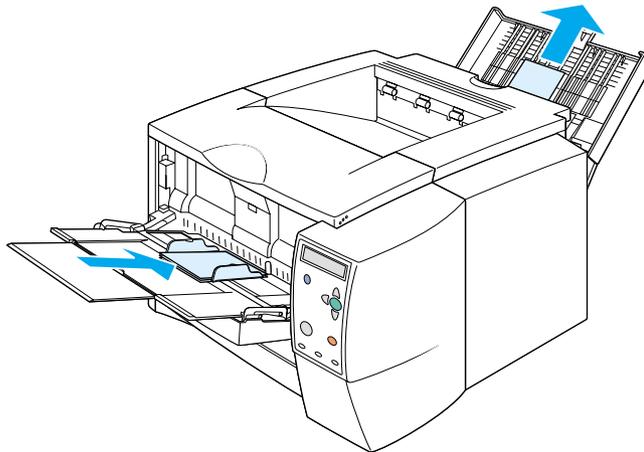
Printing on letterhead, prepunched, or preprinted paper (single-sided)

When printing letterhead, prepunched, or preprinted paper, it is important to orient the paper correctly. Follow the guidelines in this section for printing on one side only. For duplexing guidelines, see .

Tray 1 orientation: print-side up, top edge toward the printer.
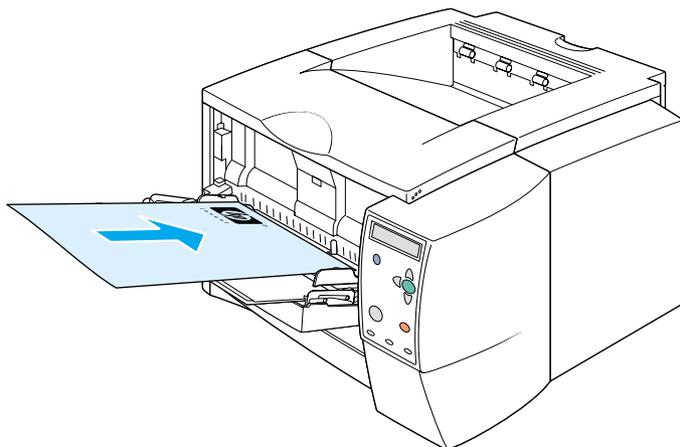
Tray 2 or tray 3 orientation: print-side down, top edge toward you.
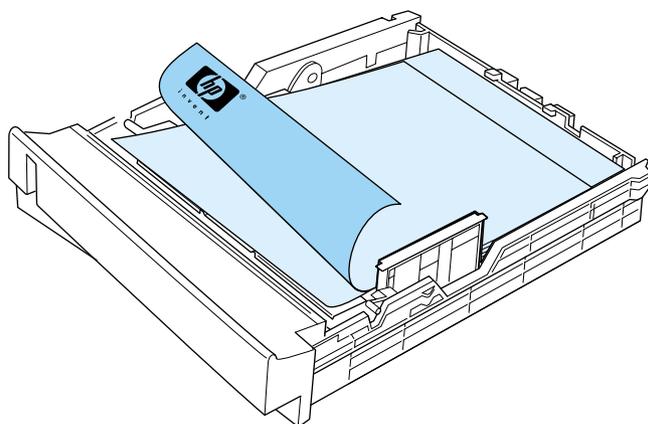
Guidelines for printing on letterhead or preprinted forms

- Do not use letterhead paper that is printed with low-temperature inks, such as those used in some types of thermography.
- Do not use raised or embossed letterhead.
- 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 this fusing temperature (200° C or 392° F for 0.1 second).

Printing on both sides (duplexing)

You can print on both sides of a sheet of paper (called duplexing or two-sided printing) in two ways—automatic and manual. Letter, A4, and 8.5 by13 inches, and Legal paper sizes are supported for duplexing.

- **Automatic duplexing**
  The HP LaserJet 2300d, HP LaserJet 2300dn, and HP LaserJet 2300dtn printers contain a built-in duplexer that can automatically print on both sides of paper.

- **Manual duplexing**
  You can perform manual duplexing for the HP LaserJet 2300L, HP LaserJet 2300, and HP LaserJet 2300n printers. The printer prints the first side of each page, waits for you to insert the paper into the printer, and then prints the second side of each page. Other documents cannot be printed while the printer waits for you to insert the paper for the second side to be printed.

Even if your printer includes a built-in duplexer, manual duplexing is necessary for the following:

- if you want to duplex paper other than the supported sizes or weights—for example, paper heavier than 105 g/m^2 (28 lb) or very thin paper
- if you select **Straight Paper Path** in your printer driver

Guidelines for printing on both sides

Do not print on both sides of labels, transparencies, or vellum. Damage to the printer and jams might result.

Paper orientation for printing on both sides

Duplex on the second side of the sheet of paper first. The paper needs to be oriented as shown in the following illustration.

- For tray 1, load the first side facing down with the bottom, short edge toward the printer.
- For all other trays, load the first side facing up with the top, short edge toward the printer.

Tray 1

All other trays
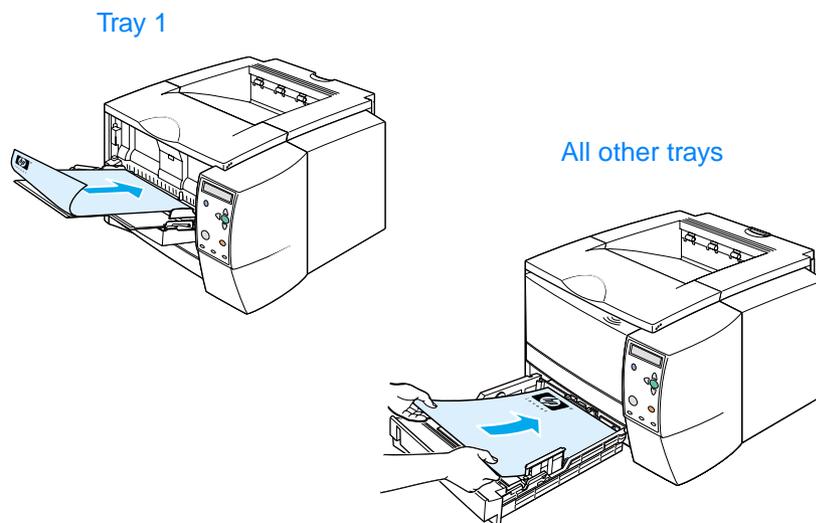
Layout options for printing on both sides

The four print-orientation options are shown below. These options are available when **Print on Both Sides** is selected from the **Finishing** tab in the printer driver.
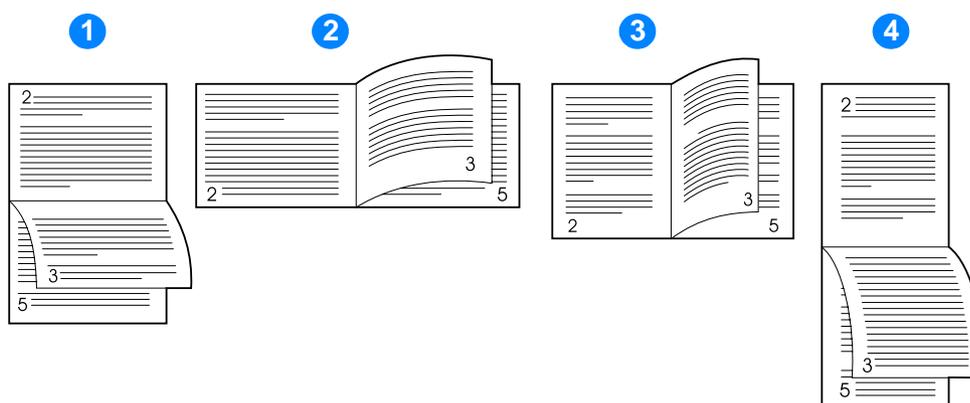
1	Flip Pages Up (long-edge landscape)	This layout is often used in accounting, data processing, and spreadsheet applications. Every other printed image is oriented upside-down. Facing pages are read continuously from top to bottom.
2	Flip Pages Sideways (short-edge landscape)	Each printed image is oriented right-side up. Facing pages are read from top to bottom on the left page, then from top to bottom on the right page.
3	Flip Pages Sideways (long-edge portrait)	This is the default and most common layout, with every printed image oriented right-side up. Facing pages are read from top to bottom on the left page, then from top to bottom on the right page.
4	Flip Pages Up (short-edge portrait)	This layout is often used with clipboards. Every other printed image is oriented upside-down. Facing pages are read continuously from top to bottom.

To duplex with the built-in duplexer

The built-in duplexer is included only with the HP LaserJet 2300d printer, HP LaserJet 2300dn printer, and HP LaserJet 2300dtn printer.

1   Insert enough paper into one of the trays to accommodate the print job. If you are loading special paper such as letterhead, load it in one of the following ways:

- For tray 1, load the letterhead paper with the first side down, bottom in first.
- For tray 2 (250-sheet tray) or tray 3 (either a 250-sheet tray or a 500-sheet tray), load the letterhead paper with first side up, top edge toward the back of the tray.

CAUTION   Do not load paper that is heavier than 105 g/m^2 (28-lb bond). Jamming could result.

2   Open the printer driver (see).

3   On the **Finishing** tab, select **Print on Both Sides**.

4   Click **OK**.

5   Send the print job to the printer.

Note   The paper you are printing on will partially come out of the top output bin during the duplexing. Do not pull on the paper until duplexing is complete.

During duplexing, the duplexer will not function if the rear output bin is open.

To duplex manually

1   Insert enough paper into one of the trays to accommodate the print job. If you are loading special paper such as letterhead, load it in one of the following ways:

- For tray 1, load the letterhead paper with the first side down, bottom in first.
- For tray 2 (250-sheet tray) or tray 3 (either a 250-sheet tray or a 500-sheet tray), load the letterhead paper with first side up, top edge toward the back of the tray.

2   Open the printer driver (see).

3   On the **Finishing** tab, select **Print on Both Sides**.

4   Click **OK**.

5   Send the print job to the printer.

6   Go to the printer. Remove any blank paper from tray 1. Insert the printed stack with the blank side up, top edge in *first*. You *must* print the second side from tray 1.

7   If prompted by a message at the controil panel display, press ✓ (SELECT button).

Note   If total sheets exceed the tray 1 capacity for manual duplex jobs, you must repeat steps 6 and 7 each time paper is inserted until the duplexing job is complete.

Canceling a print job

You can stop a print job from a software program or a print queue, or by pressing the CANCEL JOB button on the printer control panel.

- If the printer has not started printing, first try to cancel the job within the software program that sent the print job.
- If the print job is waiting in a print queue or print spooler such as the Printers group on a Windows computer or Print Monitor on a Macintosh computer, delete the job there.
- If the print job is already printing, press the CANCEL JOB button. The printer will finish printing any pages that are already moving through the printer and delete the rest of the print job.

If the control panel status lights continue to cycle after a job has been canceled, the computer is still sending the job to the printer. Either delete the job from the print queue or wait until the computer has finished sending data (the printer will return to the ready state, with the READY light on).

Pressing CANCEL JOB cancels only the current job in the printer. If more than one print job is in printer memory, CANCEL JOB must be pressed once for each job.

Using the printer driver

The printer driver provides access to the printer features and allows the computer to communicate with the printer. This section provides instructions for printing when setting options are set from the printer driver.

If possible, try to set printing features from the software program in which you are working or from the **Print** dialog box. You can set the printer features this way for most Windows and Macintosh software programs. If a setting is not available in the software program or printer driver, you must set it at the printer control panel.

For more information about printer-driver features, see the printer-driver online Help. For more information about printing from a specific software program, see the documentation for the program.

Note   Printer-driver settings override control panel settings. Software program settings override both printer-driver settings and control panel settings.

Changing the settings for a print job

If you want printing settings to be used only in the software program you are using, change the settings from the program. After you quit the program, the printer settings return to the defaults that are configured in the printer driver.

To change print settings for a print job on Windows computers

1   In the software program, click **File**.

2   Click **Print**.

3   Click **Setup** or **Properties**. (The options might be different for your program.)

4   Change the print settings.

5   When you are finished, click **OK**.

To change print settings for a print job on Macintosh computers

1   In the software program, click **File**.

2   Click **Print**.

3   In the dialog box that appears, select the print settings that you want to change and make the changes.

4   When you are finished, click **OK**.

Changing default settings

If you want printing settings to be used in all software programs you use on the computer, change the default settings in the printer driver.

Choose the procedure for your operating system:

- "To change default settings in Windows 95, Windows 98, and Windows Me" on page 48
- "To change default settings in Windows NT 4.0" on page 48
- "To change default settings in Windows 2000 and Windows XP" on page 48
- "To change default settings in Macintosh operating systems" on page 48

To change default settings in Windows 95, Windows 98, and Windows Me

1 Click the **Start** button.

2 Point to **Settings**.

3 Click **Printers**.

4 Right-click the HP LaserJet 2300 series printer icon.

5 Click **Properties**.

6 Change any of the settings on the tabs. These settings are now the defaults for the printer.

7 Click **OK** to save your settings and to close the printer driver.

To change default settings in Windows NT 4.0

1 Click the **Start** button.

2 Point to **Settings**.

3 Click **Printers**.

4 Right-click the HP LaserJet 2300 series printer icon.

5 Click **Document Defaults**.

6 Change any of the settings on the tabs. These settings are now the defaults for the printer.

7 Click **OK** to save your settings and to close the printer driver.

To change default settings in Windows 2000 and Windows XP

1 Click the **Start** button.

2 Point to **Settings**.

3 Point to **Printers** (Windows 2000) or **Printers and Faxes** (Windows XP).

4 Right-click the HP LaserJet 2300 series printer icon.

5 Click **Properties**.

6 On the **Advanced** tab, click **Printing Defaults**.

7 Change any of the settings on the tabs. These settings are now the defaults for the printer.

8 Click **OK** to return to the **Advanced** tab.

9 Click **OK** to save your settings and to close the printer driver.

To change default settings in Macintosh operating systems

Depending on the Macintosh operating system version that you have, use either the Apple Desktop Printer Utility or the Print Center to change printer driver defaults.

Using printer-driver features

This section provides instructions for common printing features that are controlled through the printer driver.

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Printing watermarks

A watermark is a marking, such as "Top Secret," "Draft," or someone's name, printed in the background of selected pages in a document.

Note   If you are using Windows NT 4.0, Windows 2000, or Windows XP, you must have administrator privileges to create watermarks.

To print a watermark on Windows computers (all versions)

1   Open the printer driver (see "Changing the settings for a print job" on page 47).

2   On the **Effects** tab, select a watermark from the **Watermarks** drop-down list. To edit or create a watermark, click **Edit**.

3   Click **OK**.

To print a watermark on Macintosh computers

Select **Custom** and specify the text that you want, depending on your printer-driver version.

Printing multiple pages on one sheet of paper

You can print more than one document page on a single sheet of paper (this is sometimes called 2-up, 4-up, or n-up printing). The pages will appear decreased in size and arranged on the sheet. You can specify that up to 16 pages are to be printed on a single sheet. This feature provides a cost-effective and environmentally friendly way to print draft pages, especially when combined with duplex printing (see).

To print multiple pages on one side of a sheet of paper on Windows computers (all versions)

1 Open the printer driver (see).
2 On the **Finishing** tab, select the number of **Pages per sheet**.
3 If you want borders around the pages, select **Print Page Borders**.
4 Select the page order from the **Page Order** drop-down list.
5 Click **OK**.

Setting a custom paper size

Use the custom paper feature to print on paper sizes other than standard sizes.

To set a custom paper size on Windows computers

1 Open the printer driver (see).
2 On the **Paper** tab, click **Custom**.
3 Specify the custom width and height.
4 Click **Close**.
5 Click **OK**.

To set a custom paper size on Macintosh computers

1 On the **File Menu**, select **Page Setup**.
2 From the **Page Attributes** drop-down menu, select **Custom Page Size**.
3 Click **New** to create a named custom page size. The new custom page is automatically added to the **Page Size** menu in **Page Setup**.

Using EconoMode (draft) printing

EconoMode (draft) printing allows the printer to use less toner on each page. Selecting this option might extend the life of your print cartridge and reduce your cost per page, but will reduce print quality.

EconoMode is not available if you are using a non-HP print cartridge.

To use EconoMode (draft) printing on Windows computers

1   Open the printer driver (see "Changing the settings for a print job" on page 47).

2   On the **Paper/Quality** tab, select **EconoMode**.

3   Click **OK**.

Choosing print-quality settings

If you need advanced print quality, you can choose custom settings.

Resolution options:

● **Best Quality**—use ProRes 1200 for the best print quality.

● **Faster Printing**—use FastRes 1200 as an alternative resolution for complex graphics or faster output.

● **Custom**—use this option to specify print-quality settings.

Note   Changing resolution can change the formatting of your text.

To choose print-quality settings on Windows computers

1   Open the printer driver (see "Changing the settings for a print job" on page 47).

2   On the **Finishing** tab, select the resolution or print-quality settings that you want.

3   Click **OK**.

Using reduce/enlarge options

Use the reduce/enlarge options to scale your document to a percentage of its normal size. You can also choose to scale your document to fit on any size of paper that the printer supports.

To set reduce/enlarge options on Windows computers

1   Open the printer driver (see "Changing the settings for a print job" on page 47).

2   On the **Effects** tab, use the **% of Normal Size** box or slider scale to reduce or enlarge the scale.

3   Click **OK**.

Selecting a paper source

If your software program supports printing paper by source, make the selections from the program. Program settings override printer-driver settings.
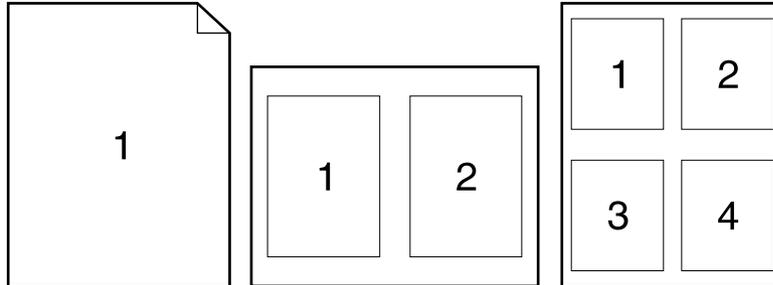
To select a paper source on Windows computers

1   Open the printer driver (see "Changing the settings for a print job" on page 47).

2   On the **Paper/Quality** tab, select the source from the **Source is** drop-down list.

3   Click **OK**.

To select a paper source on Macintosh computers

Select a paper source from the **General** options in the printer driver.

Printing by type and size of media

You can configure the printer to select media by **Type** (such as plain, glossy, or letterhead) and **Size** (such as letter or A4), rather than by **Source** (a tray).

Printing by type or size means that you want the printer to pull paper or print media from the first tray that is loaded with the type or size that you choose. Selecting media by type and size results in significantly better print quality for heavy paper and glossy paper. Using the wrong setting can result in unsatisfactory print quality. Always print by type for special print media such as labels or grayscale transparencies. Always print by size for envelopes.

If you want to print by type or size and the trays have not been configured for a certain type or size, load the paper or print media into tray 1, and then select the type or size from the **Page Setup** dialog box, the **Print** dialog box, or the **Print Properties** dialog box.

Note   The type and size settings can also be configured from the HP Web JetAdmin software for networked printers (see "Using HP Web Jetadmin software" on page 64). For Macintosh operating systems, these settings can be configured by using the HP LaserJet Utility (see "HP LaserJet Utility" on page 15).

To print by type and size of paper (tray 1)

1   Load and adjust the tray. (See "Loading tray 1 (multipurpose tray)" on page 31.)

2   At the printer control panel, press ✓ (SELECT button).

3   Use ▲ (UP button) or ▼ (DOWN button) to scroll to PAPER HANDLING, and then press ✓ (SELECT button).

4   Do one of the following:

   • To allow the printer to print automatically from tray 1, if it is loaded: Set TRAY 1 SIZE=ANY SIZE and TRAY 1 TYPE=ANY TYPE (**First** mode).

   • To print by type and size from tray 1, but to have the printer prompt you to load paper before printing: Set TRAY 1 SIZE to the size that is loaded and set TRAY 1 TYPE to anything *except* ANY TYPE (**Cassette** mode).

5   In the software program, click **File**.

6   Click **Print**.

7   Click **Properties**.

8   In the printer driver, select a type other than **Auto Select**.

To print by type and size of paper (tray 2 or 3)

1   Load and adjust the tray. (See "Loading tray 2 (250-sheet tray) or optional 250-sheet tray in tray 3 position" on page 32 or "Loading tray 3 (500-sheet tray)" on page 34.)

2   At the printer control panel, press ✓ (SELECT button) to change the size (if it was not detected) and/or the type.

3   Use ▲ (UP button) or ▼ (DOWN button) to scroll to the size you want and/or to the type PAPER HANDLING, and then press ✓ (SELECT button).

Note   To print by type and size, it might be necessary to unload or close tray 1. For more information, see "Paper Handling menu" on page 146.

4   In the software program, click **File**.

5   Click **Print**.

6   Click **Properties**.

7   In the printer driver, select a type other than Auto Select.

Printing a cover or different first page

Use the following procedure to print the first page of a document on a different media type than the rest of the document (for example, to print the first page of a document on letterhead paper and the rest on plain paper, or to print a cover on card stock and the subsequent pages on plain paper).

This option might not be available in all printer drivers.

To print a cover or different first page for Windows 95, Window 98, Windows Me, and Windows NT 4.0 computers

1   Open the printer driver (see "Changing the settings for a print job" on page 47).

2   On the **Paper** tab, select **Use different paper for first page**. **First Page**, **Other Pages**, and **Back Cover** tabs appear.

Note   The **Back Cover** tab is not available in the PS printer driver.

3   Select the **Size**, **Source is**, and **Type is** for the first page and other pages. The first page is the cover of the document. The other pages are the interior pages of the document.

4   Click **OK**.

To print a cover or different first page on Windows 2000 and Windows XP computers

1   Open the printer driver (see "Changing the settings for a print job" on page 47).

2   On the **Paper/Quality** tab, select **Use Different Paper**. **First Page**, **Other Pages**, and **Back Cover** become active (are no longer gray).

3   Select **First Page**.

4   Select the **Source is** and **Type is** for the first page.

5   Select **Other Pages** and then select the **Source is** and **Type is**. The first page is the cover of the document. The other pages are the interior pages of the document.

6   Click **OK**.

Note   The preceding procedures for Windows computers change the printer's settings for a print job. To change the printer's default settings, see "Changing default settings" on page 48.

To print a cover or different first page on Macintosh computers

In the **Print** dialog box, select **First from** and **Remaining from**.

Adding a blank page or back cover to the end of a print job

Use this option to add a blank page to the end of a print job.

To print a blank page in Windows 95, Windows 98, Windows Me, and Windows NT 4.0 (PCL only)

1   Open the printer driver (see "Changing the settings for a print job" on page 47).

2   On the **Paper** tab, select **Use different paper for first page**. **First Page**, **Other Pages**, and **Back Cover** tabs appear.

3   Select the **Size**, **Source is**, and **Type is** for the back cover.

4   Click **OK**.

To print a blank page in Windows 2000 and Windows XP

1   Open the printer driver (see "Changing the settings for a print job" on page 47).

2   On the **Paper/Quality** tab, select **Use Different Paper**. **First Page**, **Other Pages**, and **Back Cover** become active (are no longer gray).

3   Select **Back Cover**.

4   Select **Add a blank back cover**.

5   Select the **Source is** and **Type is** for the back cover.

6   Click **OK**.

Adding a blank page to the beginning of all print jobs (job separator page)

This option allows you to add a blank page to the beginning of all print jobs. This separates print jobs, making each print job easier to find.

To add a blank page to the beginning of all print jobs in Windows 95, Windows 98, Windows Me, and Windows NT 4.0

1   Click the **Start** button.

2   Point to **Settings**.

3   Click **Printers**.

4   Right-click the HP LaserJet 2300 series printer icon.

5   Click **Properties**.

6   On the **General** tab, click **Separator Page**.

7   Browse to find a separator page. Any printable document can be used as a separator page.

8   Click **OK** to select a separator page.

9   Click **OK** to return to the **General** tab.

10 Click **OK** to save your settings.

To add a blank page to the beginning of all print jobs in Windows 2000 and Windows XP

1 Click the **Start** button.

2 Point to **Settings**.

3 Point to **Printers** (Windows 2000) or **Printers and Faxes** (Windows XP).

4 Right-click the HP LaserJet 2300 series printer icon.

5 Click **Properties**.

6 On the **Advanced** tab, click **Separator Page**.

7 Browse to find a separator page. Any printable document can be used as a separator page.

8 Click **OK** to select a separator page.

9 Click **OK** to return to the **Advanced** tab.

10 Click **OK** to save your settings.

Note	The preceding procedures change the printer's settings for a print job. To change the printer's default settings, see "Changing default settings" on page 48.

Using job-storage features

The printer supports two distinct job-storage features that allow printing to be initiated from the printer control panel after the print job is sent from the computer:

- proof and hold jobs
- private jobs

Make sure that you identify your jobs in the printer driver before printing. Using default names might override previous jobs with the same default name or cause the job to be deleted.

