User Guide

HP Laser 408dn

www.hp.com/support/laser408

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Introduction

This chapter provides information you need to know before using the machine.

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Key benefits

Environmentally friendly

- To save paper, you can print multiple pages on one single sheet of paper.
- To save electricity, this machine automatically conserves electricity by substantially reducing power consumption when not in use.
- We recommend using recycled paper for saving energy.

Convenience

- If you have Internet access, you can get help, support application, machine drivers, manuals, and order information from the HP website (www.hp.com/support/laser408).

Wide range of functionality and application support

- Supports various paper sizes (see "General specifications" on page 117).
- Print watermark: You can customize your documents with words, such as “Confidential”.
- Print posters: The text and pictures of each page of your document are magnified and printed across the multiple sheets of paper and can then be taped together to form a poster.

Features by model

Some features and optional goods may not be available depending on model or country.

Operating System

Operating System	HP Laser 408dn
Windows	●
Linux	●

(●: supported)

Software

Software	HP Laser 408dn
PCL printer driver	●
PS printer driver[a]	●
HP Embedded Web Server	●

a.Download the printer driver from the HP website and install it: **www.hp.com/support/laser408**. Before installing, check whether your computer's OS support the software.

(●: supported)

Variety feature

Features	HP Laser 408dn
Hi-Speed USB 2.0	●
Network Interface Ethernet 10/100/1000 Base TX wired LAN	●
Eco printing	●
Duplex (2-sided) printing	●
Memory module	○
Optional tray (Tray 3)	○

(●: supported, ○: optional)

Useful to know

The machine does not print.

- Open the print queue list and remove the document from the list (see "Canceling a print job" on page 50).
- Remove the driver and install it again (see "Installing the software" on page 22).
- Select your machine as your default machine in your Windows.

Where can I purchase accessories or supplies?

- Inquire at a HP distributor or your retailer.
- Visit the HP website (https://store.hp.com/). You can view product service information.

The status LED flashes or remains constantly on.

- Turn the product off and on again.
- Check the meanings of LED indications in this manual and troubleshoot accordingly (see "Understanding the LEDs" on page 98).

A paper jam has occurred.

- Check the instructions on removing jammed paper in this manual and troubleshoot accordingly (see "Clearing paper jams" on page 93).

Printouts are blurry.

- The toner level might be low or uneven. Shake the toner cartridge (see "Redistributing toner" on page 80).
- Try a different print resolution setting (see "Opening printing preferences" on page 51).
- Replace the toner cartridge (see "Replacing the toner cartridge" on page 81).

Where can I download the machine's driver?

- Visit www.hp.com/support/laser408 to download the latest machine's driver, and install it on your system.

About this user’s guide

This user's guide provides information for your basic understanding of the machine as well as detailed steps to explain machine usage.

- Do not discard this manual, and keep it for future reference.
- Read the safety information before using the machine.
- If you have a problem using the machine, refer to the troubleshooting chapter.
- Terms used in this user’s guide are explained in the glossary chapter.
- All illustrations in this user’s guide may differ from your machine depending on its options or model you purchased.
- The screenshots in this user’s guide may differ from your machine depending on the machine’s firmware/driver version.
- The procedures in this user’s guide are mainly based on Windows 7.

Conventions

Some terms in this guide are used interchangeably, as below:

- Document is synonymous with original.
- Paper is synonymous with media, or print media.
- Machine refers to printer or MFP.

General icons

Icon	Text	Description
	Warning	Used to alert users to the possibility of personal injury.
	Caution	Gives users information to protect the machine from possible mechanical damage or malfunction.
	Note	Provides additional information or detailed specification of the machine function and feature.

Safety information

These warnings and precautions are included to prevent injury to you and others, and to prevent any potential damage to your machine. Be sure to read and understand all of these instructions before using the machine. After reading this section, keep it in a safe place for future reference.

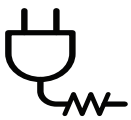
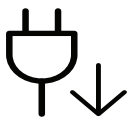
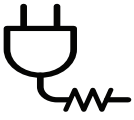
Important safety symbols

Explanation of all icons and signs used in this chapter

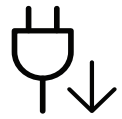
	Warning	Hazards or unsafe practices that may result in severe personal injury or death.
	Caution	Hazards or unsafe practices that may result in minor personal injury or property damage.