Note   The job-storage features require 48 MB of RAM. You can add 16 MB to the base HP LaserJet 2300L printer and HP LaserJet 2300 printer so that they can support the features (see "Memory" on page 118).

If you turn the printer power off, all proof and hold and private jobs are deleted. A job can also be deleted at the printer control panel.

Proofing and holding a job

The proof and hold feature provides a quick and easy way to print one copy of a job for proofing before printing the additional copies.

Note   If you turn the printer power off, all quick copy, proof and hold, and private jobs are deleted.

To print the remaining copies of a held job

1 Press SELECT (✓) to open the menus.

2 Use UP ARROW (▲) or DOWN ARROW (▼) to scroll to RETRIEVE JOB, and then press SELECT (✓).

3 Use UP ARROW (▲) or DOWN ARROW (▼) to scroll to the user name, and then press SELECT (✓).

4 Use UP ARROW (▲) or DOWN ARROW (▼) to scroll to the user or job name, and then press SELECT (✓).

5 Use UP ARROW (▲) or DOWN ARROW (▼) to scroll to PRINT, and then press SELECT (✓).

6 Use UP ARROW (▲) or DOWN ARROW (▼) to scroll to the number of copies, and then press SELECT (✓).

Deleting a held job

When you send a proof and hold job, the printer automatically deletes your previous proof and hold job. If no proof and hold job already exists with that job name, and the printer needs additional space, the printer might delete other proof and hold jobs starting with the oldest one.

Note　　　If you turn the printer power off, all quick copy, proof and hold, and private jobs are deleted. A held job can also be deleted at the printer control panel.

To delete a held job

1 Press SELECT (✓) to open the menus.

2 Use UP ARROW (▲) or DOWN ARROW (▼) to scroll to RETRIEVE JOB, and then press SELECT (✓).

3 Use UP ARROW (▲) or DOWN ARROW (▼) to scroll to the user name, and then press SELECT (✓).

4 Use UP ARROW (▲) or DOWN ARROW (▼) to scroll to the user or job name, and then press SELECT (✓).

5 Use UP ARROW (▲) or DOWN ARROW (▼) to scroll to DELETE, and then press SELECT (✓).

Printing a private job

The private printing feature lets you specify that a job is not printed until you release it using a four-digit personal identification number (PIN) at the printer control panel. You specify the PIN in the printer driver, and it is sent to the printer as part of the print job.

To specify a private job

To specify in the driver that a job is private, select the **Private Job** option and type a 4-digit PIN.

To print a private job

1 Press SELECT (✓) to open the menus.

2 Use UP ARROW (▲) or DOWN ARROW (▼) to scroll to RETRIEVE JOB, and then press SELECT (✓).

3 Use UP ARROW (▲) or DOWN ARROW (▼) to scroll to the user name, and then press SELECT (✓).

4 Use UP ARROW (▲) or DOWN ARROW (▼) to scroll to the user or job name, and then press SELECT (✓).

5 Use UP ARROW (▲) or DOWN ARROW (▼) to scroll to PRINT. A lock symbol appears next to PRINT. Press SELECT (✓).

6 You are prompted to enter the PIN number. Use UP ARROW (▲) or DOWN ARROW (▼) to change the first number of the PIN, and then press SELECT (✓). An ✳ appears in place of the number. Repeat these steps to change the remaining three numbers of the PIN.

7 Use UP ARROW (▲) or DOWN ARROW (▼) to scroll to the number of copies, and then press SELECT (✓).

Deleting a private job

A private job is automatically deleted after the user releases it for printing, unless the user selects the **Stored Job** option in the printer driver. (In order to store a job, the printer must have an optional hard disk installed.)

Note

If you turn the printer power off, all quick copy, proof and hold, and private jobs are deleted. A private job can also be deleted at the printer control panel before it is ever printed.

To delete a private job

1   Press SELECT (✓) to open the menus.

2   Use UP ARROW (▲) or DOWN ARROW (▼) to scroll to RETRIEVE JOB, and then press SELECT (✓).

3   Use UP ARROW (▲) or DOWN ARROW (▼) to scroll to the user name, and then press SELECT (✓).

4   Use UP ARROW (▲) or DOWN ARROW (▼) to scroll to the user or job name, and then press SELECT (✓).

5   Use UP ARROW (▲) or DOWN ARROW (▼) to scroll to DELETE, and then press SELECT (✓). (A lock symbol appears next to DELETE.)

6   You are prompted to enter the PIN number. Use UP ARROW (▲) or DOWN ARROW (▼) to change the first number of the PIN, and then press SELECT (✓). An ✳ appears in place of the number. Repeat these steps to change the remaining three numbers of the PIN.

3 Managing and maintaining the printer

This section provides information about the following topics:

Using the embedded Web server

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 control status information
- set the type of media loaded in each tray
- determine the remaining life on all supplies and order new ones
- view and change tray configurations
- view and change the printer control panel menu configuration
- view and print internal pages
- receive notification of printer and supplies events
- view and change network configuration

The embedded Web server feature requires at least 48 MB of RAM and an HP Jetdirect print server in order to connect to your network. The HP LaserJet 2300n printer HP LaserJet 2300dn printer, and HP LaserJet 2300dtn printer already meet these requirements. The HP LaserJet 2300d printer requires an HP Jetdirect print server, and the HP LaserJet 2300L printer and HP LaserJet 2300 printer require 16 MB of RAM and an HP Jetdirect print server.

To use the embedded Web server, you must have Microsoft Internet Explorer 5.01 and later or Netscape 6.2 and later for Windows, Mac OS, and Linux (Netscape only). Netscape Navigator 4.7 is required for HP-UX 10 and HP-UX 11. 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. You do not have to have Internet access to open and use the embedded Web server.

When the printer is directly connected to a computer, the embedded Web server is supported for Windows 95 and later. In order to use the embedded Web server with a direct connection, you must choose the Custom installation option when you install the printer driver. Select the option to load Printer Status and Alerts. The proxy server is installed as part of the Printer Status and Alerts software.

When the printer is connected to the network, the embedded Web server is automatically available.

Opening the embedded Web server

1   In a supported Web browser on your computer, type the IP address for the printer. (To find the IP address, print a configuration page. For more information about printing a configuration page, see "Configuration page" on page 72.)

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 **Network** tab. Click the tab that you want to view.

3   See the following sections for more information about each tab.

Information tab

The Information pages group consists of the following pages.

- **Device Status.** This page shows the printer status and shows the life remaining of HP supplies, with 0 percent representing that a supply is empty. The page also shows the type and size of print media set for each tray. To change the default settings, click **Change Settings**.
- **Configuration page.** This page shows the information found on the printer configuration page.
- **Supplies Status.** This page shows the life remaining of HP supplies, with 0 percent representing that a supply is empty. This page also provides supplies part numbers. To order new supplies, click **Order Supplies** in the **Other Links** area of the window. To visit any website, you must have Internet access.
- **Event log.** This page shows a list of all printer events and errors.
- **Device information.** This page also shows the printer network name, address, and model information. To change these entries, click **Device Information** on the **Settings** tab.
- **Control panel**. Click this button to view the current status of the printer's control panel.

Settings tab

This tab allows you to configure the printer from your computer. The **Settings** tab can be password protected. If this printer is networked, always consult with the printer administrator before changing settings on this tab.

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

- **Configure Device.** Configure all printer settings from this page. This page contains the traditional menus found on printers using a control panel display. These menus include **Information**, **Paper Handling**, and **Configure Device**.
- **Alerts.** Network only. Set up to receive e-mail alerts for various printer and supplies events.
- **Email.** Network only. Used in conjunction with the Alerts page to set up incoming and outgoing e-mail.
- **Security.** Set a password that must be entered to gain access to the **Settings** and **Networking** tabs. Enable and disable certain features of the EWS.
- **Other Links.** Add or customize a link to another website. This link is shown in the **Other Links** area on all embedded Web server pages. These permanent links always appear in the **Other Links** area: **HP Instant Support™**, **Order Supplies**, and **Product Support**.
- **Device Information.** Name the printer and assign an asset number to it. Enter the name and e-mail address for the primary contact who will receive information about the printer.
- **Language.** Determine the language in which to display the embedded Web server information.
- **Time Services**. Set the printer to retrieve the date and time from a network server at regular intervals.

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. This tab will not appear if the printer is directly connected to a computer, or if the printer is connected to a network using anything other than an HP Jetdirect print server card.

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 websites. Connecting might require that you close the embedded Web server and reopen it.

● **HP Instant Support™.** Connects you to the HP website to help you find solutions. This service analyzes your printer error log and configuration information to provide diagnostic and support information specific to your printer.

● **Order Supplies.** Click this link to connect to the HP website and order genuine HP supplies, such as print cartridges and media.

● **Product Support.** Connects to the support site for the HP color LaserJet 9500 series printer. Then, you can search for help regarding general topics.

Using HP Web Jetadmin software

HP Web Jetadmin 7.0 is a Web-based software solution for remotely installing, monitoring, and troubleshooting network-connected peripherals. The intuitive browser interface simplifies cross-platform management of a wide range of devices, including HP and non-HP printers. Management is proactive, allowing network administrators the ability to resolve printer issues before users are affected. Download this free, enhanced-management software at http://www.hp.com/go/webjetadmin_software. To obtain plug-ins to HP Web Jetadmin, click **plug-ins**, and then click **applications**.

If installed on a host server, HP Web Jetadmin is available to any client through a supported Web browser (such as Microsoft Internet Explorer 4.*x* or Netscape Navigator 4.*x* or later) by browsing to the HP Web Jetadmin host.

Using Printer Status and Alerts

The Printer Status and Alerts software is available to users of both networked and directly connected printers. This software allows you to view the embedded Web server information for a particular printer. It also generates messages on the computer regarding the status of the printer and print jobs. Depending on how the printer is connected, you can receive different messages.

- **Networked printers**
  You can receive alert messages that appear when you are printing to a particular printer if that printer experiences a problem but it can continue to print. Example problems include a tray that is open, a print cartridge that is low, or a condition that prevents printing (such as paper is out, or a print cartridge is empty).

- **Directly connected printers (parallel and USB)**
  You can receive alert messages that appear when the printer experiences a problem but it can continue printing or a problem that prevents it from printing. You can also receive messages just when supplies are low.

You can set alert options for a single printer that supports Printer Status and Alerts, or you can set alert options for all printers that support Printer Status and Alerts. For networked printers, these alerts only appear for your jobs.

Note that even if you are setting alert options for all printers, not all options you select can apply to all printers. For example, if you select the option for notifying you when the print cartridge is low, then all directly connected printers that support Printer Status and Alerts will generate a message when the print cartridge is low. However, none of the networked printers will generate this message, nor will directly connected printers that do not support Printer Status and Alerts.

To choose which status messages appear

1. Open Printer Status and Alerts in one of these ways:

   - Double-click the **Printer Status and Alerts** tray icon, which is in the Tray Manager.

   - On the **Start** menu, point to **Program**s, point to **Printer Status and Alert**s, and click **Printer Status and Alerts**.

2. Click the **Options** icon in the left pane.

3. In the **For** field, select the printer driver for this printer, or select **All Printers**.

4. Clear the options for the messages you do not want to appear, and select the options for the messages you do want to appear.

5. Under Status check rate, select how frequently you want the software to update the printer status information that the software uses to generate the messages. Status Check Rate might not be available if the printer administrator has restricted the rights to this function.

To view status messages and information

On the left side of the window, select the printer for which you want to see information. Information provided includes status messages, supplies status, and printer capabilities. You can also click the **Job History** (clock) icon at the top of the Printer Status and Alerts window to view a list of previous jobs sent to the printer from your computer.

Managing and configuring printer drivers

Your system or network administrator can use the driver management and configuration solution to configure printer drivers before you install and deploy them within your environment. This is helpful when you configure printer drivers for multiple workstations or printers that share the same configuration.

When you preconfigure your printer driver to match the printer hardware, you can gain access to all of the printer accessories through the driver. You can also configure most driver feature settings. Five of the driver features can be "locked." This means that you can choose not to allow users to change the duplex, print color as gray, input tray, output tray, and media type settings. (Some features might not apply to all printers. For example, some printers do not include color printing or duplexing.)

The driver management and configuration solution saves time and reduces management costs. Previously, if an administrator wanted to configure printer drivers, the configuration had to be completed at each client workstation. Because the driver management and configuration solution offers multiple configuration options, administrators can create a single configuration, in a central location, that best fits their software installation and deployment strategy.

The driver management and configuration solution also gives administrators more control over their printing environment, because they can deploy drivers that share the same configuration across an entire organization. They can use the "lock" feature to support organization initiatives. For example, if a printer includes a duplexer, locking the duplex setting ensures that all print jobs are printed on two sides to save paper. All of the controls can be deployed from a single computer.

Two methods are available:

- HP Web Jetadmin software plug-in
- customization utility

Regardless of the configuration method that is used, one configuration can be shared by all printer drivers for a given printer model with one pass through either the plug-in or the utility. The single configuration provides support for multiple operating systems, printer driver languages, and localized language versions.

A single configuration file is associated with all supported drivers, and can be modified by using either the plug-in or the utility.

HP Web Jetadmin software plug-in

A driver management and configuration plug-in is available for the HP Web Jetadmin software. You can use the plug-in to configure the printer drivers before installation and deployment. This method for managing and controlling printer drivers provides a complete, end-to-end solution that you can use to set up and configure the printer, the print path (queue), and the client computers or workstations. The following activities are included in the workflow:

- Discover and configure the printer(s).
- Discover and configure the print path on the server(s). You can have multiple servers configured in a batch, or multiple printers (of the same model type) using a single server.
- Obtain the printer driver(s). You can install multiple drivers for each print queue that is connected to a server in environments that support multiple operating systems.
- Run the configuration editor (the editor is not supported for some older drivers).
- Deploy the configured printer drivers to the server(s).
- Instruct the end-users to connect to the print server. The configured driver for their operating system is automatically deployed to their computer.

Administrators can use the HP Jetadmin software plug-in to deploy configured printer drivers using a silent, batch, or remote process. Obtain the HP Web Jetadmin software plug-in from http://www.hp.com/go/webjetadmin_software.

Customization utility

Administrators can use a customization utility to create a custom installation package that includes only the components that are needed within a specific organization or operating environment. The customization utility is available in two places:

● on the CD-ROM that comes with the printer (the utility is one of the installer options)

● in the printing system software that is available for downloading from the HP website for the printer model (http://www.hp.com/lj2300)

The installation procedure prompts the administrator to select components from the contents of the printing system. During this process, the administrator is prompted to configure the printer driver settings, if the selected drivers support preconfiguration. The process yields a customized installation package that the administrator can deploy to install the configured printer drivers on the client computers and workstations. The customization utility supports silent and batch operations.

Managing the print cartridge

This section provides information about HP print cartridges, how to store them, how to identify genuine ones, and their life expectancy. Information also appears about non-HP print cartridges.

- "HP print cartridges" on page 68
- "Non-HP print cartridges" on page 68
- "Print-cartridge authentication" on page 68
- "Print-cartridge storage" on page 68
- "Print-cartridge life expectancy" on page 69
- "Checking the supply level" on page 69
- "Cartridge low and cartridge out conditions" on page 70

HP print cartridges

When you use a genuine new HP print cartridge, part number Q2610A (6,000-page cartridge), you can obtain several types of information, such as the following:

- amount of toner remaining
- estimated number of pages remaining
- number of pages printed
- other supplies information

Non-HP print cartridges

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

If you use a non-HP print cartridge, the printer is unable to report the levels of the supplies for the printer, calculation of the number of pages remaining, and cartridge-usage information. The printer does report a non-HP print cartridge with a message on the control panel display (`Non-HP cartridge detected`).

If the non-HP print cartridge was sold to you as a genuine HP product, please call the HP fraud hotline. (See "Contacting the HP fraud hotline" on page 124.)

Print-cartridge authentication

The printer will let you know that a print cartridge is not a genuine HP print cartridge when you insert it into the printer.

If the printer control panel message states that this is not a genuine HP print cartridge and you believe you purchased an HP print cartridge, call the HP fraud hotline. See "Contacting the HP fraud hotline" on page 124.

Print-cartridge storage

Do not remove the print cartridge from its package until you are ready to use it. The shelf life of a print cartridge in an unopened package is approximately 2.5 years.

CAUTION   To prevent damage to the print cartridge, do not expose it to light for more than a few minutes.

Print-cartridge life expectancy

The life of the print cartridge depends on the amount of toner that print jobs require and the length of life for the components inside the cartridge. When printing text at 5 percent coverage (typical for a business letter), an HP print cartridge lasts an average of 6,000 pages. This assumes that toner density is set to 3 and EconoMode is off. (These are the default settings. For details about these settings, see the description of `ECONOMODE` and `TONER DENSITY` in "Print Quality submenu" on page 151.)

At any time, you can verify life expectancy by checking the supply level, as described in "Checking the supply level" on page 69.

Checking the supply level

You can check the supply (toner) level using the printer control panel, the embedded Web server, printer software, or HP Web Jetadmin.

To check the supply level using the control panel

1   Press ✓ (SELECT button) to open the menus.

2   Use ▲ (UP button) or ▼ (DOWN button) to scroll to `INFORMATION`, and then press SELECT (✓).

3   Use ▲ (UP button) or ▼ (DOWN button) to scroll to `PRINT SUPPLIES STATUS PAGE`, and then press ✓ (SELECT button). See "Supplies status page" on page 74 for information about the supplies status page.

To check the supply level using the embedded Web server

1   In your Web browser, enter the IP address for the printer home page. This takes you to the printer status page. (See "Opening the embedded Web server" on page 62.)

2   On the left side of the screen, click **Supplies Status**. This takes you to the supplies status page, which provides supply level information. (See "Supplies status page" on page 74 for information about the supplies status page.)

To check the supply level using the printer software

Three things are required to use this feature:

●   The Printer Status and Alerts software on the CD-ROM that came with the printer must be enabled on your computer. (See "Using Printer Status and Alerts" on page 65.)

●   The printer must be directly connected to your computer with a parallel cable.

●   You must have access to the Internet.

1   At the bottom right of your screen, double-click the **Printer** icon. This opens the status window.

2   On the left side of the status window, click the **Printer** icon from which you want to obtain status.

3   At the top of the status window, click the **Supplies** link. You can also scroll down to **Supplies Status**.

Note   If you want to order supplies, click **Order Supplies**. This opens a browser that produces a URL from which to purchase supplies. Select the supplies you wish to order and finish the ordering process.

To check the supply levels using HP Web Jetadmin

In HP Web Jetadmin, select the printer device. The device status page shows supply-level information.

Cartridge low and cartridge out conditions

The printer alerts you if the print cartridge is low on toner or out of toner.

When the cartridge is low on toner

When the cartridge is low on toner, the printer control panel shows the `ORDER CARTRIDGE` message. The `ORDER CARTRIDGE` message first appears when about 10 percent of the toner remains in the print cartridge (at 5 percent coverage, about 600 pages remaining).

The default is for the printer to continue printing until the toner runs out, but you might prefer to have the printer stop instead of continuing when the `ORDER CARTRIDGE` message first appears — for example, if you want print quality to remain consistently high during print jobs, or if you do not want the cartridge to run out during a long print job. To configure the printer to stop, set `CARTRIDGE LOW=STOP` (in the System Setup submenu of the Configure Device menu). (See "CARTRIDGE LOW" on page 155.) Then, when `ORDER CARTRIDGE` appears, the printer will stop printing. You can resume printing by pressing ✓ (SELECT button) for each print job.

When the cartridge is out of toner or drum life

The `REPLACE CARTRIDGE` message appears in one of these situations:

- **When the print cartridge is out of toner.** If `CARTRIDGE OUT` is set to `CONTINUE` (in the System Setup submenu of the Configure Device menu), the printer continues printing without interaction until the cartridge reaches the end of drum life. HP does not guarantee print quality after the `REPLACE CARTRIDGE` message is first displayed. Replace the print cartridge as soon as possible. (See "Ordering parts, accessories, and supplies" on page 116.) The `REPLACE CARTRIDGE` message remains until you replace the print cartridge. If `CARTRIDGE OUT` is set to `STOP`, the printer stops printing until you replace the print cartridge or resume printing by pressing ✓ (SELECT button) for each print job.

- **When the drum life of the print cartridge is out**. You must replace the print cartridge to continue printing. No override is possible, even if toner remains in the cartridge. (See "Ordering parts, accessories, and supplies" on page 116.) This situation occurs to protect the printer.

Configuring e-mail alerts

You can use HP Web Jetadmin or the embedded Web server to configure the system to alert you of problems with the printer. The alerts take the form of e-mail messages to the e-mail account or accounts that you specify.

You can configure the following:

● the device that you want to monitor (in this case, the printer)

● what alerts are to be received (for example, alerts for jams, paper out, `ORDER CARTRIDGE`, `REPLACE CARTRIDGE`, and cover open)

● the e-mail account to which the alerts should be forwarded

For	See the following section
HP Web Jetadmin	● "Using HP Web Jetadmin software" on page 64 for general information about HP Web Jetadmin ● HP Web Jetadmin online Help for details about alerts and how to set them up
Embedded Web server	● "Using the embedded Web server" on page 62 for general information about the embedded Web server ● Embedded Web server online Help for details about alerts and how to set them up

Checking the printer configuration

At the printer control panel, you can print pages that give details about the printer and its current configuration. The following information pages are described here:

● "Menu map" on page 72
● "Configuration page" on page 72
● "Supplies status page" on page 74 (includes information about print-cartridge use)
● "PS or PCL font list" on page 76

For a complete list of printer information pages, see the Information menu at the printer control panel ("Information menu" on page 145).

Keep these pages nearby for troubleshooting. They are also useful if you contact HP Customer Care.

Menu map

Print the menu map to see the current settings for the menus and items available at the printer control panel.

To print a menu map

1 Press ✓ (SELECT button) to open the menus.

2 Use ▲ (UP button) or ▼ (DOWN button) to scroll to INFORMATION, and then press ✓ (SELECT button).

3 Use ▲ (UP button) or ▼ (DOWN button) to scroll to PRINT MENU MAP, and then press ✓ (SELECT button).

You might want to store the menu map near the printer for reference. The content of the menu map varies, depending on the options currently installed in the printer. (Many of these values can be overridden in the program or printer driver.)

For a complete list of control panel items and possible values, see "Control panel menus" on page 143. To change a control panel setting, see "Changing control panel settings" on page 25.

Configuration page

Use the configuration page to view current printer settings, to help troubleshoot printer problems, or to verify installation of optional accessories, such as memory (DIMMs), trays, and printer languages.

Note   If an HP Jetdirect print server is installed, an HP Jetdirect configuration page prints as well. The IP address of the HP Jetdirect print server appears on this page.

To print a configuration page at the control panel

1 Press ✓ (SELECT button) to open the menus.

2 Use ▲ (UP button) or ▼ (DOWN button) to scroll to INFORMATION, and then press ✓ (SELECT button).

3 Use (▲) (UP button) or ▼ (DOWN button) to scroll to PRINT CONFIGURATION, and then press ✓ (SELECT button).

An example of the configuration page follows. The content of the configuration page varies, depending on the options currently installed in the printer.

| **1** | Printer Information | Lists the model, serial number, page counts, and other information for the printer. |
2	Event Log	Lists the number of entries in the event log, the maximum number of entries viewable, and the last three entries.
3	Installed Personalities and Options	Lists all printer languages that are installed (such as PS and PCL) and lists options that are installed in each DIMM slot and EIO slot.
4	Memory	Lists printer memory, PCL Driver Work Space (DWS), and resource saving information.
5	Security	Lists the status of the printer control panel lock, control panel password, and disk drive (if one is installed in the printer).
6	Paper Trays and Options	Lists the size settings for all trays and lists optional paper-handling accessories that are installed.

Supplies status page

Use the supplies status page to obtain information about the print cartridge installed in the printer, the amount of life left in the print cartridge, and the number of pages and jobs that have been processed.

Note   You can also obtain supplies status information in the embedded Web server. For details, see "Using the embedded Web server" on page 62.

To print a supplies status page at the control panel

1   Press ✓ (SELECT button) to open the menus.

2   Use ▲ (UP button) or ▼ (DOWN button) to scroll to INFORMATION, and then press ✓ (SELECT button).

3   Use ▲ (UP button) or ▼ (DOWN button) to scroll to PRINT SUPPLIES STATUS PAGE, and then press ✓ (SELECT button).
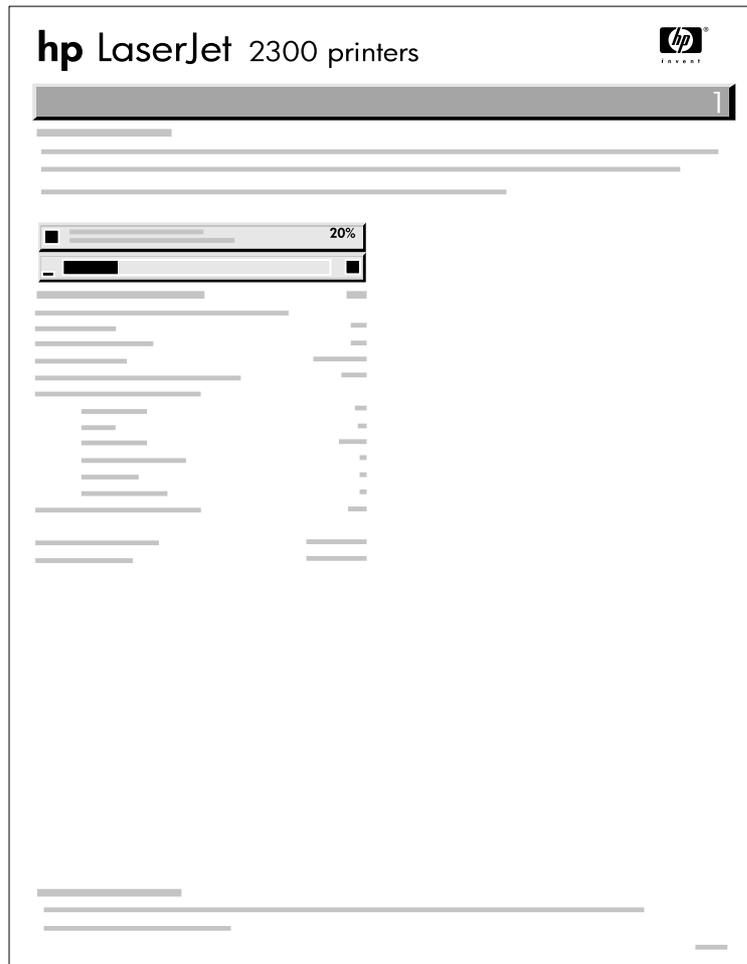
1	Supplies website	Lists the local website for ordering supplies through the Internet.
2	Cartridge information	Provides information about the estimated number of pages remaining for the amount of toner left in the cartridge, status of the toner supply, and print-cartridge serial number.
3	Printing statistics	Lists statistics about total number of pages and jobs processed using this print cartridge and page count by paper size.
4	Manufacture information	Shows the installation date and last use date for this print cartridge.
5	Recycling website	Lists the website for information about returning used HP print cartridges.

PS or PCL font list

Use the font lists to see which fonts are currently installed in the printer. (The font lists also show which fonts are resident on an optional hard disk accessory or flash DIMM.)

To print a PS or PCL font list

1   Press ✓ (SELECT button) to open the menus.

2   Use ▲ (UP button) or ▼ (DOWN button) to scroll to INFORMATION, and then press ✓ (SELECT button).

3   Use ▲ (UP button) or ▼ (DOWN button) to scroll to PRINT PS FONT LIST or PRINT PCL FONT LIST, and then press ✓ (SELECT button).

The PS font list shows the PS fonts installed, and gives a sample of those fonts. The following information can be found on the PCL font list:

●   **Font** gives the font names and samples.

●   **Pitch/Point** indicates the pitch and point size of the font.

●   **Escape Sequence** (a PCL 5e programming command) is used to select the designated font. (See the legend at the bottom of the font list page.)

Note   For information about using printer commands to select a font with MS-DOS® programs, see "Selecting PCL 5e fonts" on page 171.

●   **Font #** is the number used to select fonts at the printer control panel (not in the program). Do not confuse the font # with the font ID, described below. The number indicates the DIMM slot where the font is stored.

   •   SOFT: Downloaded fonts, which stay resident in the printer until other fonts are downloaded to replace them, or until the printer power is turned off.

   •   INTERNAL: Fonts that permanently reside in the printer.

●   **Font ID** is the number you assign to soft fonts when you download them through software.

Cleaning the printer

Over time, particles of toner and paper accumulate inside the printer. This can cause print-quality problems during printing. Cleaning the printer eliminates or reduces these problems.

Clean the paper path and print-cartridge areas every time that you change the print cartridge or whenever print-quality problems occur. As much as possible, keep the printer from dust and debris.
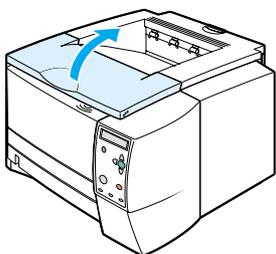
Cleaning the outside

Clean the outside of the printer with a cloth that has been dampened with water.

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

Cleaning the paper path and print-cartridge areas

Over time, particles of toner and paper accumulate inside the printer. This can cause print-quality problems during printing. Cleaning the printer eliminates or reduces these problems.

To clean the inside of the printer

1   Turn the printer off and unplug the power cord.

2   Open the top cover.

3   Remove the print cartridge.
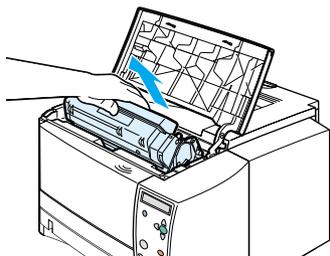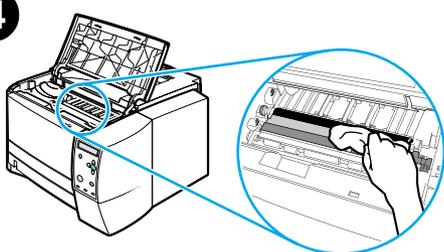
CAUTION
To prevent damage to the print cartridge, do not expose it to light for more than a few minutes.

Be careful not to touch the transfer roller (the black, rubber roller located underneath the print cartridge). Skin oils on the roller can cause print-quality problems.
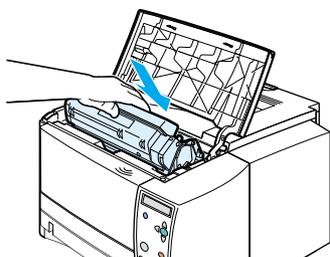
4   With a dry, lint-free cloth, wipe any residue from the paper path area and the print cartridge cavity.

5   Reinstall the print cartridge and close the top cover.

Note
If the print cartridge is difficult to reinstall, make sure that the registration plate has been flipped back down into position and that you have pushed the print cartridge firmly in place.

6   Plug in the power cable and turn the printer on.

Cleaning the fuser

Run the printer cleaning page to keep the fuser free of toner and paper particles that can sometimes accumulate. Accumulation of toner and particles can cause specks to appear on the front or back side of your print jobs. (See "Toner specks" on page 104.)

To ensure optimum print quality, HP recommends that you use the cleaning page every time that you replace the print cartridge or on an automatic interval that you can set up.

The cleaning procedure takes about 2.5 minutes to complete. A message (either `CREATING CLEANING PAGE` or `CLEANING`) appears on the printer control panel display while the cleaning is taking place.

To run the cleaning page

In order for the cleaning page to work properly, print the page on copier-grade paper (not bond, heavy, or rough paper).

1   If your printer model includes a duplexer, open the rear output bin.

2   Press ✓ (SELECT button) to open the menus.

3   Use ▲ (UP button) or ▼ (DOWN button) to scroll to `CONFIGURE DEVICE`, and then press ✓ (SELECT button).

4   Use ▲ (UP button) or ▼ (DOWN button) to scroll to `PRINT QUALITY`, and then press ✓ (SELECT button).

5   Use ▲ (UP button) or ▼ (DOWN button) to scroll to `CREATE CLEANING PAGE`, and then press ✓ (SELECT button).

6   Follow the instructions on the cleaning page to complete the cleaning process.

7   If your printer model includes a duplexer, close the rear output bin.

4 Problem solving

This section will help you troubleshoot and solve minor printer problems.

- "Troubleshooting checklist" on page 82
- "Troubleshooting general printing problems" on page 83
- "Printing special pages" on page 87
- "Understanding printer messages" on page 88
- "Clearing jams" on page 97
- "Troubleshooting print-quality problems" on page 102
- "Troubleshooting network printing problems" on page 107
- "Troubleshooting common Windows problems" on page 108
- "Troubleshooting common Macintosh problems" on page 109
- "Troubleshooting common PostScript problems" on page 114

Troubleshooting checklist

If the printer is not responding properly, complete the following checklist in order. If the printer does not pass a step, follow the corresponding troubleshooting suggestions.

Make sure that the printer READY light is on.	• If no lights are on, check the power cord connections. Check the power switch. Check the power source by plugging into another outlet. • If other lights are on, note the message in the control panel display and go to "Interpreting control-panel messages" on page 89.
Print a short document from a software application to verify that the computer and printer are connected and are communicating correctly.	• If the page does not print, check the cable connection between the printer and computer. Make sure that you are using the proper cable. • Check the print queue or the print spooler (the print monitor on a Macintosh computer) to see if the printer has been paused. • Verify that you have installed the HP LaserJet 2300 series printer driver. • Check the software application to make sure that you are using an HP LaserJet 2300 series printer driver and port. • If the page is interrupted during printing, go to "Troubleshooting general printing problems" on page 83.
If the problem persists, check these troubleshooting sections:	• "Printing special pages" on page 87 • "Troubleshooting general printing problems" on page 83 • "Troubleshooting network printing problems" on page 107 • "Troubleshooting common Windows problems" on page 108 • "Troubleshooting common Macintosh problems" on page 109 • "Troubleshooting common PostScript problems" on page 114

Troubleshooting general printing problems

Symptom	Possible cause	Solution
Control panel display is hard to read.	The contrast is too high or too low for your office environment.	Adjust the contrast on the control panel display (see "DISPLAY BRIGHTNESS" on page 154).
Printer selects media from the wrong tray.	The tray selection in the software application might be incorrect.	For many software applications, the paper tray selection is found under the **Page Setup** menu within the application.
		Remove any media in other trays to make the printer select from the desired tray.
		For Macintosh computers, use the HP LaserJet Utility to change the priority of the tray.
	The configured size does not match the size of the media loaded in the tray.	Change the configured size to match the size of the media loaded in the tray through the control panel.
Printer does not pull paper from tray 2 or tray 3.	The rear paper-length guide is set incorrectly (tray 2 or tray 3). The rear paper stop is set incorrectly (tray 3).	To properly set the rear guides, see "Loading tray 2 (250-sheet tray) or optional 250-sheet tray in tray 3 position" on page 32 or "Loading tray 3 (500-sheet tray)" on page 34.
		For tray 3, make sure that the leading edge of the paper stack is even. An uneven edge can prevent the lift plate from rising.
Paper curls when it exits the printer.	The paper curls when exits the top output bin.	Open the rear output bin to allow the paper to exit in a straight path through the printer.
		Turn over the paper that you are printing on.
		Reduce the fusing temperature to reduce the curling (see "FUSER MODES" on page 152).
First sheet of media jams in the print cartridge area.	A combination of high humidity and high temperature is affecting the media.	Adjust the printer for high humidity and high temperature conditions (see "MORE SEPARATION" on page 152).

Symptom	Possible cause	Solution
Print job is extremely slow.	The job might be very complex. The maximum speed of the printer cannot be exceeded even when more memory is added. Printing speeds might be automatically reduced when printing on special-sized media.	Reduce the complexity of the page or try adjusting the print-quality settings. If this problem occurs frequently, add memory to the printer.
	You are printing a PDF or PostScript (PS) file using a PCL printer driver.	Try using the PS printer driver rather than the PCL printer driver. (You can usually do this from a software program.)
	In the printer driver, **Optimize for:** is set to cardstock, heavy, rough, or bond paper.	In the printer driver, set the type to plain paper (see "Printing by type and size of media" on page 53). **Note**: If you change the setting to plain paper, the print job will print faster. However, if you are using heavy media, for best results leave the printer driver set to heavy even though printing might be slower.
Print job prints on both sides of the paper.	The printer is set for duplexing.	See "Changing the settings for a print job" on page 47 to change the setting, or see the online Help.
Print job contains only one page but the printer processes the back side of the page as well (the page comes part of the way out, and then goes back into the printer).	The printer is set for duplexing. Even if the print job contains only one page, the printer processes the back side as well.	See "Changing the settings for a print job" on page 47 to change the setting, or see the online Help. Do not try to pull the page out of the printer before duplexing is complete. Jamming might result.
Pages print, but are totally blank.	The sealing tape might still be in the print cartridge.	Remove the print cartridge and pull out the sealing tape. Reinstall the print cartridge.
	The file might have blank pages.	Check the file to make sure that it does not contain blank pages.

Symptom	Possible cause	Solution
The printer prints, but the text is wrong, garbled, or incomplete.	The printer cable is loose or defective.	Disconnect the printer cable and reconnect it. Try a print job that you know works. If possible, attach the cable and printer to another computer and try a print job that you know works. Finally, try a new cable.
	The printer is on a network or sharing device and is not receiving a clear signal.	Disconnect the printer from the network and use a parallel or USB cable to attach it directly to a computer. Print a job that you know works.
	The wrong driver was selected in the software.	Check the software's printer selection menu to make sure that an HP LaserJet 2300 series printer is selected.
	The software program is malfunctioning.	Try printing a job from another program.

Symptom	Possible cause	Solution
The printer does not respond when you select **Print** in the software.	The printer is out of paper.	Add paper.
	The printer might be in manual feed mode.	Change the printer from manual feed mode (see "MANUAL FEED" on page 149).
	The cable between the computer and the printer is not connected properly.	Disconnect and reconnect the cable.
	The printer cable is defective.	If possible, attach the cable to another computer and print a job that you know works. You might also try using a different cable.
	The wrong printer was selected in the software.	Check the software printer selection menu to make sure that an HP LaserJet 2300 series printer is selected.
	There might be a jam.	Clear any jams, paying careful attention to the duplexer area. See "Clearing jams" on page 97.
	The software for the printer is not configured for the printer port.	Check the software's printer selection menu to make sure that it is using the correct port. If the computer has more than one port, make sure that the printer is attached to the correct one.
	The printer is on a network and is not receiving a signal.	Disconnect the printer from the network and use a parallel or US B cable to attach it directly to a computer. Reinstall the printing software. Print a job that you know works. Clear any stopped jobs from the print queue.
	The printer is not receiving power.	If no lights are on, check the power cord connections. Check the power switch. Check the power source.
	The printer is malfunctioning.	Check the control panel display for messages and lights to determine if the printer is indicating an error. Note any message and see "Interpreting control-panel messages" on page 89.

Printing special pages

Special pages within the memory of the printer can help you to diagnose and learn about problems with your printer.

● **Configuration page**

The configuration page lists many of the current settings and properties of the printer. For information about how to print the configuration page, see "Configuration page" on page 72. If you have an EIO print server card installed, a second page (the Jetdirect page) prints that lists all of the HP Jetdirect information.

● **Font list**

You can print a font list using the control panel (see "PS or PCL font list" on page 76) or (for Macintosh computers) the HP LaserJet Utility (see "HP LaserJet Utility" on page 15).

● **Supplies status page**

Use the supplies status page to obtain information about the print cartridge installed in the printer, the amount of life left in the print cartridge, and the number of pages and jobs that have been processed (see "Supplies status page" on page 74).

Understanding printer messages

Printer messages appear on the printer control panel display to relay the normal status of the printer (such as `Processing job`) or an error condition (such as `CLOSE FRONT DOOR`) that needs attention. "Interpreting control-panel messages" on page 89 lists the most common messages that require attention or that might raise questions. Messages are listed in alphabetical order first, with numeric messages at the end of the list.

Using the printer online Help system

This printer features an online Help system on the control panel that provides instructions for resolving most printer errors. Certain control panel messages alternate with instructions about gaining access to the online Help system.

Whenever a message alternates with `For help press ?`, press **?** (HELP button) to view the help and use ▲ (UP button) and ▼ (DOWN button) to scroll through the message.

To exit the online Help system, press **?** (HELP button).

Resolving persistent messages

Some messages (for example, requests to load a tray or a message that a previous print job is still in the printer memory) allow you to press ✓ (SELECT button) to print, or to press CANCEL JOB to clear the job and eliminate the message.

If a message persists after performing all of the recommended actions, contact an HP-authorized service or support provider. (See "Contacting HP" on page 123 or go to http://www.hp.com/support/lj2300.)

Interpreting control-panel messages

Message	Description	Recommended action
Access denied menus locked	The printer control panel function you are trying to use has been locked to prevent unauthorized access.	See your network administrator.
Canceling... [JOBNAME]	The printer is canceling a job. The message continues while the job is stopped, the paper path is cleared, and any remaining incoming data on the active data channel is received and discarded.	No action necessary.
Checking paper path	The printer is checking for possible jams or paper that was not cleared from the printer.	No action necessary.
Checking printer	The printer is checking for possible jams or paper that was not cleared from the printer.	No action necessary.
CHOSEN PERSONALITY NOT AVAILABLE alternates with To continue press ✓	The printer received a request for a personality (printer language) that does not exist in the printer. The print job is canceled.	Print the job using a printer driver for a different printer language, or add the requested language to the printer (if available). To see a list of available personalities, print a configuration page. (See "Configuration page" on page 72.)
Clearing paper path	The printer jammed or the printer was turned on and media was detected in a wrong location. The printer is automatically attempting to eject the pages.	Wait for the printer to finish trying to clear the pages. If it cannot, a jam message will appear on the control panel display.
Event log empty	You are attempting to view an empty event log by selecting SHOW EVENT LOG from the control panel.	No action necessary.
Cartridge installed	This message appears for approximately 10 seconds after you install a new, genuine HP cartridge.	No action necessary.
INSTALL CARTRIDGE alternates with For help press ?	The print cartridge is missing and must be reinstalled for printing to continue.	Replace or correctly reinstall the print cartridge.
LOAD TRAY [XX] [TYPE] [SIZE]	The tray that is indicated is configured for a specific type and size of media needed by a print job, but the tray is empty. All other trays are also empty.	Load the requested media in the tray that is indicated.

Message	Description	Recommended action
LOAD TRAY [XX] [TYPE] [SIZE] alternates with To use another tray press ✓ or For help press **?** or To continue press ✓	A job is sent that requires a specific type and size that is not available in the tray that is indicated.	Perform one of these steps: ● Load the requested media into the indicated tray and press ✓ (SELECT button). ● Press ✓ to use a type and size that are available in another tray.
MANUALLY FEED [TYPE] [SIZE] alternates with To use another tray press ✓ or For help press **?** or To continue press ✓	The printer is waiting for media to be loaded in tray 1 for manual feed.	Perform one of these steps: ● Load the requested media into the tray 1 and press ✓ (SELECT button). ● Press ✓ (SELECT button) to use a type and size that are available in another tray.
No job to cancel	The CANCEL JOB button was pressed, but there is no active job or buffered data to cancel. The message is displayed for approximately 2 seconds before the printer returns to the ready state.	No action necessary.
ORDER CARTRIDGE LESS THAN [XXXX] PAGES	This message appears when the CARTRIDGE LOW setting in the System Setup submenu is set to CONTINUE and the cartridge has only 10 percent of its toner remaining (see "CARTRIDGE LOW" on page 155).	Make sure that you have a new cartridge ready (see "Ordering parts, accessories, and supplies" on page 116).
Paused alternates with To return to ready press RESUME key	The printer is paused but continues to receive data until the memory is full. The printer is not experiencing an error.	Press PAUSE/RESUME.
SIZE MISMATCH TRAY [XX]= [SIZE] alternates with Ready For help press **?**	The tray indicated is loaded with a different size of paper than the size configured for the tray.	Load the tray with the size configured for the tray. Make sure that the guides are positioned correctly in the tray, and then make sure that the switch in the tray is set correctly to Custom or Standard.
TRAY [XX] EMPTY [TYPE] [SIZE] alternates with Ready For menus press ✓	The tray is out of media.	Load paper in the empty tray to clear the message. If you do not load the specified tray, the printer will continue printing from the next available tray with the same paper size and type, and the message will continue to appear.

Message	Description	Recommended action

`TYPE MISMATCH`
`TRAY [XX]=[TYPE]`
alternates with
`Ready`
`For help press` **?**
	The system detected a different type of media from the type specified for the tray in the paper path coming from tray `XX`.	**1** Verify that the correct media is loaded in the tray.
		2 Check the driver settings to make sure that the expected media type is selected.
		3 Check the media-type settings on the printer control panel to make sure that the printer is set for the media type that is in the tray.
		4 Refer to the printer software online Help for more information.

`USE TRAY [XX]`
`[TYPE] [SIZE]`
alternates with
`To change press` ▲/▼
`To continue press` ✔
	The printer did not detect the type and size of media requested. The message shows the most likely type and size available and the tray in which they are available.	Press ✔ (SELECT button) to accept the values in the message, or use ▲ (UP button) and ▼ (DOWN button) to scroll through the available choices.

`10.XX.YY SUPPLIES`
`MEMORY ERROR`
`For help press` **?**
	An error has occurred in one or more of the printer's supplies. Values of `XX` and `YY` are listed below:
	`XX`
	00 = memory is defective
	01 = memory is missing
	`YY`
	00 = black print cartridge
		1 Turn the printer power off, and then turn the printer power on to clear the message.
		2 If the message persists, contact an HP-authorized service or support provider (see "Contacting HP" on page 123).

`13.XX.YZ JAM IN` `[LOCATION]`	A jam has occurred in the specified location.	Remove jammed media from the specified location. (See "Clearing jams" on page 97.) If the message persists after all jams have been cleared, a sensor might be stuck or broken. Contact an HP-authorized service or support provider (see "Contacting HP" on page 123).
`20 INSUFFICIENT MEMORY` alternates with `To continue press` ✔	The printer received more data than can fit in its available memory. You might have tried to transfer too many macros, soft fonts, or complex graphics.	Press ✔ (SELECT button) to print the transferred data (some data might be lost), and then simplify the print job or install additional memory. (See "Installing memory" on page 165.)
`21 PAGE TOO COMPLEX` alternates with `To continue press` ✔	The data (dense text, rules, raster or vector graphics) sent to the printer was too complex.	**1** Press ✔ (SELECT button) to print the transferred data. (Some data might be lost.) **2** If this message appears often, simplify the print job or install additional memory. (See "Installing memory" on page 165.)

Message	Description	Recommended action

`22 EIO [X]`
`BUFFER OVERFLOW`
alternates with
`To continue press ✔`
	Too much data was sent to the EIO card in the specified slot `[X]`. An improper communications protocol might be in use.	1 Press ✔ (SELECT button) to clear the message. (The job will not be printed.)
		2 Check the host configuration. If the message persists, contact an HP-authorized service or support provider (see "Contacting HP" on page 123).

`22 PARALLEL I/O`
`BUFFER OVERFLOW`
alternates with
`To continue press ✔`
	Too much data was sent to the parallel port.	1 Check for a loose cable connection and be sure to use a high-quality cable. Some non-HP parallel cables might be missing pin connections or might otherwise not conform to the IEEE-1284 specification. (See "Ordering parts, accessories, and supplies" on page 116.)
		2 This error can occur if the driver you are using is not IEEE-1284 compliant. For best results, use an HP driver that came with the printer. (See "Printer software" on page 11.)
		3 Press ✔ (SELECT button) to clear the error message. (The job will not be printed.)
		4 If the message persists, contact an HP-authorized service or support provider (see "Contacting HP" on page 123).

`22 SERIAL I/O`
`BUFFER OVERFLOW`
alternates with
`To continue press ✔`
	Too much data was sent to the serial port.	Press ✔ (SELECT button) to clear the error message. (The job will not be printed.)

`22 USB I/O` `BUFFER OVERFLOW`	Too much data was sent to the USB port.	Press ✔ (SELECT button) to clear the error message. (The job will not be printed.)

`40 EIO [X] BAD`
`TRANSMISSION`
alternates with
`To continue press ✔`
	The connection has been broken between the printer and the EIO card in the specified slot `[X]`.	Press ✔ (SELECT button) to clear the error message and continue printing.

`41.X PRINTER ERROR`
alternates with
`To continue press ✔`
	A temporary printing error occurred.	1 Press ✔ (SELECT button). The page containing the error automatically reprints if jam recovery is enabled.
		2 Turn the printer power off, and then turn the printer power on.
		3 If the message persists, contact an HP-authorized service or support provider (see "Contacting HP" on page 123).

Message	Description	Recommended action

`41.3 UNEXPECTED`
`SIZE IN TRAY [XX]`
 	
alternates with
 	
`LOAD TRAY [XX]:`
`[TYPE] [SIZE]`
	This is typically caused if two or more sheets stick together in the printer or if the tray is not properly adjusted.	1 Reload the tray with the correct paper size.
		2 Press ✓ (SELECT button) to scroll to `TRAY XX SIZE=`. Reconfigure the size in a tray so that the printer will use a tray that contains the size required for the print job.
		3 If the error does not clear, turn the printer power off, then turn the printer power on.
		4 If the message persists, contact an HP-authorized service or support provider (see "Contacting HP" on page 123).

`41.5 UNEXPECTED`
`TYPE IN TRAY XX`
 	
alternates with
 	
`LOAD TRAY [XX]:`
`[TYPE] [SIZE]`
	The printer detected a paper type different than what it was expecting.	1 Reload the tray with the correct paper type.
		2 Press ✓ (SELECT button) to scroll to `TRAY XX TYPE=`. Reconfigure the size in a tray so that the printer uses a tray that contains the type required for the print job.
		3 If the error does not clear, turn the printer power off, and then turn the printer power on.
		4 If the message persists, contact an HP-authorized service or support provider (see "Contacting HP" on page 123).