Operating environment

Warning

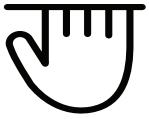
	Do not use if the power cord is damaged or if the electrical outlet is not grounded. This could result in electric shock or fire.
	Do not place anything on top of the machine (water, small metal or heavy objects, candles, lit cigarettes, etc.). This could result in electric shock or fire.
	• If the machine gets overheated, it releases smoke, makes strange noises, or generates an odd odor, immediately turn off the power switch and unplug the machine. • The user should be able to access the power outlet in case of emergencies that might require the user to pull the plug out. This could result in electric shock or fire.
	Do not bend, or place heavy objects on the power cord. Stepping on or allowing the power cord to be crushed by a heavy object could result in electric shock or fire.
	Do not remove the plug by pulling on the cord; do not handle the plug with wet hands. This could result in electric shock or fire.

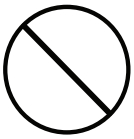
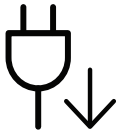
⚠ Caution

	During an electrical storm or for a period of non-operation, remove the power plug from the electrical outlet. This could result in electric shock or fire.
	Be careful, the paper output area is hot. Burns could occur.
	If the machine has been dropped, or if the cabinet appears damaged, unplug the machine from all interface connections and request assistance from qualified service personnel. Otherwise, this could result in electric shock or fire.
	If the machine does not operate properly after these instructions have been followed, unplug the machine from all interface connections and request assistance from qualified service personnel. Otherwise, this could result in electric shock or fire.
	If the plug does not easily enter the electrical outlet, do not attempt to force it in. Call an electrician to change the electrical outlet, or this could result in electric shock.
	Do not allow pets to chew on the AC power, telephone or PC interface cords. This could result in electric shock or fire and/or injury to your pet.

Operating method

⚠ Caution

	Do not forcefully pull the paper out during printing. It can cause damage to the machine.
	Be careful not to put your hand between the machine and paper tray. You may get injured.
	Be care when replacing paper or removing jammed paper. New paper has sharp edges and can cause painful cuts.

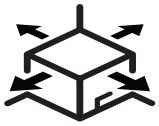
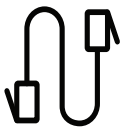
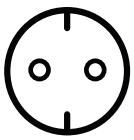
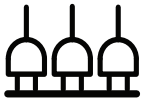
	When printing large quantities, the bottom part of the paper output area may get hot. Do not allow children to touch. Burns can occur.
	When removing jammed paper, do not use tweezers or sharp metal objects. It can damage the machine.
	Do not allow too many papers to stack up in the paper output tray. It can damage the machine.
	Do not block or push objects into the ventilation opening. This could result in elevated component temperatures which can cause damage or fire.
	Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
	This machine's power reception device is the power cord. To switch off the power supply, remove the power cord from the electrical outlet.

Installation / Moving

Warning

	Do not place the machine in an area with dust, humidity, or water leaks. This could result in electric shock or fire.
	Place the machine in the environment where it meets the operating temperature and humidity specification. Do not use the machine when it is below freezing temperature or has recently been moved from a location below freezing temperature. Doing so may damage the machine. Only operate the machine when the internal temperature of the machine is within the operating temperature and humidity specifications. Otherwise, quality problems can occur and cause damage to the machine (see "General specifications" on page 117).

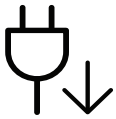
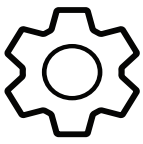
Caution