`49.XXXXX` `PRINTER ERROR`	A critical firmware error has occurred.	1 Turn the printer power off, leave it off for 20 minutes, and then turn the printer power on. 2 If the message persists, contact an HP-authorized service or support provider (see "Contacting HP" on page 123).
`50.X FUSER ERROR` `For help press` **?**	A fuser error has occurred.	1 Turn the printer power off and then turn the printer power on. 2 If the message persists, contact an HP-authorized service or support provider (see "Contacting HP" on page 123).

`51.X`
`PRINTER ERROR`
 	
alternates with
 	
`To continue`
`turn off then on`
	A temporary printing error occurred.	1 Turn the printer power off, and then turn the printer power on.
		2 If the message persists, contact an HP-authorized service or support provider (see "Contacting HP" on page 123).

`52.X`
`PRINTER ERROR`
 	
alternates with
 	
`To continue`
`turn off then on`
	A temporary printing error occurred.	1 Turn the printer power off, and then turn the printer power on.
		2 If the message persists, contact an HP-authorized service or support provider (see "Contacting HP" on page 123).

Message	Description	Recommended action
`53.XY.ZZ` `PRINTER ERROR`	There is a problem with the printer memory. The DIMM that caused the error will not be used. Values of `X`, `Y`, and `ZZ` are as follows: `X` = DIMM type 0 = ROM 1 = RAM `Y` = Device location 0 = Internal memory (ROM or RAM) 1 to 3 = DIMM slot 1, 2, or 3 `ZZ` = Error number	**1** You might need to reseat or replace the specified DIMM. Turn the printer power off and then reseat the DIMM that caused the error. **2** Try using a different printer driver or printing a smaller file. **3** If the message persists, contact an HP-authorized service or support provider (see "Contacting HP" on page 123).

`55.X`
`PRINTER ERROR`
alternates with
`To continue`
`turn off then on`
	A temporary printing error occurred.	**1** Turn the printer power off and then turn the printer power on.
		2 Try using a different printer driver or printing a smaller file.
		3 If the message persists, contact an HP-authorized service or support provider (see "Contacting HP" on page 123).

`56.X`
`PRINTER ERROR`
alternates with
`To continue`
`turn off then on`
	A temporary printing error occurred as a result of an incorrect input or output request.	**1** Turn the printer power off, and then turn the printer power on.
		2 If the message persists, contact an HP-authorized service or support provider (see "Contacting HP" on page 123).

`57.X`
`PRINTER ERROR`
alternates with
`To continue`
`turn off then on`
	A temporary printing error occurred in one of the printer fans.	**1** Turn the printer power off, and then turn the printer power on.
		2 If the message persists, contact an HP-authorized service or support provider (see "Contacting HP" on page 123).

`58.X`
`PRINTER ERROR`
alternates with
`To continue`
`turn off then on`
	A printer error has occurred where a memory tag CPU error was detected, or there is a problem with the air sensor or power supply.	To resolve problems with the power supply:
		1 Remove the printer from any UPS supplies, additional power supplies, or power strips. Plug the printer into a wall outlet and see if this resolves the problem.
		2 If the printer is already plugged into a wall outlet, try another power source in the building that is independent of the one currently being used.
		
		The line voltage and current source at the printer location might need to be inspected to ensure that they meet the electrical specifications for the printer. (See "Electrical specifications" on page 132.)
		
		If the message persists, contact an HP-authorized service or support provider (see "Contacting HP" on page 123).

Message	Description	Recommended action

`59.X`
`PRINTER ERROR`
alternates with
`To continue`
`turn off then on`
	A temporary printing error occurred.	1 Turn the printer power off, and then turn the printer power on.
		2 If the message persists, contact an HP-authorized service or support provider (see "Contacting HP" on page 123).

`62 NO SYSTEM`	This message indicates that no system was found. The printer software system is corrupt.	1 Turn the printer power off, and then turn the printer power on. 2 If the message persists, contact an HP-authorized service or support provider (see "Contacting HP" on page 123).

`64 PRINTER ERROR`
alternates with
`To continue`
`turn off then on`
	A temporary printing error occurred in the scan buffer.	1 Turn the printer power off, and then turn the printer power on.
		2 If the message persists, contact an HP-authorized service or support provider (see "Contacting HP" on page 123).

`To continue`

Message	Description	Recommended action

`79.XXXX`
`PRINTER ERROR`
 	
alternates with
 	
`To continue`
`turn off then on`
	The printer detected a critical hardware error.	**1** Press CANCEL JOB to clear the print job from the printer memory. Turn the printer power off, and then turn the printer power on.
		2 Try printing a job from a different program. If the job prints, go back to the first program and try printing a different file. (If the message appears only with a certain program or print job, contact the software vendor for assistance.)
		
		If the message persists with different programs and print jobs, try these steps.
		
		1 Turn the printer power off.
		2 Disconnect all cables to the printer that connect it to the network or computer.
		3 Remove all memory DIMMs or third-party DIMMs from the printer. (See "Installing memory" on page 165.)
		4 Remove all EIO devices from the printer. (See "Installing an HP Jetdirect EIO card" on page 168.)
		5 Turn the printer power on.
		
		If the error no longer exists, follow these steps.
		
		1 Install each DIMM and EIO device one at a time, making sure to turn the printer power off and back on as you install each device.
		2 Replace a DIMM or EIO device if you determine that it causes the error.
		3 Reconnect all cables that connect the printer to the network or computer.

`8X.YYYY` `EIO ERROR`	The EIO accessory card in slot `[X]` has encountered a critical error.	**1** Turn the printer power off, and then turn the printer power on. **2** Turn the printer power off, reseat the EIO accessory in slot `[X]`, and then turn the printer power on. **3** Turn the printer power off, remove the EIO accessory from slot `[X]`, install it in a different EIO slot, and then turn the printer power on. **4** Replace the EIO accessory in slot `[X]`.

Clearing jams

Occasionally, media can become jammed during a print job. The following are some of the causes:

- Trays are loaded improperly or overfilled.
- Tray 2 or tray 3 is removed during a print job.
- The top cover is opened during a print job.
- The media that is being used does not meet HP specifications (see "Media specifications" on page 134).
- The media that is being used is outside of the supported size range (see "Media specifications" on page 134.)

Typical jam locations

Jams can occur at four locations:
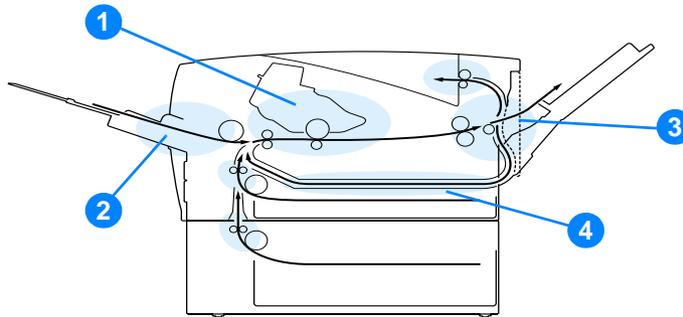
1   Print-cartridge area (see "Print-cartridge area" on page 98)

2   Input-tray areas (see "Tray 2 or tray 3 paper-feed area" on page 99)

3   Output-bin areas (see "Output areas" on page 100)

4   Duplexer area (applies only to the HP LaserJet 2300d printer, HP LaserJet 2300dn printer, and HP LaserJet 2300dtn printer) (see "Duplexer area" on page 101)

Note   Find and remove the jammed media by using the instructions provided in this section. If the location of the jam is not obvious, look first in the print cartridge area.

Be sure to remove all torn pieces of media that remain in the printer.

Loose toner might remain in the printer after a jam. This should clear after a few sheets have been printed. See "Loose toner" on page 105.

1
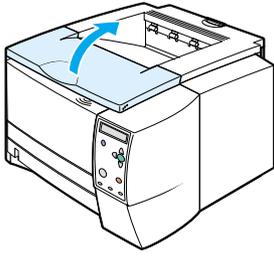
2

3

4
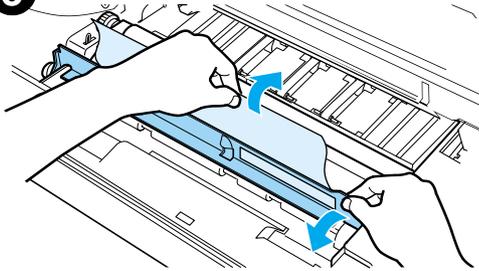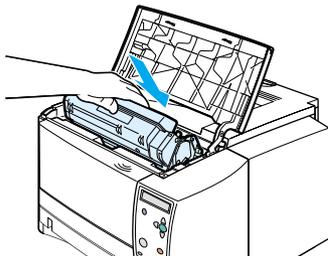
Print-cartridge area

Jams in this area might result in loose toner on the page. If you get any toner on your clothes or hands, wash them in cold water. (Hot water will set the toner into the fabric.)

1 Open the top cover.

2 Remove the print cartridge.

CAUTION
To prevent damage, do not expose the print cartridge to light for more than a few minutes. Place a piece of paper over the top of the print cartridge to shield it while it is out of the printer.

3 Carefully lift up the registration plate. If the leading edge of the print media is visible, gently pull the media toward the rear of the printer to remove it from the printer.

If the media is difficult to remove or has already entered the output area, remove the jam as described in "Output areas" on page 100.

4 When the jammed media has been removed, gently flip down the registration plate. Reinstall the print cartridge and shut the top cover.

Note
If the print cartridge is difficult to reinstall, make sure that the registration plate has been flipped back down into position and that you have pushed the print cartridge firmly in place.

If the ATTENTION light does not go out, jammed media remains inside the printer. Check the paper-feed and rear-output areas for jams. For printers that include a built-in duplexer (HP LaserJet 2300d printer, HP LaserJet 2300dn printer, and HP LaserJet 2300dtn printer), check the duplexer area.

1

2

3

4

Tray 2 or tray 3 paper-feed area

Note

If paper has entered the print cartridge area, follow the instructions in "Print-cartridge area" on page 98. It is easier to remove paper from the print cartridge area than from the paper-feed area.
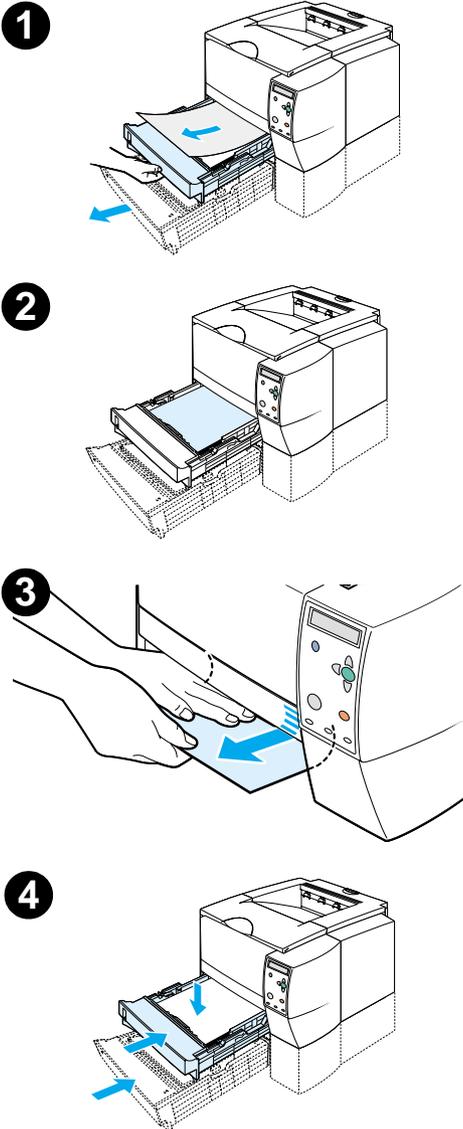
1 Slide out tray 2 or tray 3 to expose the jam.

2 Remove any misfed paper by pulling it out by the visible edge. Make sure that all of the paper is aligned in the tray (see "Loading tray 2 (250-sheet tray) or optional 250-sheet tray in tray 3 position" on page 32). If tray 3 is installed, remove any misfed paper and make sure that all of the paper is aligned in that tray.

3 If the paper is jammed in the paper-feed area and cannot be accessed from the print-cartridge area, grasp the paper and carefully pull it free from the printer.

4 For tray 2, push the paper down to lock the metal paper-lift plate into place. For both trays, slide the tray back into the printer.

5 To reset the printer and continue printing, open the top cover all the way and then close it.

Note

If the ATTENTION light does not go out, jammed media remains inside the printer. Check the paper-feed and rear-output areas for jams. For printers that include a built-in duplexer (HP LaserJet 2300d printer, HP LaserJet 2300dn printer, and HP LaserJet 2300dtn printer), check the duplexer area.
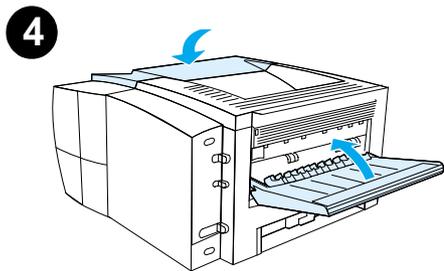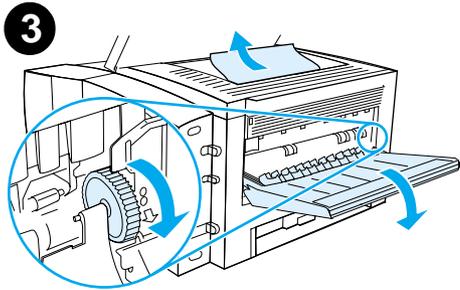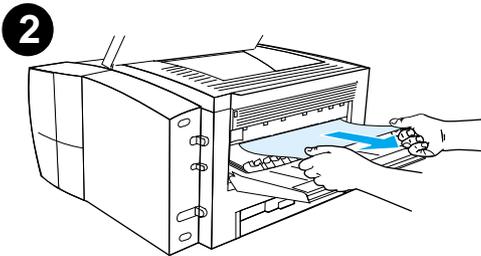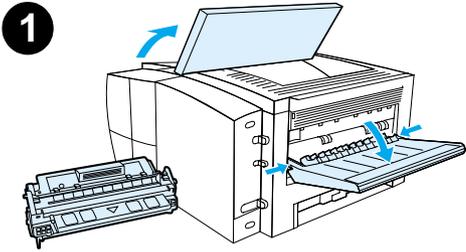
Output areas

Jams in this area might result in loose toner on the page. If you get any toner on your clothes or hands, wash them in cold water. (Hot water will set the toner into the fabric.)

1   Open the top cover and remove the print cartridge. Open the rear output bin.

Note

It is necessary to open the top cover in order to release the rear output gearing and remove the media easily.

2   If the media is visible from the rear output opening, carefully use both hands to pull the leading edge out of the printer. Carefully remove the rest of the jammed media from the printer.

3   If the paper is almost completely visible from the top output bin, pull the remaining paper carefully out of the printer.

If the leading edge is not visible or barely visible in the print-cartridge area, open the rear output bin all the way. To do this, push the bin door slightly forward and use your finger to disengage the grill at the base. Turn the jam-clearing wheel to move the media out of the printer.

4   Reinstall the print cartridge. Close the top cover and the rear output bin.

Note

If the print cartridge is difficult to reinstall, make sure that the registration plate has been flipped back down into position and that you have pushed the print cartridge firmly in place.

If the ATTENTION light does not go out, jammed media remains inside the printer. Check the paper-feed and rear-output areas for jams. For printers that include a built-in duplexer (HP LaserJet 2300d printer, HP LaserJet 2300dn printer, and HP LaserJet 2300dtn printer), check the duplexer area.
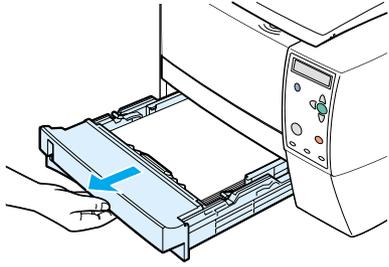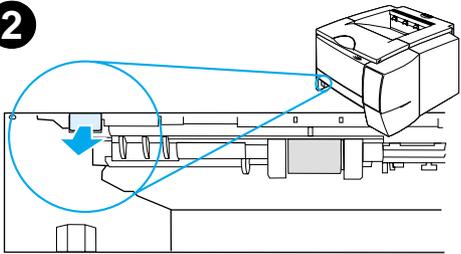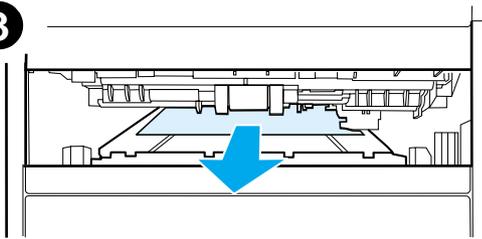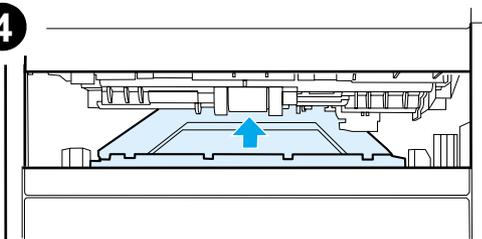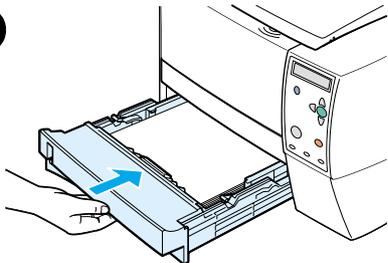
Duplexer area

This procedure applies only to printers that include a built-in duplexer (HP LaserJet 2300d printer, HP LaserJet 2300dn printer, and HP LaserJet 2300dtn printer).

1   Remove tray 2 from the printer.

2   Pull the green lever on the left front of the tray 2 opening to open the paper access plate.

3   Reach in and pull out the jammed paper.

4   Push the bottom of the paper access plate back up until it clicks into place on both sides (both sides need to be engaged).

5   Reinstall tray 2.

6   To reset the printer and continue printing, open the top cover all the way and then close it.

Note
If the ATTENTION light does not go out, jammed media remains inside the printer. Check the paper-feed and rear-output areas for jams.

Troubleshooting print-quality problems

This section helps you define print-quality problems and what to do to correct them. Often print-quality problems can be handled easily by making sure that the printer is properly maintained, using print media that meets HP specifications, or running a cleaning page.

Print-quality checklist

General print-quality problems can be solved by following the checklist below.

- Check the printer driver to make sure that you are using the best available print quality option (see "Choosing print-quality settings" on page 51).
- Try printing with one of the alternative print drivers on the printer CD-ROM.
- Clean the inside of the printer (see "Cleaning the printer" on page 77).
- Check the paper type and quality (see "Media specifications" on page 134).
- Check to make sure that EconoMode is off in the software (see "Using EconoMode (draft) printing" on page 51).
- Troubleshoot general printing problems (see "Troubleshooting general printing problems" on page 83).
- Install a new HP print cartridge, and then check the print quality again. (See the instructions provided with the print cartridge.)

Note   If the page is totally blank (all white) check to make sure that the sealing tape is removed from the print cartridge and ensure that the print cartridge is installed correctly.

Newer printers have been optimized to print characters more accurately. This might result in characters that look lighter or thinner than you are used to from your older printer.

If the page is printing images darker than those from an older printer, and you want the images to match the older printer, make these changes in your printer driver: on the **Finishing** tab, select **Print Quality**, select **Custom**, click **Details**, and click the check box for **Print Images Lighter**.

Image defect examples

Use the examples in this image defect table to determine which print-quality problem you are experiencing, and then see the corresponding reference pages to troubleshoot. These examples identify the most common print-quality problems. If you still have problems after trying the suggested remedies, contact HP Customer Support. (See .)

(light)

(dark)

Light print or fade

If a vertical white streak or faded area appears on the page:

- The toner supply is out. Install a new HP print cartridge.
- The media might not meet HP specifications (for example, the paper is too moist or too rough). See "Media specifications" on page 134.
- If the whole page is light, the print density adjustment is too light or EconoMode might be on. Adjust the print density and EconoMode within the software driver. See "Using EconoMode (draft) printing" on page 51. For non-Windows operating systems, this feature is also available in HP Web Jetadmin.

Toner specks

- The media might not meet HP specifications (for example, the paper is too moist or too rough). See "Media specifications" on page 134.
- The transfer roller might be dirty. See "Cleaning the paper path and print-cartridge areas" on page 78.
- The paper path might need cleaning. See "Cleaning the paper path and print-cartridge areas" on page 78 and "Cleaning the fuser" on page 79.

Dropouts

If faded areas, generally rounded, occur randomly on the page:

- A single sheet of media might be defective. Try reprinting the job.
- The moisture content of the paper is uneven or the paper has moist spots on its surface. Try paper from a different source. See "Media specifications" on page 134.
- The paper lot is bad. The manufacturing processes can cause some areas to reject toner. Try a different kind or brand of paper. See "Media specifications" on page 134.
- The print cartridge might be defective. See "Vertical repetitive defects" on page 105.
- If these steps do not correct the problem, contact an HP-authorized dealer or service representative. See "Contacting HP" on page 123.
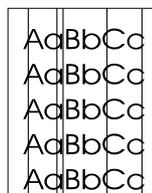
Vertical lines

If black or white vertical streaks appear on the page:

- The photosensitive drum inside the print cartridge has probably been scratched or is worn out. Install a new HP print cartridge.

Gray background

If the amount of background toner shading becomes unacceptable, the following procedures might help to clear the condition:

- Decrease the density setting (see "TONER DENSITY" on page 153. This decreases the amount of background shading.
- Change the media to a lighter basis weight. See "Media specifications" on page 134.
- Check the printer's environment; very dry (low humidity) conditions can increase the amount of background shading.
- Install a new HP print cartridge.
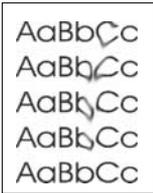
Toner smear

- If toner smears appear on the leading edge of the media, the paper guides are dirty. See "Cleaning the paper path and print-cartridge areas" on page 78 and "Cleaning the fuser" on page 79.
- Check the media type and quality. See "Media specifications" on page 134.
- Try installing a new HP print cartridge.

Loose toner

- Clean the inside of the printer. See "Cleaning the paper path and print-cartridge areas" on page 78 and "Cleaning the fuser" on page 79.
- Check the media type and quality. See "Media specifications" on page 134.
- Try installing a new HP print cartridge.
- In the printer driver, change the type to match the type of paper you are printing. See "Printing by type and size of media" on page 53. Print speed might be slower if you are using heavy media.
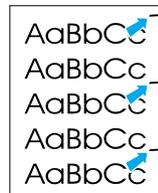
Vertical repetitive defects

If marks repeatedly appear on the printed side of the page at even intervals:

- The print cartridge might be damaged. The circumference of the print cartridge drum is 94 mm (3.7 inches). If a repetitive mark occurs every 94 mm (3.7 inches) on the page, install a new HP print cartridge.
- Internal parts might have toner on them. If the defects occur on the back of the page, the problem will likely correct itself after a few more pages.
- In the printer driver, change the type setting to match the type of media you are printing. See "Printing by type and size of media" on page 53.
- The fusing assembly might be damaged. Contact an HP-approved service technician. See "Contacting HP" on page 123.
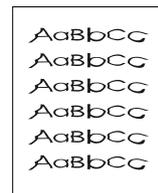
Misformed characters

- If characters are improperly formed, producing hollow images, the paper might be too slick. Try a different media type. See "Media specifications" on page 134.
- If characters are improperly formed, producing a wavy effect, the laser scanner might need service. If you need service, contact an HP-authorized dealer or service representative "Contacting HP" on page 123. See "Hewlett-Packard limited warranty statement" on page 129.
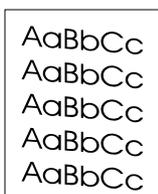
## Page skew

- Check the media type and quality. See "Media specifications" on page 134.
- Make sure that the media is loaded correctly and that the guides are not too tight or too loose against the stack. See "Loading trays" on page 31, "Loading tray 2 (250-sheet tray) or optional 250-sheet tray in tray 3 position" on page 32, or "Loading tray 3 (500-sheet tray)" on page 34.
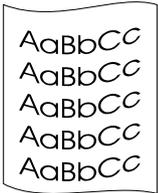
Curl or wave

- Check the media type and quality. Both high temperature and humidity can cause paper curl. See "Media specifications" on page 134.
- Turn over the stack of paper in the tray. Also try rotating the paper 180° in the input tray.
- Open the rear door and try printing to the rear output bin (straight-through paper path).
- Reduce the fusing temperature to reduce the curling (see "FUSER MODES" on page 152).
- Change the paper type setting in the printer driver to thin, transparency, or lightweight. This helps reduce curl by shortening the time that the media spends in the fuser assembly. See "Printing by type and size of media" on page 53.
- Keep media sealed in the original packaging and in a cool, dry place until ready to use.
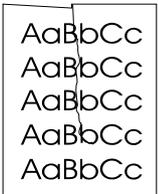
Wrinkles or creases

- Make sure that the media is loaded properly.
- Check the media type and quality. See "Media specifications" on page 134.
- Open the rear door and try printing to the rear output bin.
- Turn over the stack of paper in the tray or try rotating the paper 180° in the input tray.
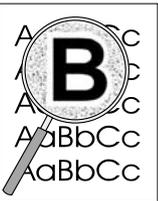
Toner scatter outline (halo)

- If large amounts of toner have scattered around the characters, the media might have high resistivity. (Small amounts of toner scatter are normal for laser printing.) Try a different paper type. See "Media specifications" on page 134.
- Turn over the stack of media in the tray.
- Use media designed for laser printers. See "Media specifications" on page 134.
- A combination of low humidity and high temperature might be the problem. Increase the intensity of toner transfer (see "HIGH TRANSFER" on page 152).

Random image repetition

If an image that appears at the top of the page (in solid black) repeats further down the page (in a gray field), the toner might not have been completely erased from the last job. (The repeated image might be lighter or darker than the field it appears in.)

- Change the tone (darkness) of the field that the repeated image appears in.
- Change the order in which the images are printed. For example, have the lighter image at the top of the page, and the darker image farther down the page.
- From your software application, rotate the whole page 180° to print the lighter image first.
- If the defect occurs later in a print job, turn the printer power off for 10 minutes, and then turn the printer power on to restart the print job.

Troubleshooting network printing problems

HP recommends that you use the printer CD-ROM to install and set up the printer on a network.

- Print a configuration page (see "Configuration page" on page 72). If an HP Jetdirect EIO print server is installed, printing a configuration page also prints a second page that shows the network settings and status.
- See the *HP Jetdirect Print Server Administrator's Guide* on the printer CD-ROM for help and for more information about the Jetdirect configuration page. To reach the guide, select the appropriate print server series (for example, EIO), select the appropriate print server product (for example, 615n), and then click **troubleshoot a problem**.
- Try printing the job from another computer.
- To verify that a printer works with a computer, use a parallel or USB cable to connect it directly to a computer. You will have to reinstall the printing software. Print a document from a program that has printed correctly in the past. If this works, a problem with the network might exist.
- Contact your network administrator for assistance.

Troubleshooting common Windows problems

Symptom	Possible cause	Solution
Error message: "Error Writing to LPT*x*" in Windows 9*x*.	Paper is not loaded.	Make sure that there is paper in the trays.
	Defective or loose cable.	Make sure that the cables are connected correctly, the printer is on, and the READY light is on.
	The printer is plugged into a power strip and not receiving enough power.	Unplug the power cord from the power strip and plug it into another electrical outlet.
	Wrong input/output setting.	Click **Start**, click **Settings**, and then click **Printers**. Right-click the HP LaserJet 2300 printer driver and select **Properties**. Click **Details** and then **Port Settings**. Click to clear the check mark from the **Check Port State before Printing** box. Click **OK**. Click **Spool Setting** and then click **Print Directly to Printer**. Click **OK**.
Error message: "General Protection Fault Exception OE" "Spool32" "Illegal Operation"		Close all other applications, restart Windows, and try again.
		Select a different printer driver. If the HP LaserJet 2300 series PCL 6 driver is selected, switch to a PCL 5e or PS printer driver. (You can usually do this from a software program.)
		Delete all temp files from the Temp subdirectory. You can determine the name of the directory by editing the Autoexec.bat file and looking for the statement "Set Temp =." The name after this statement is the temp directory. It is usually C:\temp by default, but can be redefined.
		Refer to the Microsoft Windows documentation that came with your computer for further information about Windows error messages.

Troubleshooting common Macintosh problems

Choose the item that best describes the problem:

● problems in the Chooser

● printing errors

● USB problems

● OS X problems

Symptom	Possible cause	Solution
Problems in the Chooser		
The LaserWriter icon does not appear in the Chooser.	Software is not installed correctly.	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 it is not there, install the LaserWriter driver from your Mac OS CD.
		Make sure that you are using a high-quality cable.
		Make sure that the printer is on the correct network. Select **Network** or **AppleTalk Control Panel** from **Control Panels** in the **Apple** menu and then select the correct network.
The HP LaserJet raster printer driver icon does not appear in the Chooser.	Software is not installed correctly.	Reinstall the software.
The printer name does not appear in the printer list.		Make sure that the cables are connected correctly, that the printer is on, and that the READY light is on.
		Verify that the printer driver is installed.
		Make sure that the correct printer driver has been selected in the Chooser.
		Make sure that AppleTalk is on (the button next to **Active** is selected in the Chooser). You might need to restart the computer to activate the change.
		If the printer resides on a network with multiple zones, make sure that the correct zone is selected in the **AppleTalk Zones** box in the Chooser
The printer driver does not automatically set up your selected printer even though you clicked **Auto Setup** in the Chooser.		Reinstall the printer software.
		Select an alternate PPD (see "Selecting an alternate PostScript Printer Description (PPD)" on page 113).

Symptom	Possible cause	Solution
Printing errors		
A print job was not sent to the printer that you wanted.	Another printer with the same or similar name might have received your print job.	Check the AppleTalk name of the printer displayed on the configuration page. Make sure that the cables are connected correctly, that the printer is on, and that the READY light is on.
You cannot use the computer while the printer is printing.	**Background Printing** has not been selected.	**LaserWriter 8.3** Turn **Background Printing** on in the Chooser. Status messages will now be redirected to the Print Monitor, allowing you to continue working while the computer is processing data to be sent to the printer. **LaserWriter 8.4 and later** Turn **Background Printing** on by selecting **File**, **Print Desktop**, and **Background Printing**.
An encapsulated PostScript (EPS) file does not print with the correct fonts.	This problem occurs with some software programs.	Try downloading the fonts contained in the EPS file to the printer before printing. Send the file in ASCII format instead of binary encoding.
Your document is not printing with New York, Geneva, or Monaco fonts.		Select **Options** in the **Page Setup** dialog box to deselect substituted fonts.

Symptom	Possible cause	Solution
USB problems		
A USB-connected HP LaserJet printer does not appear in the Macintosh Chooser.	This problem is caused by either a software or hardware component.	**Software troubleshooting** ● Make sure that your Macintosh computer supports USB. ● Make sure that your Macintosh computer has Mac OS 8.6 or later. ● Ensure that your Macintosh has the appropriate USB software from Apple. **Note**: The iMac and Blue G3 desktop Macintosh systems contain all the requirements to connect to a USB device. **Hardware troubleshooting** ● Make sure that the printer is turned on. ● Verify that the USB cable is properly connected. ● Make sure that you are using the appropriate high-speed USB cable. ● Make sure 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.	Use the Apple Desktop Utility to set up the printer.

Symptom	Possible cause	Solution
OS X problems		
Printer features do not appear.	The wrong PPD is selected for the printer.	Verify which PPD is selected. In the **Print** dialog box, click **Summary**. Verify that the **PPD for** setting is correct.
When using OSX v10.2, the printer is not using Rendezvous (mDNS).		You might need to upgrade your HP Jetdirect card to a version that supports Rendezvous.
An installed tray does not appear as an option, even though it is installed on the printer.		The ability to manually select installable options is supported only in Mac OS X v10.2 and later.

Selecting an alternate PostScript Printer Description (PPD)

MAC OS 9.*x*

1   Open the Chooser from the **Apple** menu.

2   Click the **LaserWriter** icon.

3   If you are on a network that has multiple zones, select the zone in the **AppleTalk Zones** box where the printer is located.

4   In the **Select a PostScript Printer** box, click the printer name that you want to use. (Double-clicking immediately generates the next few steps.)

5   Click **Setup.** (This button might read **Create** for first-time setup.)

6   Click **Select PPD**.

7   Find the PPD that you want in the list and click **Select**. If the PPD is not listed, choose one of the following options:

   • Select a PPD for a printer with similar features.

   • Select a PPD from another folder.

   • Select the generic PPD by clicking **Use Generic**. The generic PPD allows you to print, but limits your access to printer features.

8   In the **Setup** dialog box, click **Select**, and then click **OK** to return to the Chooser.

Note	If you manually select a PPD, an icon might not appear next to the selected printer in the **Select a PostScript Printer** box. In the Chooser, click **Setup**, click **Printer Info**, and then click **Update Info** to display the icon.

9   Close the Chooser.

Mac OS X

1   Delete the printer from the Print Center.

2   Add the printer again using the option to manually select the PPD.

Renaming the printer

If you are going to rename the printer, do this before selecting the printer in the Chooser. If you rename the printer after selecting it in the Chooser, you will have to return to the Chooser and reselect it.

Use the Set Printer Name feature in the HP LaserJet Utility to rename the printer.

Troubleshooting common PostScript problems

The following situations are specific to the PostScript (PS) language and might occur when several printer languages are being used. Check the control panel display for messages that might help resolve problems.

To receive a printed or screen message when PS errors occur, open the **Print Options** dialog box and click the selection next to the PS Errors section that you want.

Symptom	Possible cause	Solution
The job prints in Courier (the printer's default typeface) instead of the typeface that you requested.	The requested typeface is not downloaded.]	Download the font that you want and send the print job again. Verify the type and location of the font. Download the font to the printer if applicable. Check the software documentation for more information.
A legal page prints with clipped margins.	The print job was too complex.	You might need to print your job at 600 dots per inch, reduce the complexity of the page, or install more memory.
A PS error page prints.	The print job might not be PS.	Make sure that 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.
Specific errors		
Limit Check Error	The print job was too complex.	You might need to print your job at 600 dots per inch, reduce the complexity of the page, or install more memory.
VM Error	Font error.	Select unlimited downloadable fonts from the printer driver.
Range Check	Font error.	Select unlimited downloadable fonts from the printer driver.

5 Service and support

This section contains information to help you order supplies and contact HP. It also provides warranty, repacking, and software license information.

- "Ordering parts, accessories, and supplies" on page 116
- "Contacting HP" on page 123
- "Guidelines for repacking the printer" on page 125
- "Service information form" on page 126
- "HP maintenance agreements" on page 127
- "Warranty information" on page 128

Ordering parts, accessories, and supplies

This section provides information regarding ordering parts, supplies, and documentation. Use only parts and accessories specifically designed for this printer.

The section "Part numbers" on page 118 is organized according to these types of accessories:

- "Paper handling" on page 118
- "Memory" on page 118
- "Cables and interfaces" on page 119
- "Documentation" on page 119
- "Printing supplies" on page 120

Ordering directly from HP

You can obtain the following directly from HP:

- **Replacement parts**
  To order replacement parts in the U.S. see http://www.hp.com/hps/parts or http://partsurfer.hp.com. Outside the United States, order parts by contacting your local authorized HP service center.

- **Supplies and accessories**
  To order supplies in the U.S., see http://www.hp.com/go/ljsupplies. To order supplies worldwide, see http://www.hp.com/ghp/buyonline.html. To order accessories, see http://www.hp.com/go/accessories.

- **Documentation**
  See the websites listed under "Documentation" on page 119 for documentation that is available online.

Ordering through service or support providers

To order a part or accessory, contact an HP-authorized service or support provider. (See "Contacting HP" on page 123.)

Ordering directly through the embedded Web server (for printers with network connection)

Use the following steps to order printing supplies directly through the embedded Web server. (See "Opening the embedded Web server" on page 62 for an explanation of this feature.)

To order directly through the embedded Web server

1 In the Web browser on the computer, type the IP address for the printer. The printer status window appears.

2 Select the **Setting** tab at the top of the window.

3 If asked to provide a password, type the password.

4 On the left side of the Device Configuration window, double-click **Order Supplies**. This provides a URL from which to purchase consumables. Supplies information with part numbers and printer information is provided.

5 Select the part numbers that you want to order and follow the instructions on the screen.

Ordering directly through the printer software (for printers directly connected to a computer)

The printer software gives you the ability to order supplies and accessories directly from the computer. Three things are necessary to use this feature:

● The Printer Status and Alerts software must be installed on your computer. Use the Custom installation option to install this software. (See "Using Printer Status and Alerts" on page 65.)

● The printer must be directly connected to your computer through a parallel cable.

● You must have access to the World Wide Web.

To order directly through the printer software

1 At the bottom right of the screen (in the system tray), click the **Printer** icon. This opens the status window.

2 On the left side of the status window, click the **Printer** icon for which you want to obtain status.

3 At the top of the status window, select **Supplies**. (You can also scroll down to Supplies Status.)

4 Click **Order Supplies**. The browser opens to the supplies purchasing page.

5 Select the supplies that you want to order.

Part numbers

Paper handling

Item	Description or use	Part number
Optional 250-sheet tray and feeder unit	Optional tray to increase paper capacity. Holds A4, A5, B5 (ISO), B5 (JIS), Letter, Legal, Executive, and 8.5-by-13 inch paper sizes	C4793B
Optional 500-sheet tray and feeder unit	Optional tray to increase paper capacity. Holds Letter and A4 paper sizes.	C7065B

Memory

Item	Description or use	Part number
SDRAM DIMM (dual inline memory module)	Boosts the ability of the printer to handle large or complex print jobs (maximum 128 MB with HP-brand DIMMs). ● 8 MB ● 16 MB ● 32 MB ● 64 MB ● 128 MB	 C7842A C7843A C7845A Q9680A Q9121A

Cables and interfaces

Item	Description or use	Part number
Enhanced I/O (EIO) cards	HP Jetdirect print server multi-protocol EIO network cards:	
	● HP Jetdirect 615n Fast Ethernet (10/100Base-TX) internal print server (included on the HP LaserJet 2300n, 2300dn, and 2300dtn)	J6057A
	● HP Jetdirect 680n 802.11b wireless internal print server	J6058A
	● HP JetDirect 610n Token Ring internal print server	J4167A
	● HP Jetdirect 600n Ethernet (10Base-T, 10Base-2) and LocalTalk internal print server	J3111A
	● HP JetDirect 600 Ethernet (10Base-T) internal print server	J3110A
	● HP Jetdirect Connectivity card for USB, serial, and LocalTalk connections	J4135A
Parallel cables	2-meter IEEE 1284-B cable	C2950A
	3-meter IEEE 1284-B cable	C2951A
USB cable	2-meter A to B cable	C6518A

Documentation

Item	Description or use	Part number
hp LaserJet 2300 series printers CD-ROM	An additional copy of the CD-ROM containing software, the *use* guide, and Readme files.	
	● English, German, Dutch, French, Hebrew, Spanish, Italian, Portuguese, Finnish, Swedish, Norwegian	Q2472-60102
	● Arabic, Czech (C5), Danish, English, French, Greek, Hungarian, Polish, Russian, Slovak, Turkish	Q2472-60103
	● English, Thai, Korean, Simplified Chinese, Traditional Chinese	Q2472-60104
hp LaserJet 2300 series printers start guide	You can download a copy of the *start* guide from the Internet at http://www.hp.com/support/lj2300.	
hp LaserJet printer family print media guide	A guide to using paper and other print media with HP LaserJet printers (English only). To obtain the most current version of the media guide, go to http://www.hp.com/support/ljpaperguide.	5963-7863

Printing supplies

For more information about media supplies, go to http://www.hp.com//go/ljsupplies.

Item	Description or use	Part number
Print cartridge	HP Smart Print Cartridge	Q2610A
HP Soft Gloss laser paper	For use with HP LaserJet printers. Coated paper, good for business documents with high impact, such as brochures, sales material, and documents with graphics and photographic images. Specifications: 32 lb (120 g/m^2).	
	● Letter (220 by 280 mm), 50 sheets/box	C4179A/Asia-Pacific countries/regions
	● A4 (210 by 297 mm), 50 sheets/box	C4179B/Asia-Pacific countries/regions and Europe
HP LaserJet tough paper	For use with HP LaserJet printers. This satin-finish paper is waterproof and tear-proof, yet doesn't compromise on print quality or performance. Use it for signs, maps, menus, and other business applications.	
	● Letter (8.5 by 11 inch), 50 sheets to a carton	Q1298A/North America
	● A4 (210 by 297 mm), 50 sheets to a carton	Q1298B/Asia-Pacific countries/regions and Europe
HP Premium Choice LaserJet paper	HP's brightest LaserJet paper. Expect spectacular color and crisp black from this paper that is extra smooth and brilliantly white. Ideal for presentations, business plans, external correspondence and other high-value documents Specifications: 98 bright, 32 lb. (75 g/m^2).	
	● Letter (8.5 by 11 inch), 500 sheets/ream, 10-ream carton	HPU1132/North America
	● Letter (8.5 by 11 inch), 250 sheets/ream, 6-ream carton	HPU1732 North America
	● A4 (210 by 297 mm), 5-ream carton	Q2397A/Asia-Pacific countries/regions
	● A4 (210 by 297 mm), 250 sheet/ream, 5-ream carton	CHP412/Europe
	● A4 (210 by 297 mm), 500 sheet/ream, 5-ream carton	CHP410/Europe
	● A4 (210 by 297 mm), 160g/m^2 500 sheet/ream, 5-ream carton	CHP413/Europe

Item	Description or use	Part number
HP LaserJet paper	For use with HP LaserJet printers. Good for letterhead, high-value memos, legal documents, direct mail, and correspondence. Specifications: 96 bright, 24 lb (90 g/m^2).	
	● Letter (8.5 by 11 inch), 500 sheets/ream, 10-ream carton	HPJ1124/North America
	● Legal (8.5 by 14 inch), 500 sheets/ream, 10-ream carton	HPJ1424/North America
	● A Letter (220 by 280 mm), 500 sheets/ream, 5-ream carton	Q2398A/Asia-Pacific countries/regions
	● A4 (210 by 297 mm), 500 sheets/ream, 5-ream carton	Q2400A/Asia-Pacific countries/regions
	● A4 (210 by 297 mm), 500 sheets/ream	CHP310/Europe
HP Printing paper	For use with HP LaserJet and inkjet printers. Created especially for small and home offices. Heavier and brighter than copier paper. Specifications: 92 bright, 22 lb.	
	● Letter (8.5 by 11 inch), 500 sheets/ream, 10-ream carton	HPP1122/North America and Mexico
	● Letter (8.5 by 11 inch), 500 sheets/ream, 3-ream carton	HPP113R/North America
	● A4 (210 by 297 mm), 500 sheets/ream, 5-ream carton	CHP210/Europe
	● A4 (210 by 297 mm), 300 sheets/ream, 5-ream carton	CHP213/Europe
HP Multipurpose paper	For use with all office equipment—laser and inkjet printers, copiers, and fax machines. Created for businesses that want one paper for all their office needs. Brighter and smoother than other office papers. Specifications: 90 bright, 20 lb (75 g/m^2).	For use with all office equipment—laser and inkjet printers, copiers, and fax machines. Good for high-volume printing. Specifications: 84 bright, 20 lb (75 g/m^2).
	● Letter (8.5 by 11 inch), 500 sheets/ream, 10-ream carton	HPM1120/North America
	● Letter (8.5 by 11 inch), 500 sheets/ream, 5-ream carton	HPM115R/North America
	● Letter (8.5 by 11 inch), 250 sheets/ream, 12-ream carton	HP25011/North America
	● Letter (8.5 by 11 inch), 3-hole, 500 sheets/ream, 10-ream carton	HPM113H/North America
	● Legal (8.5 by 14 inch), 500 sheets/ream, 10-ream carton	HPM1420/North America

Item	Description or use	Part number
HP Office paper	For use with all office equipment—laser and inkjet printers, copiers, and fax machines. Good for high-volume printing. Specifications: 84 bright, 20 lb (75 g/m^2).	
	• Letter (8.5 by 11 inch), 500 sheets/ream, 10-ream carton	HPC8511/North America and Mexico
	• Letter (8.5 by 11 inch), 3-hole, 500 sheets/ream, 10-ream carton	HPC3HP/North America
	• Legal (8.5 by 14 inch), 500 sheets/ream, 10-ream carton	HPC8514/North America
	• Letter (8.5 by 11 inch), Quick Pack, 2,500-sheet carton	HP2500S/North America and Mexico
	• Letter (8.5 by 11 inch), Quick Pack 3-hole, 2,500-sheet carton	HP2500P/North America
	• A Letter (220 by 280 mm), 500 sheets/ream, 5-ream carton	Q2408A/Asia-Pacific countries/regions
	• A4 (210 by 297 mm), 500 sheets/ream, 5-ream carton	Q2407A/Asia-Pacific countries/regions
	• A4 (210 by 297 mm), 500 sheets/ream, 5-ream carton	CHP110/Europe
	• A4 (210 by 297 mm), Quick Pack 2500 sheets/ream, 5-ream carton	CHP113/Europe
HP Office recycled paper	For use with all office equipment—laser and inkjet printers, copiers, and fax machines. Good for high-volume printing. Satisfies U.S. Executive Order 13101 for environmentally preferable products. Specifications: 84 bright, 20 lb, 30 percent post-consumer content.	
	• Letter (8.5 by 11 inch), 500 sheets/ream, 10-ream carton	HPE1120/North America
	• Letter (8.5 by 11 inch), 3-hole, 500 sheets/ream, 10-ream carton	HPE113H/North America
	• Legal (8.5 by 14 inch), 500 sheets/ream, 10-ream carton	HPE1420/North America
HP LaserJet transparencies	For use only with HP LaserJet monochrome printers. For crisp, sharp text and graphics, rely on the only transparencies specifically designed and tested to work with monochrome HP LaserJet printers. Specifications: 4.3-mil thickness.	
	• Letter (8.5 by 11 inch), 50 sheets to a carton	92296T/North America, Asia-Pacific countries/ regions, and Europe
	• A4 (210 by 297 mm), 50 sheets to a carton	922296U/Asia-Pacific countries/regions and Europe

Contacting HP

This section provides information regarding how to contact HP to obtain product support (using the Internet or telephone) or to obtain additional service and extended support. It also contains information for contacting the HP fraud hotline if you suspect that the HP supply you purchased is not a genuine HP supply.

Getting support

This section provides information for getting support from HP by using HP websites or by telephone.

Technical support websites

Support for the HP LaserJet 2300 series printers Answers to frequently asked questions for your specific printer	http://www.hp.com/support/lj2300
HP Customer Care Online Printer drivers, support documentation, and answers to frequently asked questions	http://www.hp.com/support
HP Technical Training Classes and schedules	USA: http://www.partner.americas.hp.com Latin America: http://www.conecta.latinamerica.hp.com
Parts Parts information	http://www.hp.com/hps/parts http://partsurfer.hp.com

Telephone support

HP provides free telephone support during the product warranty period. When you call, you will be connected to a responsive team waiting to help you. For the number you should call in your country/region, see the support sheet that came in the box with your product. Before calling, have the following information available:

● product name (for example, HP LaserJet 2300 printer)

● product serial number (found on the inside edge of the printer, under the top cover)

● date that you purchased the product and a description of the problem you are experiencing

● a printed configuration page (see "Configuration page" on page 72)

Before you call, try these basic troubleshooting measures:

● Test your software installation. Attempt to print a test page from your program.

● Try reinstalling the software.

● If reinstalling the software does not correct the problem, see the Readme file on the CD-ROM that came in the printer box, or call the telephone number for your country/region listed on the support flyer that came in the printer box.

You can also find answers to frequently asked questions at the following website: http://www.hp.com/support/lj2300.

Obtaining extended service and support

You can obtain extended service agreements or support packs for your HP product.

HP service agreements

To obtain an HP service agreement, visit http://www.hp.com/support. In the **Select a country/ region** field at the top, select your country/region and click the **Support** block. You can also contact your HP-authorized dealer.

HP SupportPacks

The HP SupportPack is a packaged service agreement that upgrades your basic HP LaserJet product warranty (1 year) and extends coverage up to 5 years.

HP SupportPacks are sold by HP resellers and are available in either a shrink-wrap version for a 3-year service package only (register with HP to activate this service) or an electronic version for a 1-, 2-, 3-, 4-, or 5-year service package (register by fax or on the Internet).

For ordering and pricing details, as well as other HP printer support services, contact your local HP reseller or visit the HP website at http://www.hp.com/go/printerservices for more information.

Contacting the HP fraud hotline

Call the HP fraud hotline when you install an HP LaserJet print cartridge and a printer message says the cartridge is a non-HP cartridge. HP will help determine if the product is genuine and take steps to resolve the problem.

Your print cartridge might not be a genuine HP one if you notice the following issues:

- You are experiencing a high number of problems with the print cartridge.
- The print cartridge does not look like it usually does (for example, the pull tab or the box is different).
- A message appears on the printer control panel display indicating that the printer has detected a non-HP print cartridge.

In the United States: Call toll-free at 1-877-219-3183.

Outside the United States: You can call collect. Dial the operator and ask to place a collect call to the telephone number 1-770-263-4745. If you do not speak English, a representative at the HP fraud hotline who speaks your language will assist you. Or, if someone who speaks your language is not available, a language line interpreter will connect approximately one minute after the beginning of the call. The language line interpreter is a service that will translate between you and the representative for the HP fraud hotline.

Guidelines for repacking the printer

Use the following guidelines when you need to repack the printer:

● Remove and retain any DIMMs (dual inline memory modules) that you have purchased and installed in the printer. Do not remove the DIMM that came with the printer (the "boot DIMM").

CAUTION   Static electricity can damage DIMMs. When handling DIMMs, either wear an antistatic wrist strap or frequently touch the surface of the DIMMs' antistatic package, then touch bare metal on the printer. To remove the DIMMs see "Installing memory" on page 165.

● Remove and retain any cables and optional accessories installed in the printer.
● Remove and retain the print cartridge.