	Before moving the machine, turn the power off and disconnect all cords. The information below are only suggestions based on the units weight. If you have a medical condition that prevents you from lifting, do not lift the machine. Ask for help, and always use the appropriate amount of people to lift the device safety. Then lift the machine: • If the machine weighs under 20 kg (44.09 lbs), lift with 1 person. • If the machine weighs 20 kg (44.09 lbs) - 40kg (88.18 lbs), lift with 2 people. • If the machine weighs more than 40 kg (88.18 lbs), lift with 4 or more people. The machine could fall, causing injury or machine damage.
	Choose a flat surface with enough space for ventilation to place the machine. Also consider the space required to open the cover and trays. The place should be well-ventilated and be far from direct light, heat, and humidity.
	When using the machine for a long period of time or printing a large number of pages in a non-ventilated space, it could pollute the air and be harmful to your health. Place the machine in a well-ventilated space or open a window to circulate the air periodically.
	Do not place the machine on an unstable surface. The machine could fall, causing injury or machine damage.
	Use only No.26 AWG[a] or larger, telephone line cord, if necessary. Otherwise, it can cause damage to the machine.
	Make sure you plug the power cord into a grounded electrical outlet. Otherwise, this could result in electric shock or fire.
	Use the power cord supplied with your machine for safe operation. If you are using a cord which is longer than 2 meters (6 feet) with a 110V machine, then the gauge should be 16 AWG or larger. Otherwise, it can cause damage to the machine, and could result in electric shock or fire.
	Do not put a cover over the machine or place it in an airtight location, such as a closet. If the machine is not well-ventilated, this could result in fire.
	Do not overload wall outlets and extension cords. This can diminish performance, and could result in electric shock or fire.
	The machine should be connected to the power level which is specified on the label. If you are unsure and want to check the power level you are using, contact the electrical utility company.

a.AWG: American Wire Gauge

Maintenance / Checking

⚠ Caution

	Unplug this product from the wall outlet before cleaning the inside of the machine. Do not clean the machine with benzene, paint thinner or alcohol; do not spray water directly into the machine. This could result in electric shock or fire.
	When you are working inside the machine replacing supplies or cleaning the inside, do not operate the machine. You could get injured.
	Keep cleaning supplies away from children. Children could get hurt.
	Do not disassemble, repair or rebuild the machine by yourself. It can damage the machine. Call a certified technician when the machine needs repairing.
	To clean and operate the machine, strictly follow the user's guide provided with the machine. Otherwise, you could damage the machine.
	Keep the power cable and the contact surface of the plug clean from dust or water. Otherwise, this could result in electric shock or fire.
	• Do not remove any covers or guards that are fastened with screws. • Fuser units should only be repaired by a certified service technician. Repair by non-certified technicians could result in fire or electric shock. • The machine should only be repaired by a HP service technician.

Supply usage

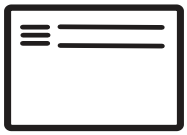
⚠ Caution

	Do not disassemble the toner cartridge. Toner dust can be dangerous if inhaled or ingested.
	Do not burn any of the supplies such as toner cartridge or fuser unit. This could cause an explosion or uncontrollable fire.
	When storing supplies such as toner cartridges, keep them away from children. Toner dust can be dangerous if inhaled or ingested.
	Using recycled supplies, such as toner, can cause damage to the machine. In case of damage due to the use of recycled supplies, a service fee will be charged.
	For supplies that contain toner dust (toner cartridge, waste toner bottle, imaging unit, etc.) follow the instructions below. • When disposing of the supplies, follow the instructions for disposal. Refer to the reseller for disposal instructions. • Do not wash the supplies. • For a waste toner bottle, do not reuse it after emptying the bottle. If you do not follow the instructions above, it may cause machine malfunction and environmental pollution. The warranty does not cover damages caused by a user's carelessness.
	When toner gets on your clothing, do not use hot water to wash it. Hot water sets toner into fabric. Use cold water.
	When changing the toner cartridge or removing jammed paper, be careful not to let toner dust touch your body or clothes. Toner dust can be dangerous if inhaled or ingested.