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

● Remove and retain the HP Jetdirect EIO print server card.
● Use the original shipping container and packing material, if possible. (Shipping damage as a result of inadequate packing is the customer's responsibility.) If you have already disposed of the printer's packing material, contact a local mailing service for information about repacking the printer.
● If possible, include print samples and 50 to 100 sheets of paper or other media that did not print correctly.
● Include a completed copy of the "Service information form" on page 126.
● HP recommends insuring the equipment for shipment.

Service information form

WHO IS RETURNING THE EQUIPMENT?   Date:

Person to contact: Phone: (   )

Alternate contact: Phone: (   )

Return shipping address: Special shipping instructions:

WHAT IS BEING SENT?

Model name: Model number: Serial number:

Please attach any relevant printouts when returning equipment. DO NOT ship accessories that are not required to complete the repair (manuals, cleaning supplies, etc.).

WHAT NEEDS TO BE DONE?   (Attach a separate sheet if necessary.)

1. Describe the conditions of the failure. (What was the failure? What were you doing when the failure occurred? What software were you running? Is the failure repeatable?)

2. If the failure is intermittent, how much time elapses between failures?

3. Is the unit connected to any of the following? (Give manufacturer and model number.)

   Personal computer: Modem: Network:

4. Additional comments:

HOW WILL YOU PAY FOR THE REPAIR?

❏ Under warranty   Purchase/received date: _____

                              (Enclose proof of purchase or receiving document with original received date.)

❏ Maintenance contract number: _____

❏ Purchase order number: _____

Except for contract and warranty service, a purchase order number and/or authorized signature must accompany any request for service. If standard repair prices do not apply, a minimum purchase order is required. Standard repair prices can be obtained by contacting an HP-authorized Repair Center.

Authorized signature: _____   Phone: (   )

Billing address: Special billing instructions:

HP maintenance agreements

HP has several types of maintenance agreements that meet a wide range of support needs. Maintenance agreements are not part of the standard warranty. Support services vary by area. Check with your local HP dealer to determine the services available to you.

To provide you with the level of support best suited to your needs, HP has on-site service agreements with three response times:

● **Priority on-site service**
  This agreement provides 4-hour service response to your site for calls made during normal HP business hours.

● **Next-day on-site service**
  This agreement provides support by the next working day following a service request. Extended coverage hours and extended travel beyond HP's designated service zones are available on most on-site agreements (for additional charges).

● **Weekly (volume) on-site service**
  This agreement provides scheduled weekly on-site visits for organizations with many HP products. This agreement is designated for sites using 25 or more workstation products, including printers, plotters, computers, and disk drives.

Warranty information

For warranty statements, see "Hewlett-Packard limited warranty statement" on page 129 and "Limited warranty for print cartridge life" on page 130. You can also locate printer warranties on the Internet. (See "Getting support" on page 123.)

For service during and after the warranty period, use the following resources:

●   If printer hardware fails during the warranty period, go to http://www.hp.com/support/lj2300 or contact an HP-authorized service or support provider.

●   If printer hardware fails after the warranty period, and you have an HP service agreement or HP SupportPack, request service as specified in the agreement.

●   If you do not have an HP service agreement or HP SupportPack, contact an HP-authorized service or support provider.

If you are shipping equipment to be serviced, see "Guidelines for repacking the printer" on page 125.

Hewlett-Packard limited warranty statement

HP PRODUCT	DURATION OF WARRANTY
HP LaserJet 2300L, 2300, 2300d, 2300n, 2300dn, and 2300dtn	1 year from purchase date - return for repair

1 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.

2 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.

3 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.

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

5 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.

6 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.

7 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.

8 TO THE EXTENT ALLOWED BY LOCAL LAW, THE REMEDIES IN THIS WARRANTY STATEMENT ARE YOUR SOLE AND EXCLUSIVE REMEDIES. EXCEPT AS INDICATED ABOVE, IN NO EVENT WILL HP OR ITS SUPPLIERS BE LIABLE FOR LOSS OF DATA OR FOR DIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL (INCLUDING LOST PROFIT OR DATA), OR OTHER DAMAGE, WHETHER BASED IN CONTRACT, TORT, OR OTHERWISE. Some countries/regions, states, or provinces do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

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.

Extended warranty

HP SupportPack provides coverage for the HP hardware product and all HP-supplied internal components. The hardware maintenance covers a three-year period from date of the HP product purchase. The customer must purchase HP SupportPack within 90 days of the HP product purchase. (See "Getting support" on page 123.)

Limited warranty for print cartridge life

Note	The following warranty applies to the print cartridge that came with this printer. This warranty supersedes all previous warranties. (7/16/96)

This HP product is warranted to be free from defects in materials and workmanship during its useful life (end of life is indicated by a printer control panel low-life message).

This warranty does not cover products that have been modified, refurbished, remanufactured, misused, or tampered with in any way. This limited warranty gives you specific legal rights. You might have other rights that vary from country/region to country/region, state to state, or province to province.

A Specifications

This section provides information about the following topics:

- "Printer specifications" on page 132
- "Media specifications" on page 134

Printer specifications

Physical specifications

	HP LaserJet 2300L, 2300, 2300n, 2300d, 2300dn	HP LaserJet 2300dtn (with 500-sheet tray)
Height	259.7 mm (10.2 inches)	397.2 mm (15.6 inches)
Width	412.8 mm (16.2 inches)	412.8 mm (16.2 inches)
Depth (body)	450 mm (17.7 inches)	450 mm (17.7 inches)
Weight (with print cartridge)	14.3 kg (31.6 lb)	18.9 kg (41.6 lb)

Electrical specifications

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

Electrical specifications	110-volt models	220-volt models
Power requirements	110 to 127V (+/- 10%) 50/60 Hz (+/- 3 Hz)	220 to 240V (+/- 10%) 50/60 Hz (+/- 3 Hz)
Minimum recommended circuit capacity for typical product	5.0 amps	2.5 amps

Power consumption

Product model	Average power consumption (in watts)				
	Printing (20 ppm)	Printing (25 ppm)	Standby	PowerSave*	Off
HP LaserJet 2300L	394 W	—	8.8 W	8.6 W	0 W
HP LaserJet 2300	—	426 W	8.8 W	8.4 W	0 W
HP LaserJet 2300n	—	426 W	9.6 W	9.3 W	0 W
HP LaserJet 2300d	—	426 W	8.8 W	8.4 W	0 W
HP LaserJet 2300dn	—	426 W	9.6 W	9.3 W	0 W
HP LaserJet 2300dtn	—	426 W	9.6 W	9.3 W	0 W

*PowerSave default activation time is 15 minutes.
Values are subject to change. See http://www.hp.com/support/lj2300 for current information.

Acoustic emissions

Sound power level	Declared Per ISO 9296
Printing (HP LaserJet 2300L at 20 ppm)	$L_{WAd} = 6.6$ bels(A)
Printing (all other models at 25 ppm)	$L_{WAd} = 6.7$ bels(A)
Standby (all models)	Inaudible

Sound pressure level - bystander position	Declared per ISO 9296
Printing (HP LaserJet 2300L at 20 ppm)	Inaudible
Printing (all other models at 25 ppm)	$L_{pAm} = 52$ dB(A)
Standby (all models)	Inaudible

Sound pressure level - operator position	Declared per ISO 9296
Printing (HP LaserJet 2300L at 20 ppm)	Inaudible
Printing (all other models at 25 ppm)	$L_{pAm} = 59$ dB(A)
Standby (all models)	Inaudible

In standby, no mechanical parts are moving and therefore no sounds are made.

Values are subject to change. See http://www.hp.com/support/lj2300 for current information.

Operating environment

Environmental condition	Printing	Storage/standby
Temperature (printer and print cartridge)	15° to 32.5° C (59° to 89° F)	-20° to 40° C (-4° to 104° F)
Relative humidity	10% to 80%	10% to 90%

Media specifications

This printer accepts a variety of media, such as cut-sheet paper (including up to 100 percent recycled fiber content paper), envelopes, labels, transparencies, and custom-size paper. Properties such as weight, composition, grain, and moisture content are important factors affecting printer performance and output quality. Paper that does not meet the guidelines outlined in this manual can cause the following problems:

- poor print quality
- increased jams
- premature wear on the printer, requiring repair

Note
Some paper might meet all of the guidelines in this manual 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 purchasing large quantities of media, make sure that it meets the requirements specified in this *use* guide and in the *hp LaserJet printer family print media guide* (available at http://www.hp.com/support/ljpaperguide). Always test paper before buying large quantities.

CAUTION
Using media that does not meet HP specifications can cause problems for the printer, requiring repair. This repair is not covered by the HP warranty or service agreements.

Supported sizes of media

Tray 1	Dimensions[1]	Weight	Capacity[2]
Minimum size (custom)	76 by 127 mm (3 by 5 inches)	60 to 163 g/m^2 (16 to 43 lb)	100 sheets of 75 g/m^2 (20 lb) paper
Maximum size (custom)	216 by 356 mm (8.5 by 14 inches)	60 to 163 g/m^2 (16 to 43 lb)	100 sheets of 75 g/m^2 (20 lb) paper
Transparency	Same as minimum and maximum paper sizes listed above.	Thickness: 0.10 to 0.14 mm (0.0039 to 0.0055 inch)	75 typical
Labels[3]	Same as minimum and maximum paper sizes listed above.	Thickness: 0.10 to 0.14 mm (0.0039 to 0.0055 inch)	50 typical
Envelopes	Same as minimum and maximum paper sizes listed above.	Up to 90 g/m^2 (16-24 lb)	Up to 10

1. The printer supports a wide range of media sizes. Check the printer software for supported sizes. See "Printing on custom-sized media or cardstock" on page 41.
2. Capacity can vary depending on media weight and thickness, and environmental conditions.
3. Smoothness: 100 to 250 (Sheffield).

Note
You might experience some jams when using any media with a length less than 178 mm (7 inches). This can be caused by paper that has been affected by environmental conditions. For optimum performance, make sure you are storing and handling the media correctly (see "Printing and paper storage environment" on page 138).

Tray 2 (250-sheet tray)	Dimensions[1]	Weight	Capacity[2]
Letter	216 by 279 mm (8.5 by 11 inches)	60 to 105 g/m^2 (16 to 28 lb)	250 sheets of 75 g/m^2 (20 lb) paper
A4	210 by 297 mm (8.3 by 11.7 inches)		
Executive	191 by 267 mm (7.3 by 10.5 inches)		
Legal	216 by 356 mm (8.5 by 14 inches)		
B5 (ISO)	176 by 250 mm (6.9 by 9.9 inches)		
B5 (JIS)	182 by 257 mm (7.2 by 10 inches)		
A5	148 by 210 mm (5.8 by 8.3 inches)		
8.5 by 13 inches	216 by 330 mm (8.5 by 13 inches)		

1. The printer supports a wide range of media sizes. See "Printing on custom-sized media or cardstock" on page 41.
2. Capacity can vary depending on media weight and thickness, and environmental conditions.

Tray 3 (500-sheet tray)	Dimensions[1]	Weight	Capacity[2]
Letter	216 by 279 mm (8.5 by 11 inches)	60 to 105 g/m^2 (16 to 28 lb)	500 sheets of 75 g/m^2 (20 lb) paper
A4	210 by 297 mm (8.3 by 11.7 inches)		

1. The printer supports a wide range of media sizes. See "Printing on custom-sized media or cardstock" on page 41.
2. Capacity might vary depending on media weight and thickness, and environmental conditions.

Built-in duplexer[1]	Dimensions[2]	Weight
Letter	216 by 279 mm (8.5 by 11 inches)	60 to 105 g/m^2 (16 to 28 lb Bond)
A4	210 by 297 mm (8.3 by 11.7 inches)	
Legal	216 by 356 mm (8.5 by 14 inches)	
8.5 by 13 inches	216 by 330 mm (8.5 by 13 inches)	

1. The built-in duplexer is included only with the HP LaserJet 2300d printer, HP LaserJet 2300dn printer, and HP LaserJet 2300dtn printer.
2. The printer supports a wide range of media sizes. See "Printing on custom-sized media or cardstock" on page 41.

Guidelines for using paper

For best results, make sure 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 what type of paper you are loading (such as bond or recycled), check the label on the package of paper.

The following problems with paper cause print quality deviations, jamming, or even damage to the printer.

Symptom	Problem with paper	Solution
Poor print quality or toner adhesion Problems with feeding	Too moist, too rough, too heavy, too smooth, or embossed; faulty paper lot	Try another kind of paper, between 100 and 250 Sheffield, 4 to 6% moisture content
Dropouts, jamming, curl	Stored improperly	Store paper flat in its moisture-proof wrapping
	Side-to-side variability of paper	Turn paper over
Excessive curl problems with feeding	Too moist, wrong grain direction or short-grain construction	Open the rear output bin Use long-grain paper
	Side-to-side variability of paper	Turn paper over
Jamming, damage to printer	Cutouts or perforations	Do not use paper with cutouts or perforations
Problems with feeding	Ragged edges	Use good-quality paper
	Side-to-side variability of paper	Turn paper over

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

Do not use raised or embossed letterhead.

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 this fusing temperature (200° C or 392° F for 0.1 second).

Paper specifications

Category	Specifications
Acid content	5.5 pH to 8.0 pH
Caliper	0.094 to 0.18 mm (3.0 to 7.0 mils)
Curl in ream	Flat within 5 mm (0.02 inch)
Cut edge conditions	Cut with sharp blades with no visible fray.
Fusing compatibility	Must not scorch, melt, offset, or release hazardous emissions when heated to 200° C (392° F) for 0.1 second.
Grain	Long grain
Moisture content	4% to 6% by weight
Smoothness	100 to 250 Sheffield

For complete paper specifications for all HP LaserJet printers, see the *hp LaserJet printer family print media guide* (available at http://www.hp.com/support/ljpaperguide).

Printing and paper storage environment

Ideally, the printing and paper storage environment should be at or near room temperature, and not too dry or too humid. Remember paper is hygroscopic; it absorbs and loses moisture rapidly.

Heat works with humidity to damage paper. Heat causes the moisture in paper to evaporate, while cold causes it to condense on the sheets. Heating systems and air conditioners remove most of the humidity from a room. As paper is opened and used, it loses moisture, causing streaks and smudging. Humid weather or water coolers can cause the humidity to increase in a room. As paper is opened and used it absorbs any excess moisture, causing light print and dropouts. Also, as paper loses and gains moisture it can distort. This can cause jams.

As a result, paper storage and handling are as important as the paper-making process itself. Paper storage environmental conditions directly affect the feed operation.

Care should be taken not to purchase more paper than can be easily used in a short time (about 3 months). Paper stored for long periods might experience heat and moisture extremes, which can cause damage. Planning is important to prevent damage to a large supply of paper.

Unopened paper in sealed reams can remain stable for several months before use. Opened packages of paper have more potential for environmental damage, especially if they are not wrapped with a moisture-proof barrier.

The paper storage environment should be properly maintained to ensure optimum printer performance. The required condition is 20° to 24° C (68° to 75° F), with a relative humidity of 45% to 55%. The following guidelines should be helpful when evaluating the paper's storage environment:

● Paper should be stored at or near room temperature.

● The air should not be too dry or too humid (due to the hygroscopic properties of paper).

● The best way to store an opened ream of paper is to rewrap it tightly in its moisture-proof wrapping. If the printer environment is subject to extremes, unwrap only the amount of paper to be used during the day's operation to prevent unwanted moisture changes.

Envelopes

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 105 g/m^2 (28 lb) or jamming might occur.
- **Construction:** Prior to printing, envelopes should lie flat with less than 6 mm (0.25 inch) curl, and should not contain air.
- **Condition:** Envelopes should not be wrinkled, nicked, or otherwise damaged.
- **Temperature:** You should use envelopes that are compatible with the heat and pressure of the printer.
- **Size:** You should use only envelopes within the following size ranges.

Tray	Minimum	Maximum
Tray 1	76 by 127 mm (3 by 5 inches)	216 by 356 mm (8.5 by 14 inches)

Note   Use only tray 1 to print envelopes.

You might experience some jams when using any media with a length less than 178 mm (7 inches). This might be caused by paper that has been affected by environmental conditions. For optimum performance, make sure you are storing and handling the paper correctly (see "Printing and paper storage environment" on page 138).

Choose envelopes in the printer driver (see "Printing by type and size of media" on page 53).

Envelopes with double side seams

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. Be sure the seam extends all the way to the corner of the envelope as illustrated below.

Correct

Incorrect
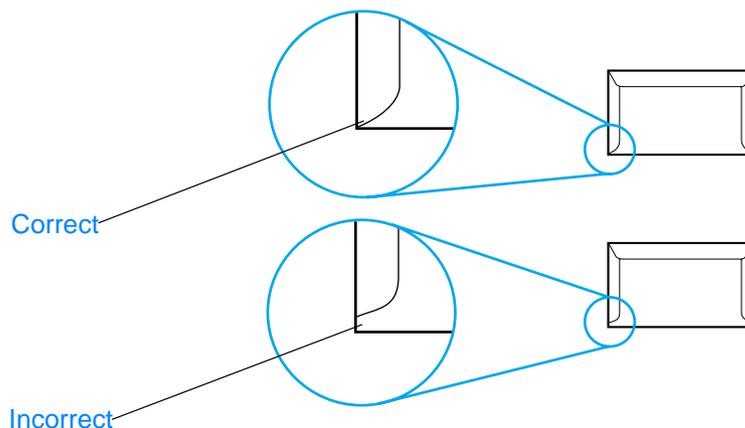
Envelopes with adhesive strips or flaps

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. The extra flaps and strips might cause wrinkling, creasing, or even jams and might even damage the fuser.

Envelope margins

The following gives typical address margins for a commercial #10 or DL envelope.

Type of address	Top margin	Left margin
Return address	15 mm (0.6 inch)	15 mm (0.6 inch)
Delivery address	51 mm (2 inches)	89 mm (3.5 inches)

Note   For the best print quality, position margins no closer than 15 mm (0.6 inch) from the edges of the envelope.

Avoid printing over the area where the envelope's seams meet.

Envelope storage

Proper storage of envelopes helps contribute to print quality. Envelopes should be stored flat. If air is trapped in an envelope, creating an air bubble, then the envelope might wrinkle during printing.

For more information, see "To load envelopes in tray 1" on page 38.

Labels

CAUTION   To avoid damaging the printer, use only labels recommended for laser printers

To prevent serious jams, always use tray 1 to print labels and always use the rear output bin.

Never print on the same sheet of labels more than once or print on a partial sheet of labels.

Label construction

When selecting labels, consider the quality of each component:

- **Adhesives:** The adhesive material should be stable at 200° C (392° F), the printer's fusing temperature.
- **Arrangement:** Only use labels with no exposed backing between them. Labels can peel off sheets with 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.

For more information, see "Printing on labels" on page 39.

Note   Choose labels in the printer driver (see "Printing by type and size of media" on page 53).

Transparencies

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

CAUTION   To avoid damaging the printer, use only transparencies recommended for use in HP LaserJet printers, such as HP-brand transparencies. (For ordering information, see "Ordering parts, accessories, and supplies" on page 116.)

For more information, see "Printing on transparencies" on page 40.

Note   Choose transparencies in the printer driver (see "Printing by type and size of media" on page 53).

B Control panel menus

You can perform most routine printing tasks from the computer by using the program or printer driver. These two methods are the most convenient way to control the printer, and they will override the printer control panel settings. See the Help file for your program, or, for more information about gaining access to the printer driver, see "Changing the settings for a print job" on page 47.

You can also control the printer by changing settings at the printer control panel. Use the control panel to gain access to printer features not supported by the program or printer driver.

You can print a menu map at the printer control panel that shows the settings with the currently selected values (see "Menu map" on page 72. The sections that follow list the settings and possible values. In the Values column, the default value for each setting is the one with an asterisk (*) next to it.

Some menus or menu items appear only if certain options are installed in the printer.

This section explains the following menus:

- "Retrieve Job menu" on page 144
- "Information menu" on page 145
- "Paper Handling menu" on page 146
- "Configure Device menu" on page 148
- "Diagnostics menu" on page 161
- "Service menu" on page 161

Retrieve Job menu

This menu provides a list of the stored jobs in the printer and access to all the job storage features. You can print or delete these jobs at the printer control panel. See "Using job-storage features" on page 57 for more information about using this menu.

Note If you turn the printer power off, all stored jobs are deleted unless an optional hard disk is installed.

The section that follows lists the settings and possible values. In the Values column, the default value for each setting is the one with an asterisk (*) next to it.

Item	Values	Explanation
[USERNAME]	There is no value to select.	The name of the person who sent the job.
[JOBNAME]	There is no value to select.	The name of the job stored in the printer. Select one of your jobs or all of your private jobs (those that were assigned a PIN in the printer driver). To select all of your private jobs, select ALL PRIVATE JOBS.
NO STORED JOBS	There is no value to select.	Indicates that there are no stored jobs to print or delete.
ALL PRIVATE JOBS	There is no value to select.	Appears if two or more private jobs are stored in the printer. Selecting this item prints all private jobs stored in the printer for that user, after the correct PIN is entered.
Print	There is no value to select.	Prints the selected job.
ENTER PIN TO PRINT	*0000 to 9999	A prompt that appears for jobs that were assigned a personal identification number (PIN) in the printer driver. You must enter the PIN to print the job.
COPIES	*1 to 32000	Allows you to select the number of copies that you want to print. 1-32000: Prints the requested number of copies of the job.
Delete	There is no value to select.	Deletes the selected job from the printer.
ENTER PIN TO DELETE	*0000 to 9999	A prompt that appears for jobs that were assigned a PIN in the printer driver. You must enter the PIN to delete the job.

Information menu

The Information menu contains printer information pages that give details about the printer and its configuration. Scroll to the information page that you want and press ✓ (SELECT button).

Item	Explanation
PRINT MENU MAP	The menu map shows the layout and current settings of the printer control panel menu items. For more information, see "Menu map" on page 72.
PRINT CONFIGURATION	The configuration page shows the current printer configuration. If an HP Jetdirect print server is installed, an HP Jetdirect configuration page will print out as well. For more information, see "Configuration page" on page 72.
PRINT SUPPLIES STATUS PAGE	The supplies status page shows the levels of the supplies for the printer, calculation of the number of pages remaining, and cartridge-usage information. This page is available only if you are using genuine HP supplies. For more information, see "Supplies status page" on page 74.
PRINT USAGE PAGE	The usage page shows the quantity of pages printed, as well as the paper source used. It also shows the number of one-sided versus two-sided pages that have been printed. **Note** Appears only if a mass-storage device that contains a recognized file system is installed in the printer, such as an optional flash DIMM or optional hard disk accessory. This item generates a page containing information that can be used for accounting purposes.
PRINT FILE DIRECTORY	Appears only if a mass storage device that contains a recognized file system is installed in the printer, such as an optional flash DIMM or optional hard disk accessory. The file directory shows information for all installed mass storage devices. For more information, see "Printer memory and expansion" on page 163.
PRINT PCL FONT LIST	The PCL font list shows all the PCL fonts currently available to the printer. For more information, see "PS or PCL font list" on page 76.
PRINT PS FONT LIST	The PS font list shows all the PS fonts currently available to the printer. For more information, see "PS or PCL font list" on page 76.

Paper Handling menu

If paper-handling settings are correctly configured at the printer control panel, you can print by selecting the type and size of paper in the program or printer driver.

Some items on this menu (such as duplex and manual feed) are available in the program or printer driver (if the appropriate driver is installed). Program and printer-driver settings override control panel settings. For more information, see "Using the printer driver" on page 47.

The following table lists the settings and possible values. In the Values column, the default value for each setting is the one with an asterisk (*) next to it.

Item	Values	Explanation
TRAY 1 SIZE	*ANY SIZE LETTER LEGAL EXECUTIVE A4 A5 B5 (ISO) B5 (JIS) EXECUTIVE (JIS) DPOSTCARD (JIS) 16K ENVELOPE #10 ENVELOPE MONARCH ENVELOPE C5 ENVELOPE DL ENVELOPE B5 CUSTOM ANY CUSTOM	Sets the value to correspond with the paper size currently loaded in tray 1. ANY SIZE: If both the type and size for tray 1 are set to ANY, the printer will pull paper from tray 1 first as long as paper is loaded in the tray. A size other than ANY SIZE: The printer does not pull from this tray unless the type or size of the print job matches the type or size loaded in this tray.
TRAY 1 TYPE	*ANY TYPE PLAIN PREPRINTED LETTERHEAD TRANSPARENCY PREPUNCHED LABELS BOND RECYCLED COLOR CARDSTOCK>164 G/M2 ROUGH ENVELOPE	Sets the value to correspond with the type of paper or other print media currently loaded in tray 1. ANY TYPE: If both the type and size for tray 1 are set to ANY, the printer will pull paper from tray 1 first as long as paper is loaded in the tray. A type other than ANY TYPE: The printer does not pull from this tray unless the type or size of the print job matches the type or size loaded in this tray.
TRAY 2 SIZE	*ANY SIZE LETTER LEGAL EXECUTIVE A4 A5 B5 (ISO) B5 (JIS) EXECUTIVE (JIS) 16K	Sets the value to correspond with the paper size currently loaded in tray 2.

Item	Values	Explanation
TRAY 2 TYPE	ANY TYPE PLAIN PREPRINTED *LETTERHEAD TRANSPARENCY PREPUNCHED LABELS BOND RECYCLED COLOR CARDSTOCK>164 G/M2 ROUGH	Sets the value to correspond with the paper type currently loaded in tray 2.
TRAY 3 SIZE	*ANY SIZE LETTER A4	Sets the value to correspond with the paper size currently loaded in tray 3.
TRAY 3 TYPE	*ANY TYPE PLAIN PREPRINTED LETTERHEAD TRANSPARENCY PREPUNCHED LABELS BOND RECYCLED COLOR CARDSTOCK>164 G/M2 ROUGH	Sets the value to correspond with the paper type currently loaded in tray 3.
TRAY [N] CUSTOM	There is no value to select.	This item appears only if a tray is set to a custom size.
UNIT OF MEASURE	INCHES *MILLIMETERS	Selects the unit of measure to use when you set custom paper sizes for the specified tray.
X DIMENSION	3.0 to 8.50 INCHES 76 to 216 MM	Sets the measurement of the width of the paper (measurement from side to side in the tray).
Y DIMENSION	5.0 to 14.00 INCHES 127 to 356 MM	Sets the measurement of the length of the paper (measurement from front to back in the tray). After the Y DIMENSION value is selected, a summary screen appears. This screen contains feedback that summarizes all the information entered on the previous three screens, such as TRAY 1 SIZE= 8.50 × 14 INCHES, Setting saved.

Configure Device menu

This menu contains administrative functions.

Printing submenu

Some items on this menu are available in the program or printer driver (if the appropriate driver is installed). Program and printer-driver settings override control panel settings. In general, it is better to change these settings in the printer driver, if applicable.

The following table lists the settings and possible values. In the Values column, the default value for each setting is the one with an asterisk (*) next to it.

Item	Values	Explanation
COPIES	*1 to 999	Sets the default number of copies by selecting any number from 1 to 999. Use ▲ (Up button) or ▼ (Down button) to select the number of copies. This setting applies only to print jobs that do not have the number of copies specified in the program or printer driver, such as a UNIX or Linux application. **Note** It is best to set the number of copies in the program or printer driver. (Program and printer-driver settings override control panel settings.)
DEFAULT PAPER SIZE	*LETTER LEGAL EXECUTIVE A4 A5 B5 (ISO) B5 (JIS) EXECUTIVE (JIS) DPOSTCARD (JIS) 16K ENVELOPE #10 ENVELOPE MONARCH ENVELOPE C5 ENVELOPE DL ENVELOPE B5 CUSTOM	Sets the default image size for paper and envelopes. (The item name changes from paper to envelope as you scroll through the available sizes.) This setting applies only to print jobs that do not have the paper size specified in the program or printer driver.
DEFAULT CUSTOM PAPER SIZE	UNIT OF MEASURE X DIMENSION Y DIMENSION	Sets a default custom paper size for tray 1. This menu appears only if the Custom-Standard switch in the selected tray is set to Custom.
DUPLEX	*OFF ON	Appears only for printers that include a built-in duplexer (HP LaserJet 2300d printer, HP LaserJet 2300dn printer, and HP LaserJet 2300dtn printer). Set the value to ON to print on both sides (duplex) or OFF to print on one side (simplex) of a sheet of paper.

Item	Values	Explanation
DUPLEX BINDING	*LONG EDGE SHORT EDGE	Changes the binding edge for duplex printing. The menu item appears only if the printer includes a built-in duplexer (HP LaserJet 2300d printer, HP LaserJet 2300dn printer, and HP LaserJet 2300dtn printer) and DUPLEX=ON.
OVERRIDE A4/ LETTER	*NO YES	Allows the printer to print an A4-size job on letter-size paper if A4-size paper is not loaded in the printer (or vice versa).
MANUAL FEED	*OFF ON	Feeds the paper manually from tray 1, rather than automatically from a tray. If MANUAL FEED=ON and tray 1 is empty, the printer goes offline when it receives a print job. MANUALLY FEED [PAPER SIZE] appears on the printer control panel display.
COURIER FONT	*REGULAR DARK	Selects the version of Courier font to use: REGULAR: The internal Courier font available on the HP LaserJet 4 series printers. DARK: The internal Courier font available on the HP LaserJet III series printers.
WIDE A4	*NO YES	Changes the number of characters that can be printed on a single line of A4-size paper. NO: Up to 78 10-pitch characters can be printed on one line. YES: Up to 80 10-pitch characters can be printed on one line.
PRINT PS ERRORS	*OFF ON	Determines whether a PS error page prints or not. OFF: PS error page never prints. ON: PS error page prints when PS errors occur.

PCL submenu

The following table lists the settings and possible values. In the Values column, the default value for each setting is the one with an asterisk (*) next to it.

Item	Values	Explanation
FORM LENGTH	5 to 128 (*60)	Sets vertical spacing from 5 to 128 lines for default paper size.
ORIENTATION	*PORTRAIT LANDSCAPE	Allows you to select default page orientation. **Note** It is best to set the page orientation in the program or printer driver. (Program and printer-driver settings override control panel settings.)
FONT SOURCE	*INTERNAL SOFT SLOT 1, 2, or 3	INTERNAL: Internal fonts. SOFT: Permanent soft fonts. This option is available only if it is installed. SLOT 1, 2, or 3: Fonts stored in one of the three DIMM slots. This option is available only if it is installed.
FONT NUMBER	*0 to 999 (*0)	The printer assigns a number to each font and lists the numbers on the PCL Font List. The font number appears in the Font # column of the printout.
FONT PITCH	0.44 to 99.99 (*10.00)	Selects the font pitch. This item might not appear, depending on the font selected.
FONT POINT SIZE	4.00 to 999.75 (*12.00)	Selects the font point size. This appears only if a font with a scalable point size is selected as the default font.
SYMBOL SET	*PC-8 Several	Selects any one of several available symbol sets at the printer control panel. A symbol set is a unique grouping of all the characters in a font. PC-8 or PC-850 is recommended for line-draw characters.
APPEND CR TO LF	*NO YES	Select YES to append a carriage return to each line feed encountered in backward-compatible PCL jobs (pure text, no job control). Some environments, such as UNIX, indicate a new line using only the line feed control code. This option allows you to append the required carriage return to each line feed.

Print Quality submenu

Some items on this menu are available in the program or printer driver (if the appropriate driver is installed). Program and printer-driver settings override control panel settings. For more information, see "Using the printer driver" on page 47. In general, it is best to change these settings in the printer driver, if applicable.

The following table lists the settings and possible values. In the Values column, the default value for each setting is the one with an asterisk (*) next to it.

Item	Values	Explanation
SET REGISTRATION	There is no value to select.	Shifts the margin alignment to center the image on the page from top to bottom, and left to right. You can also align the image that is printed on the front with the image that is printed on the back.
PRINT TEST PAGE	There is no value to select.	Prints a test page to show the current registration settings.
SOURCE	ALL TRAYS TRAY 1 *TRAY 2 TRAY 3	Selects the tray for which you want to print the test page.
ADJUST TRAY [N] X1 Shift X2 Shift Y Shift	-20 to 20 (*0)	Sets the registration for the specified tray, where [N] is the number of the tray. A selection appears for each tray that is installed, and registration must be set for each tray. X1 SHIFT: Registration of the image on the paper from side to side, as the paper lies in the tray. For duplexing, this side is the second side (back) of the paper. X2 SHIFT: Registration of the image on the paper from side to side, as the paper lies in the tray, for the first side (front) of a duplexed page. This item appears only if the printer includes a built-in duplexer (HP LaserJet 2300d printer, HP LaserJet 2300dn printer, and HP LaserJet 2300dtn printer) and DUPLEX is ON (see "DUPLEX" on page 148). Set the X1 SHIFT first. Y SHIFT: Registration of the image on the paper from top to bottom as the paper lies in the tray.

Item	Values	Explanation
FUSER MODES PLAIN PREPRINTED LETTERHEAD TRANSPARENCY PREPUNCHED LABELS BOND RECYCLED COLOR CARDSTOCK>164 G/M2 ROUGH ENVELOPE RESTORE MODES	*NORMAL HIGH1 HIGH2 LOW REDUCE CURL	Configures the fuser mode associated with each paper types. Change the fuser mode only if you are experiencing problems printing on certain paper types. After you select a type of paper, you can select a fuser mode that is available for that type. The available selections might include some or all of the following modes: NORMAL: Used for most types of paper. HIGH 1: Used for rough paper. HIGH 2: Used for paper with a special or rough finish. LOW: Used for transparencies. REDUCE CURL: Used to reduce paper curl. Turning the option on might decrease print quality. This is because the setting reduces the amount of heat that the fuser applies during the printing process. With the lower temperature, toner might not completely bond to the media that you are using. The default fuser mode is NORMAL for all print media types except transparencies (LOW), and rough paper (HIGH1). **CAUTION** Do not change the fuser mode for transparencies. Failure to use the LOW setting while printing transparencies can result in permanent damage to the printer and fuser. Always select Transparencies as the Type in the printer driver and set the tray type at the printer control panel to TRANSPARENCY. When selected, RESTORE MODES resets the fuser mode for each media type back to its default setting.
OPTIMIZE	There is no value to select.	
HIGH TRANSFER	*OFF ON	Increases the intensity at which toner is transferred to the media. Set to ON for the following reasons: ● You are using highly resistive, lower-quality papers. (HP recommends using only HP paper and print media.) ● A combination of low humidity and high temperature is causing toner to scatter around the characters (halo effect).
MORE SEPARATION	*OFF ON	Decreases the possibility for jams in the print cartridge area under conditions of high humidity and high temperature.
RESTORE OPTIMIZE	There is no value to select.	Returns to the defaults for the Optimize settings.

Item	Values	Explanation
RESOLUTION	300 600 *FASTRES 1200 PRORES 1200	Selects the resolution. All values print at the same speed. 300: Produces draft print quality and can be used for compatibility with the HP LaserJet III family of printers. 600: Produces high print quality for text and can be used for compatibility with the HP LaserJet 4 family of printers. FASTRES 1200: Produces 1200-dpi print quality for fast, high-quality printing of business text and graphics. PRORES 1200: Produces 1200-dpi printing for the best quality in line art and graphic images. **Note** It is best to change the resolution in the program or printer driver. (Program and printer-driver settings override control panel settings.)
RET	OFF LIGHT *MEDIUM DARK	Use the Resolution Enhancement technology (REt) setting to produce print with smooth angles, curves, and edges. REt does not affect print quality if the print resolution is set to FastRes 1200. All other print resolutions benefit from REt. **Note** It is best to change the REt setting in the program or printer driver. (Program and printer-driver settings override control panel settings.)
ECONOMODE	*OFF ON	Turn EconoMode ON (to save toner) or OFF (for high quality). EconoMode creates draft-quality printing by reducing the amount of toner on the printed page. **Note** It is best to turn EconoMode on or off in the program or printer driver. (Program and printer-driver settings override control panel settings.) **CAUTION** HP does not recommend full-time use of EconoMode. If EconoMode is used full-time, it is possible that the toner supply will outlast the mechanical parts in the print cartridge.
TONER DENSITY	1 2 *3 4 5	Lighten or darken the print on the page by setting the toner density. Select a setting ranging from 1 (light) to 5 (dark). The default setting of 3 usually produces the best results.
CREATE CLEANING PAGE	There is no value to select.	Press ✓ (SELECT button) to print a cleaning page (for cleaning toner from the fuser). Open the rear output bin. Follow the instructions on the cleaning page. For more information, see *"Cleaning the fuser" on page 79.
PROCESS CLEANING PAGE	There is no value to select.	This item is available only after a cleaning page has been created. Follow the instructions printed on the cleaning page. The cleaning process might take up to 2.5 minutes.

System Setup submenu

Items on this menu affect printer behavior. Configure the printer according to your printing needs.

The following table lists the settings and possible values. In the Values column, the default value for each setting is the one with an asterisk (*) next to it.

Item	Values	Explanation
JOB STORAGE LIMIT	1 to 100 (*32)	Specifies the number of quick copy jobs that can be stored on the printer. This item appears only if an optional hard disk accessory is installed.
JOB HELD TIMEOUT	*OFF 1 HOUR 4 HOURS 1 DAY 1 WEEK	Sets the amount of time that held jobs are kept before being automatically deleted from the queue.
TRAY BEHAVIOR	There is no value to select.	Determines how the printer responds to jobs that request certain trays.
USE REQUESTED TRAY	*EXCLUSIVELY FIRST	Determines whether the printer tries to pull paper from a different tray than the one you selected in the printer driver. EXCLUSIVELY: Sets the printer to pull paper only from the tray you selected and not pull from another tray, even if the tray you selected is empty. FIRST: Sets the printer to pull from the tray you selected first, but allows the printer to pull from another tray automatically if the tray you selected is empty.
MANUALLY FEED PROMPT	ALWAYS *UNLESS LOADED	Determines when the printer shows a prompt regarding pulling from tray 1 if your print job does not match the type or size loaded in any other tray. ALWAYS: Select this option if you always want to be prompted before the printer pulls from tray 1. UNLESS LOADED: Prompts you only if tray 1 is empty.
POWERSAVE TIME	1 MINUTE 15 MINUTES *30 MINUTES 60 MINUTES 90 MINUTES 2 HOURS 4 HOURS	Sets how long the printer remains idle before it enters PowerSave mode. PowerSave mode does the following: ● minimizes the amount of power consumed by the printer when it is idle ● reduces wear on electronic components in the printer (turns off the display backlight, but the display is still readable) The printer automatically comes out of PowerSave mode when you send a print job, press a printer control panel button, open a tray, or open the top cover. To turn PowerSave mode on and off, see "POWERSAVE" on page 160.
DISPLAY BRIGHTNESS	1 2 3 4 *5 6 7 8 9 10	Customizes the readability of the display panel for your environment by lowering or raising brightness.

Item	Values	Explanation
PERSONALITY	*AUTO PCL PS	Selects the default printer language (personality). Possible values are determined by which valid languages are installed in the printer. Normally, you should not change the printer language. If you change it to a specific printer language, the printer will not switch automatically from one language to another unless specific software commands are sent to the printer.
CLEARABLE WARNINGS	*JOB ON	Sets the amount of time that a clearable warning is shown on the printer control panel display. JOB: The clearable warning message appears until the end of the job that generated the message. ON: The clearable warning message appears until you press ✓ (SELECT button).
AUTO CONTINUE	OFF *ON	Determines how the printer reacts to errors. If the printer is on a network, you probably want to turn AUTO CONTINUE to ON. ON: If an error occurs that prevents printing, the message appears on the printer control panel display, and the printer goes offline for 10 seconds before returning online. OFF: If an error occurs that prevents printing, the message remains on the printer control panel display, and the printer remains offline until you press ✓ (SELECT button).
CARTRIDGE LOW	*CONTINUE STOP	Determines how the printer behaves if the print cartridge is low. The ORDER CARTRIDGE message first appears when about 10 percent of the toner remains in the print cartridge at 5 percent coverage (about 600 pages remaining). Print quality is not guaranteed if you print after receiving this message. CONTINUE: The printer continues to print, and the message appears until you replace the print cartridge. STOP: The printer pauses printing until you replace the print cartridge or press ✓ (SELECT button) before each job to print it. The message appears until you replace the print cartridge.
CARTRIDGE OUT	*CONTINUE STOP	Determines how the printer reacts if the print cartridge is empty. CONTINUE: The printer continues to print, and the REPLACE CARTRIDGE message appears until you replace the print cartridge. HP does not guarantee print quality if you select CONTINUE after a REPLACE CARTRIDGE condition. Replace the print cartridge as soon as possible to ensure print quality. STOP: The printer stops printing until you replace the print cartridge. If the end of drum life is reached, the printer stops, regardless of the CARTRIDGE OUT setting.

Item	Values	Explanation
JAM RECOVERY	*AUTO OFF ON	Determines how the printer behaves if a jam occurs. AUTO: The printer automatically selects the best mode for printer jam recovery (usually ON). OFF: The printer does not reprint pages following a jam. Printing performance might be increased with this setting. ON: The printer automatically reprints pages after a jam is cleared.
RAM DISK	*AUTO ON	Determines how the RAM disk is configured. (This item does not apply to printers with only 32 MB of RAM, such as the base HP LaserJet 2300L printer and HP LaserJet 2300 printer.) AUTO: Allows the printer to determine the optimal RAM-disk size based on the amount of available memory. OFF: The RAM is disabled. **Note** If you change the setting from OFF to AUTO, the printer automatically reinitializes when it becomes idle.
LANGUAGE	*ENGLISH Several	Selects the language for the messages that appear on the printer control panel display.

I/O submenu

Items on the I/O (input/output) menu affect the communication between the printer and the computer. The submenu appears only when an EIO (enhanced input/output) device is installed in an EIO slot on the printer (such as an HP Jetdirect print server). The contents of the submenu depend on which type of EIO card is installed. If the printer contains an HP Jetdirect print server EIO card, you can configure basic networking parameters using the submenu. These and other parameters can also be configured through HP Web Jetadmin (see "Using HP Web Jetadmin software" on page 64) or other network configuration tools, such as Telnet or the embedded Web server (see "Using the embedded Web server" on page 62).

The following table lists the settings and possible values. In the Values column, the default value for each setting is the one with an asterisk (*) next to it.

Item	Values	Explanation
I/O TIMEOUT	5 to 300 (*15)	Select the I/O timeout period in seconds.
		This setting allows you to adjust timeout for best performance. If data from other ports appear in the middle of your print job, increase the timeout value.
PARALLEL INPUT	There is no value to select.	Configure the parallel features.
HIGH SPEED	NO *YES	Select YES to enable the printer to accept the faster parallel communications that are used for connections with newer computers.
ADVANCED FUNCTIONS	OFF *ON	Turn the bidirectional parallel communication on or off. The default is set for a bidirectional parallel port (IEEE-1284).
		The function allows the printer to send status readback messages to the computer. (Turning the parallel advanced functions on might slow language switching.)
EIO [X] JETDIRECT MENU	There is no value to select.	The [X] represents the slot in which the optional HP Jetdirect print server is installed, if any. Which of the following submenus appears depends on the type of print server that is installed: ● TCP/IP ● IPX/SPC ● APPLETALK ● DLC/LLC
TCP/IP	There is no value to select.	
ENABLE	OFF *ON	Select whether the TCP/IP protocol stack is enabled or disabled.
HOST NAME	*NPIXXXXXX	An alphanumeric string (up to 32 characters long) that is used to identify the device. This name is listed on the Jetdirect configuration page.
		The default host name is NPIXXXXXX, where XXXXXX is composed of the last six digits of the LAN hardware (MAC) address.
CONFIG METHOD	*BOOTP DHCP MANUAL	Select whether the TCP/IP configuration parameters are set automatically from a network server by using BootP (Bootstrap Protocol), DHCP (Dynamic Host Configuration Protocol), or manually from the I/O submenu.
		If you select DHCP and a DHCP lease exists, use the DHCP settings to set DHCP lease options.
		If you select MANUAL, use the MANUAL settings to configure TCP/IP parameters.

Item	Values	Explanation
DHCP settings	DHCP RELEASE *NO YES	This menu appears if CONFIG METHOD is set to DHCP and a DHCP lease for the print server exists. NO (default): The current DHCP lease is saved. YES: The current DHCP lease along with the leased IP address are released.
	DHCP RENEW *NO YES	This menu appears if CONFIG METHOD is set to DHCP and a DHCP lease for the print server exists. NO (default): The print server does not request to renew the DHCP lease. YES: The print server requests to renew the current DHCP lease.
Manual settings	IP ADDRESS n.n.n.n	The unique IP address of the printer, where n is a value from 0 to 255.
	SUBNET MASK m.m.m.m	The subnet mask for the printer, where m is a value from 0 to 255. The mask is applied to IP addresses to uniquely identify subnetworks and nodes.
	SYSLOG SERVER n.n.n.n	The IP address of the syslog server used to receive and log syslog messages.
	DEFAULT GATEWAY n.n.n.n	The IP address of the gateway or route used for communications with other networks.
	IDLE TIMEOUT XX	The timeout value (in seconds) before an idle TCP print data connection is automatically closed. The default value is 270 seconds. 0 disables the timeout.
IPX/SPX	There is no value to select.	
ENABLE	OFF *ON	Select whether the IPX/SPX protocol stack (in Novell NetWare networks, for example) is enabled or disabled.
FRAME TYPE	*AUTO EN_8023 EN_II EN_SNAP TR_8022 TR_SNAP	Select the frame type setting for your network. AUTO (default): Automatically sets and limits the frame type to the first one detected. For an Ethernet network only, frame type selections include EN_8023, EN_II, EN_8022, and EN_SNAP. For a Token Ring network only, frame type selections include TR_8022 and TR_SNAP.
SOURCE ROUTING	*AUTO OFF ALL ROUTES SINGLE ROUTE	For a Token Ring network only, specify the NetWare Token Ring Source Routing parameter. AUTO (default): The type of source routing required on the network is automatically sensed. OFF: All packets are sent without source routing, and only packets from the same ring are received. ALL ROUTES and SINGLE ROUTE: All packets are sent with source routing (broadcasts and when the route is unknown).
APPLETALK	There is no value to select.	
ENABLE	OFF *ON	For an Ethernet network only, select whether the AppleTalk protocol stack is enabled or disabled.
DLC/LLC	There is no value to select.	
ENABLE	OFF *ON	Select whether the DLC/LLC protocol stack is enabled or disabled.

Item	Values	Explanation
SECURE WEB	*HTTPS REQUIREMT HTTPS OPTIONAL	For configuration management, specify whether the embedded Web server will accept communications using HTTPS (Secure HTTP) only, or both HTTP and HTTPS. HTTPS REQUIRED (default): For secure, encrypted communications, only HTTPS access is accepted. The printer server will appear as a secure site. HTTPS OPTIONAL: Access using either HTTP or HTTPS is permitted.
RESET SECURITY	*NO YES	Specify whether the current security settings on the print server will be saved or reset to factory defaults. NO (default): The current security settings are maintained. YES: Security settings are reset to factory defaults.
LINK SPEED	*AUTO 10T HALF 10T FULL 100TX HALF 100TX FULL	For an Ethernet network only, select the network link speed and the communication mode of the HP Jetdirect 10/100Base-TX print server. The default setting is AUTO, where the printer automatically configures itself to match the network link speed (10 or 100 Mbps) and communication mode (half-duplex or full-duplex).

Resets submenu

Items on the Resets submenu relate to returning settings to the defaults and changing settings such as PowerSave.

The following table lists the settings and possible values. In the Values column, the default value for each setting is the one with an asterisk (*) next to it.

Item	Values	Explanation
RESTORE FACTORY SETTINGS	There is no value to select.	Performs a simple reset and restores most of the factory (default) settings. This item also clears the input buffer for the active I/O. Restoring factory settings does not affect network parameter settings on the optional HP Jetdirect print server. **CAUTION** Restoring memory during a print job cancels the print job.
POWERSAVE	OFF *ON	Turns PowerSave mode on or off. PowerSave mode does the following: ● minimizes the amount of power consumed by the printer when it is idle ● reduces wear on electronic components in the printer (turns off the display backlight, but display is still readable) The printer automatically comes out of PowerSave mode when you send a print job, press a printer control panel button, open a tray, or open the top cover. You can set how long the printer remains idle before it enters PowerSave mode. (See "POWERSAVE TIME" on page 154.)

Diagnostics menu

Administrators can use this submenu to isolate parts and to troubleshoot jam and print-quality issues.

The following table lists the settings and possible values. In the Values column, the default value for each setting is the one with an asterisk (*) next to it.

Item	Values	Explanation
PRINT EVENT LOG	There is no value to select.	Press ✓ (SELECT button) to generate a list of the 50 most recent entries in the event log. The printed event log shows error number, page count, error code, and description or personality.
SHOW EVENT LOG	There is no value to select.	Press ✓ (SELECT button) to scroll through the contents of the event log at the printer control panel and shows the 50 most recent events. Use ▲ (UP button) or ▼ (DOWN button) to scroll through the event log contents.
PAPER PATH TEST	There is no value to select.	Generates a test page that is useful for testing the paper-handling features of the printer.
PRINT TEST PAGE	There is no value to select.	Press ✓ (SELECT button) to start the paper path test using the source (tray), destination (output bin), duplex, and number of copies settings that you set in the other items on the Paper Path Test menu. Set the other items before choosing PRINT TEST PAGE.
SOURCE	ALL TRAYS TRAY 1 *TRAY 2 TRAY 3	Select the tray whose paper path you want to test. You can select any tray that is installed. Select ALL TRAYS to test all tray paper paths. (Paper must be loaded in the selected trays.)
DUPLEX	*OFF ON	Determine whether or not the paper goes through the duplexer during the paper path test. The menu item appears only if the printer includes a built-in duplexer (HP LaserJet 2300d printer, HP LaserJet 2300dn printer, and HP LaserJet 2300dtn printer).
COPIES	*1 10 50 100 500	Set how many sheets of paper are used from each tray during the paper path test. If you are testing the optional stapler stacker (DESTINATION item), select 10 or higher.

Service menu

The Service menu is locked and requires a PIN for access. This menu is intended for use by authorized service personnel.

C Printer memory and expansion

This section explains the memory features of the printer and provides steps for expansion.

Printer memory

The printer comes with one dual inline memory module (DIMM) already installed in the right-most slot position on the formatter (labeled "Boot DIMM Only"). There are two additional DIMM slots for upgrading with:

- more printer memory—DIMMs are available in 8, 16, 32, 64, and 128 MB, for a maximum of 288 MB for the HP LaserJet 2300L and HP LaserJet 2300 printers, and a maximum of 304 MB for the HP LaserJet 2300d, HP LaserJet 2300n, HP LaserJet 2300dn, and HP LaserJet 2300dtn printers
- DIMM-based accessory fonts, macros, and patterns
- other DIMM-based printer languages and printer options

For ordering information, see "Ordering parts, accessories, and supplies" on page 116.

| Note | Single inline memory modules (SIMMs) used in previous HP LaserJet printers are not compatible with the printer. |

You might want to add more memory to the printer if you often print complex graphics, print PostScript (PS) documents, or use many downloaded fonts. Added memory also gives you more flexibility in supporting job-storage features, such as quick copying.

The printer has one EIO slot for expanding the printer capability with a mass storage device, such as an optional hard disk for storing forms and fonts, and for certain job-storage functions. The EIO slot is also used for adding a network card or a connectivity card for serial, USB, or AppleTalk.

To find out how much memory is installed in the printer, or to find out what is installed in the EIO slots, print a configuration page. (See "Configuration page" on page 72).

Installing memory
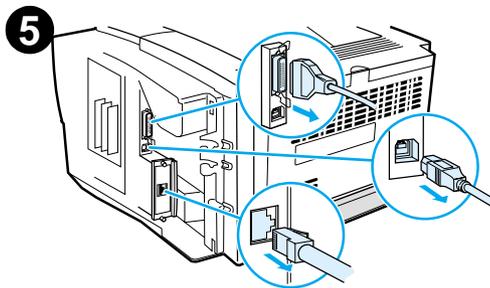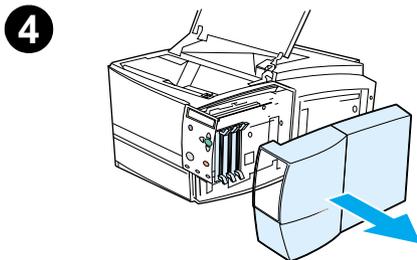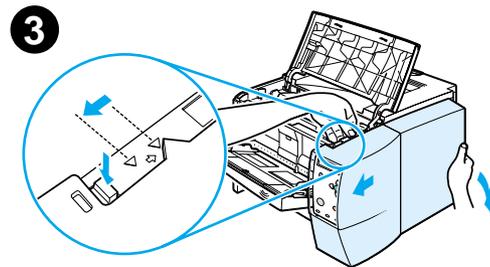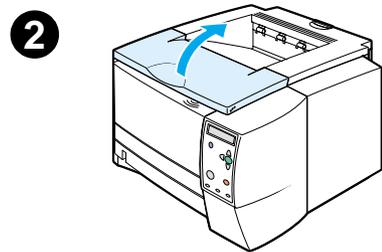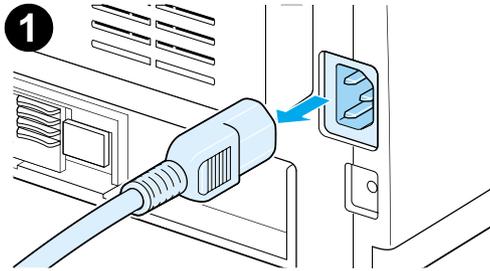
Static electricity can damage DIMMs. When handling DIMMs, either wear an antistatic wrist strap or frequently touch the surface of the DIMM antistatic package, then touch bare metal on the printer.

The HP LaserJet 2300 series printers come with one DIMM installed in slot 1. Do not remove the preinstalled DIMM from slot 1. You can use slot 2 or slot 3 interchangeably for adding DIMMs.

If you have not already done so, print a configuration page to find out how much memory is installed in the printer before adding more memory. See "Configuration page" on page 72.

1   After the configuration page is printed, turn the printer off and disconnect the power cord.

2   Open the top cover

3   Remove the side panel by pressing the release button and sliding the right side panel forward until the alignment arrows line up.

4   Pull the panel away from the printer, exposing the available DIMM slots.

5   Disconnect all interface cables.

Continued on the next page.
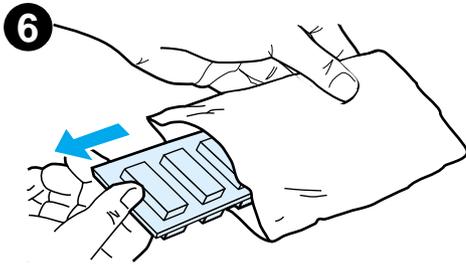
6 Remove the DIMM from the antistatic package.
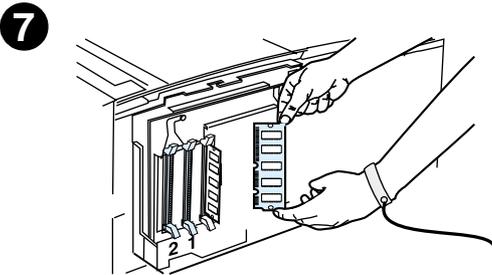
7 Holding the DIMM by the edges (as shown in the illustration), align the notches on the DIMM with the DIMM slot. (Check that the locks on each side of the DIMM slot are open.)

8 Press the DIMM straight into the slot (press firmly). Make sure the locks on each side of the DIMM snap inward into place. (To remove a DIMM, the locks must be released.)

Repeat steps 6, 7, and 8 for each DIMM being installed.
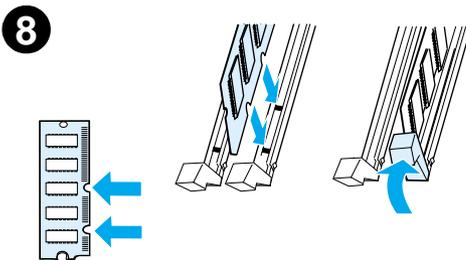
9 Reconnect the interface cable(s) and power cord.

10 To replace the side panel, line up the alignment arrows and slide the panel backwards until the release button latches into place.

11 Close the top cover and turn the printer on.
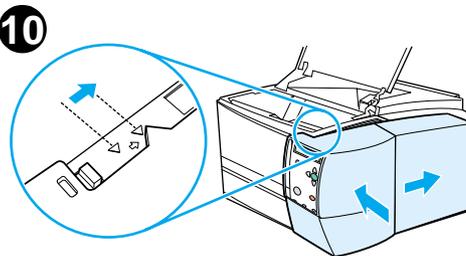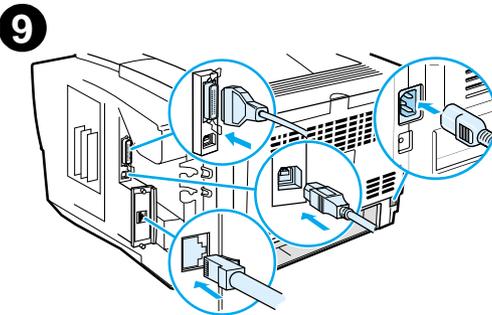
Checking memory installation

To verify that DIMMs are installed correctly:

1 Turn the printer on. Check that the printer control panel displays the READY light after the printer has gone through the startup sequence. If an error message appears, a DIMM might have been incorrectly installed. See "Troubleshooting network printing problems" on page 107.

2 Print a configuration page (see "Configuration page" on page 72).

3 Check the Installed Personalities and Options section on the self test/configuration page and compare it with the self test/configuration page printed before the DIMM installation.

If the amount of recognized memory has not increased:

● The DIMM might not be installed correctly (repeat the installation procedure).

● Try another DIMM slot.

● The DIMM might be defective (try a new DIMM).

Installing an HP Jetdirect EIO card
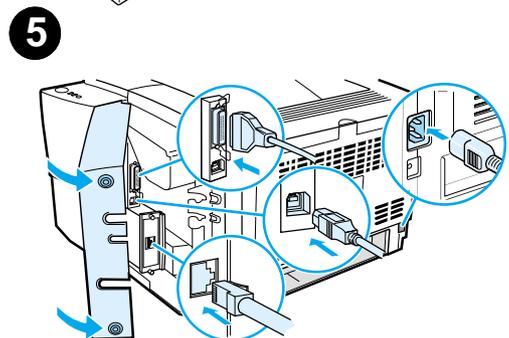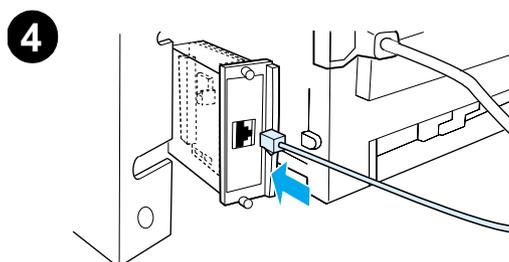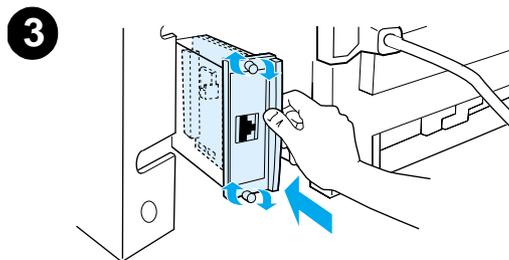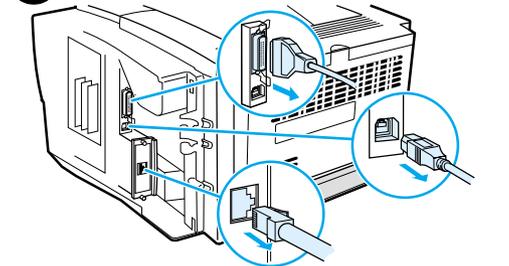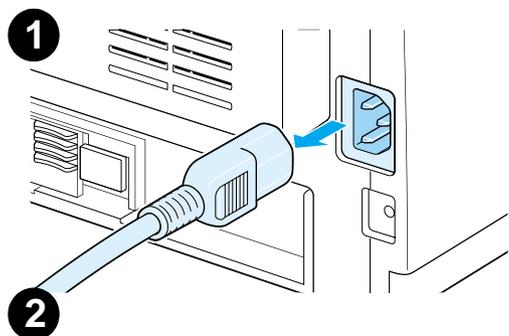
1. Turn the printer off, and disconnect the power cord.

2. Open the interface cable door by pressing on the release tabs and swinging the door outward. Disconnect all interface cables.

3. Locate the EIO slot. Firmly insert the HP Jetdirect EIO card into the EIO slot. Twist in the retaining screws.

4. Attach the appropriate network cable to the EIO card.

5. Reconnect the interface cable(s) and the power cord. Reinstall the interface cable door. Turn the printer on.

Note

Print a configuration page to check that the HP Jetdirect EIO card appears as an installed option. See "Configuration page" on page 72. If this page does not print in your language, see "Printing special pages" on page 87.

When you print a configuration page, an HP Jetdirect Configuration page that contains network configuration and status information will also print.

D Printer commands

Most software programs do not require you to enter printer commands. See your computer and software documentation to find the method for entering printer commands, if needed.

PCL 5e   PCL 5e printer commands tell the printer which tasks to perform or which fonts to use. This section provides a quick reference for users who are already familiar with PCL 5e command structure.

HP-GL/2   The printer has the ability to print vector graphics using the HP-GL/2 graphics language. Printing in the HP-GL/2 language requires that the printer leave PCL 5e language and enter HP-GL/2 mode, which can be done by sending the printer PCL 5e code. Some programs switch languages through their drivers.

PJL   HP's Printer Job Language (PJL) provides control above PCL 5e and other printer languages. The four major functions provided by PJL are: printer language switching, job separation, printer configuration, and status readback from the printer. PJL commands can be used to change printer default settings.

Note   See "Common PCL 5e printer commands" on page 172 for a list of commonly used PCL 5e commands. For a complete listing and explanation of how to use PCL 5e, HP-GL/2, and PJL commands, see the *HP PCL/PJL Reference Set,* available on CD-ROM (HP part number 5961-0975).

Understanding PCL printer command syntax

Before using printer commands, compare these characters:

Lowercase l:	ℓ	Uppercase O:	O
Number one:	1	Number 0:	Ø

Many printer commands use the lowercase letter l (ℓ) and the number one (1), or the uppercase letter O (O) and the number zero (Ø). These characters might not appear on your screen as shown here. You must use the exact character and case specified for PCL printer commands.

The following illustration displays the elements of a typical printer command (in this instance, a command for page orientation).

Escape character (begins escape sequence)

Value field (contains both alpha and numeric characters)

$$E_C \quad \& \quad \ell \quad \# \quad O$$

Category of command

Uppercase letter (terminates escape sequence)
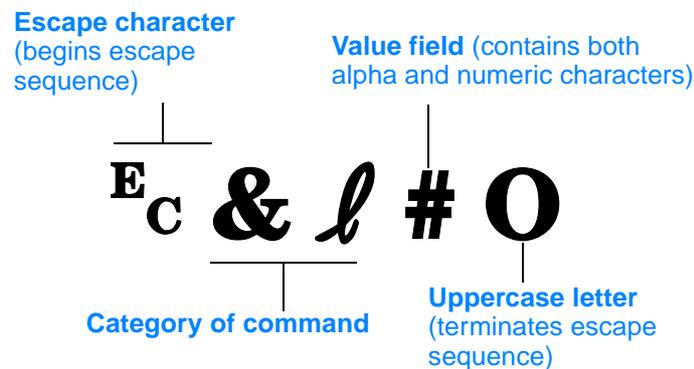
Combining escape sequences

Escape sequences can be combined into one escape sequence string. There are three important rules to follow when combining code:

1 For each escape sequence, the first two characters after the E_C character must be the same.

2 When combining escape sequences, change the uppercase (termination) character in each individual escape sequence to lowercase.

3 The final character of the combined escape sequence must be uppercase.

The following escape sequence string would be sent to the printer to select legal paper, landscape orientation, and 8 lines per inch:

E_C&ℓ3AE_C&ℓ1OE_C&ℓ8D

The following escape sequence sends the same printer commands by combining them into a shorter sequence:

E_C&ℓ3a1o8D

Entering escape characters

Printer commands always begin with the escape character (?).

The following table shows how the escape character can be entered from various MS-DOS software programs.

MS-DOS software programs	Entry	What appears
Lotus 1-2-3	Type \Ø27	Ø27
WordPerfect for MS-DOS	Type <27>	<27>
MS-DOS Edit	Hold down Ctrl-P, and press Esc	¨
MS-DOS Edlin	Hold down Ctrl-V, release, then press [	^[

Selecting PCL 5e fonts

The printer font list provides PCL 5e printer commands for selecting fonts. (See for information about how to print the list.) A sample section is shown below.

There is one variable box for entering symbol sets and one for entering point size. These variables must be filled in, or the printer will use defaults. For example, if you want a symbol set that contains line-draw characters, select the 10U (PC-8) or 12U (PC-850) symbol set. Other common symbol set codes are listed in the table beginning on the next page.

Font list

1 Symbol set
2 Point size

Common PCL 5e printer commands

Function	Command	Options (#)
Job control commands		
Reset	^E_CE	n/a
Number of Copies	^E_C&ℓ #X	1 to 999
Page control commands		
Paper Source	^E_C&ℓ #H	0 = prints or ejects current page 1 = tray 2 2 = manual feed, paper 3 = manual feed, envelope 4 = tray 1 5 = tray 3 7 = auto select
Paper Size	^E_C&ℓ #A	1 = Executive 2 = Letter 3 = Legal 4 = A5 5 = A4 6 = B5-JIS 8 = 8.5 X 13 9 = B5 (ISO) 71 = Postcard (single size) 72 = Postcard (round trip) 80 = Monarch 81 = Commercial 10 90 = DL 91 = International C5 100 = B5 101 = Custom
Orientation	^E_C&ℓ #O	0 = Portrait 1 = Landscape 2 = Reverse Portrait 3 = Reverse Landscape
Top Margin	^E_C&ℓ #E	# = number of lines
Text Length (bottom margin)	^E_C&ℓ #F	# = number of lines from top margin
Left Margin	^E_C&a #L	# = column number
Right Margin	^E_C&a #M	# = column number from left margin
Horizontal Motion Index	^E_C&k#H	1/120-inch increments (compresses print horizontally)
Vertical Motion Index	^E_C&ℓ #C	1/48-inch increments (compresses print vertically)
Line Spacing	^E_C&ℓ #D	# = lines per inch (1, 2, 3, 4, 5, 6, 12, 16, 24, 48)
Perforation Skip	^E_C&ℓ #L	0 = disable 1 = enable
Cursor positioning		
Vertical Position (Rows)	^E_C&a#R	# = row number
Vertical Position (Dots)	^E_C*p#Y	# = dot number (300 dots = 1 inch)
Vertical Position (Decipoints)	^E_C&a#V	# = decipoint number (720 decipoints = 1 inch)

Function	Command	Options (#)
Horizontal Position (Columns)	EC&a#C	# = column number
Horizontal Position (Dots)	EC*p#X	# = dot number (300 dots = 1 inch)
Horizontal Position (Decipoints)	EC&a#H	# = decipoint number (720 decipoints = 1 inch)

Programming hints

End of Line Wrap	EC&s#C	0 = Enable 1 = Disable
Display Functions On	ECY	n/a
Display Functions Off	ECZ	n/a

Language selection

Enter PCL Mode	EC%#A	0 = Use previous PCL cursor position 1 = Use current HP-GL/2 pen position
Enter HP-GL/2 Mode	EC%#B	0 = Use previous HP-GL/2 pen position 1 = Use current PCL cursor position

Font selection

Symbol Sets	EC(#	8U = HP Roman-8 Symbol Set 10U = IBM Layout (PC-8) (code page 437) Default Symbol Set 12U = IBM Layout for Europe (PC-850) (code page 850) 8M = Math-8 19U = Windows 3.1 Latin 1 9E = Windows 3.1 Latin 2 (commonly used in Eastern Europe) 5T = Windows 3.1 Latin 5 (commonly used in Turkey) 579L = Wingdings Font
Primary Spacing	EC(s#P	0 = fixed 1 = proportional
Primary Pitch	EC(s#H	# = characters/inch
Set Pitch Mode[1]	EC&k#S	0 = 10 4 = 12 (elite) 2 = 16.5 - 16.7 (compressed)
Primary Height	EC(s#V	# = points
Primary Style	EC(s#S	0 = upright (solid) 1 = italic 4 = condensed 5 = condensed italic
Primary Stroke Wt.	EC(s#B	0 = medium (book or text) 1 = semi bold 3 = bold 4 = extra bold
Typeface	EC(s#T	Print a PCL font list to view the command for each internal font.

1. The preferred method is to use the primary pitch command.

E Regulatory information

FCC regulations

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 this equipment 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 the equipment and receiver.

● Connect equipment to an outlet on a circuit different from that to which the receiver is connected.

● Consult your dealer or an experienced radio/TV technician.

Any changes or modifications to the printer that are not expressly approved by HP could void the authority of the user 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.

Environmental product stewardship program

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 impacts on our environment.

Ozone production

This product generates no appreciable ozone gas (O_3).

Power consumption

Power usage drops significantly while in PowerSave mode, which saves natural resources and 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 owned by the U.S. government. 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.

Media use

This product's duplex feature (two-sided printing) and n-up printing (multiple pages printed on one page) capabilities can reduce media usage and the resulting demands on natural resources. (The duplex feature is available only for printers that include a built-in duplexer— HP LaserJet 2300d printer, HP LaserJet 2300dn printer, and HP LaserJet 2300dtn printer.)

Plastics

Plastic parts over 25 grams 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 (for example, print cartridge and fuser) can be returned to HP through the HP Printing Supplies Environmental Program. An easy-to-use and free take back program is available in more than 48 countries/regions. Multilingual program information and instructions are included in every new HP LaserJet print cartridge and supplies package.

HP Printing Supplies Returns and Recycling Program information

Since 1990, the HP Printing Supplies Returns and Recycling Program has collected more than 47 million used LaserJet print cartridges that otherwise might have been discarded in the world's landfills. The HP LaserJet print cartridges and supplies are collected and bulk shipped to our resource and recovery partners who disassemble the cartridge. After a thorough quality

inspection, selected parts are reclaimed for use in new cartridges. Remaining materials are separated and converted into raw materials for use by other industries to make a variety of useful products.

- **U.S. returns**
  For a more environmentally responsible return of used cartridges and supplies, HP encourages the use of bulk returns. Simply bundle two or more cartridges together and use the single, prepaid, preaddressed UPS label that is supplied in the package. For more information in the U.S., call (1) (800) 340-2445 or visit the HP product return and recycling website at http://www.hp.com/go/recycle.

- **Non-U.S. returns**
  Non-U.S. customers should call the local HP Sales and Service Office or visit the http://www.hp.com/go/recycle website for further information regarding availability of the HP Supplies Returns and Recycling Program.

Paper

This product is capable of using recycled papers when the paper meets the guidelines outlined in the *HP LaserJet Printer Family Print Media Guide*. See "Ordering parts, accessories, and supplies" on page 116 for ordering information. This product is suitable for the use of recycled media according to DIN 19309.

Material restrictions

This HP product does not contain added mercury.

This HP product contains lead (for example, solder that might require special handling at end-of-life.

This HP product does not contain batteries.

Material safety data sheet

Material safety data sheets (MSDS) can be obtained by contacting the HP LaserJet Supplies website at http://www.hp.com/go/msds.

For more information

Visit http://www.hp.com/go/environment to obtain information about the following environmental topics:

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

Declarations of conformity

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 2300L / 2300 / 2300d / 2300n / 2300dn / 2300dtn, including 250-sheet feeder and 500-sheet feeder accessory
Product Numbers:	Q2477A / Q2472A / Q2473A / Q2474A / Q2475A / Q2476A, including C4793B and C7065B
Regulatory Model Number:	BOISB-0206-00
Product Options:	All

conforms to the following Product Specifications:

Safety:	IEC 60950:1999 / EN 60950:2000
	IEC 60825-1:1993 + A1 / EN 60825-1:1994 + A11 (Class 1 Laser/LED Product)
	GB4943-1995
EMC:	CISPR 22:1993 + A1 + A2 / EN 55022:1994 + A1 + A2 Class B[1*]
	EN 61000-3-2:1995 / A14
	EN 61000-3-3:1995
	EN 55024:1998
	FCC Title 47 CFR, Part 15 Class B[2] / ICES-003, Issue 3 / GB9254-1998
	AS / NZS 3548:1995 + A1 + A2

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.

* The product includes LAN (Local Area Network) options. When the interface cable is attached to a LAN connector, the product meets the requirements of EN 55022 Class A, in which case the following applies: "Warning—This is a Class A product. In a domestic environment this product may cause radio interference, in which case the user may be required to take adequate measures."

Boise, Idaho USA
25 July, 2002

For regulatory topics only:

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 130, D-71034 Böblingen (FAX: +49-7031-14-3143)
USA Contact:	Product Regulations Manager, Hewlett-Packard Company, PO Box 15, Mail Stop 160, Boise, Idaho 83707-0015 (Phone: 208-396-6000)

Canadian DOC regulations

Complies with Canadian EMC Class B requirements.

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

Regulatory and safety 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 may result in exposure to hazardous radiation.

LED safety statement

The infrared port on the front panel of this printer is classified as a Class 1 LED (Light Emitting Diode) device according to International Standard IEC 60825-1 (EN 60825-1). This device is not considered harmful, but the following precautions are recommended.

● If the printer requires service, contact an authorized HP service center.

● Do not attempt to make any adjustments of the printer.

● Avoid direct eye exposure to the infrared LED beam.

● Be aware that the beam is invisible light and cannot be seen.

● Do not attempt to view the infrared LED beam with any type of optical device.

Japanese VCCI statement

この装置は，情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づく クラスＢ情報技術装置です。この装置は，家庭環境で使用することを目的としていますが，この装置がラジオやテレビジョン受信機に近接して使用されると，受信障害を引き起こすことがあります。
取り扱い説明書に従って正しい取り扱いをして下さい。

Korean EMI statement

사용자 안내문 (B 급 기기)

이 기기는 비업무용으로 전자파장해검정을 받은 기기로서, 주거지역에서는 물론 모든 지역에서 사용할 수 있습니다.

Laser statement for Finland

LASERTURVALLISUUS

LUOKAN 1 LASERLAITE

KLASS 1 LASER APPARAT

HP LaserJet 2300 -laserkirjoitin on käyttäjän kannalta turvallinen luokan 1 laserlaite. Normaalissa käytössä kirjoittimen suojakotelointi estää lasersäteen pääsyn laitteen ulkopuolelle.

Laitteen turvallisuusluokka on määritetty standardin EN 60825-1 (1993) mukaisesti.

VAROITUS!

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

VARNING!

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 2300 -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.

VARNING!

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

Tiedot laitteessa käytettävän laserdiodin säteilyominaisuuksista:

Aallonpituus 770-795 nm

Teho 5 mW

Luokan 3B laser

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