Machine overview

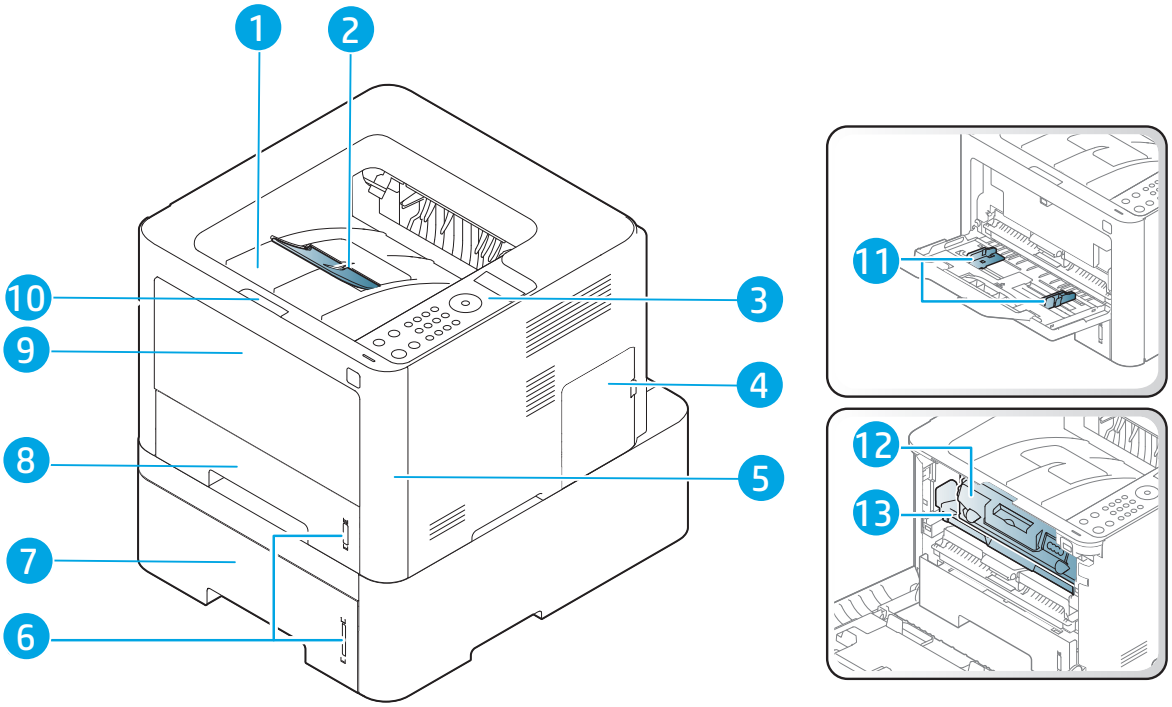
Components

The actual component may differ from the illustration below. Some components may change depending on the circumstances.

	Machine
	Setup guide and Reference guide
	Power cord
	Misc. accessories[a]

a.Miscellaneous accessories included with your machine may vary by country of purchase and specific model.

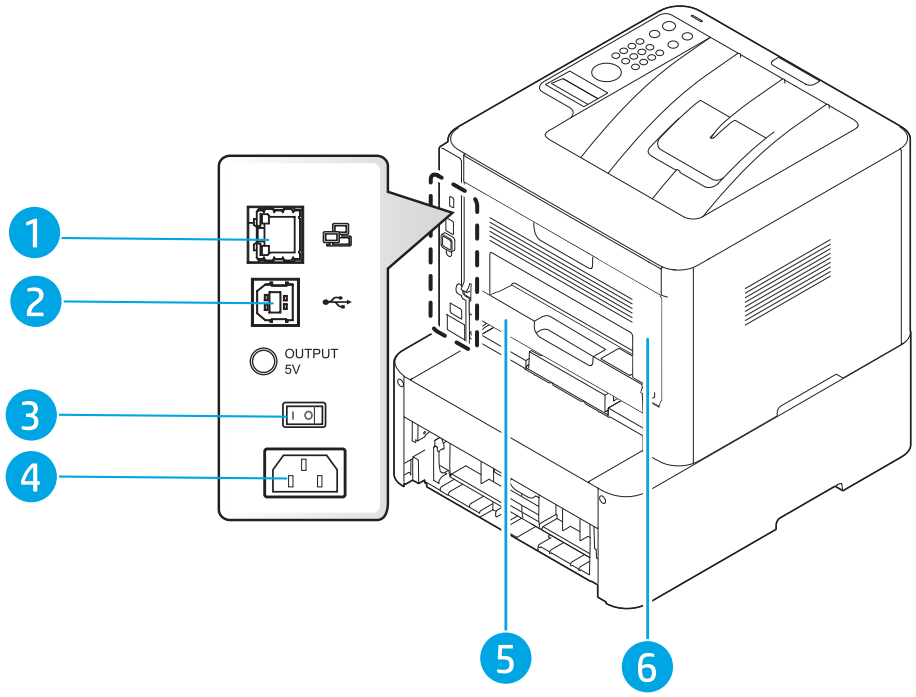
Front view



1	Output tray
2	Output support
3	Control panel
4	Control board cover
5	Front cover
6	Paper level indicator
7	Tray 3[a]
8	Tray 2
9	Tray 1
10	Push-release of front cover button
11	Paper width guides on the Tray 1
12	Toner cartridge
13	Imaging unit

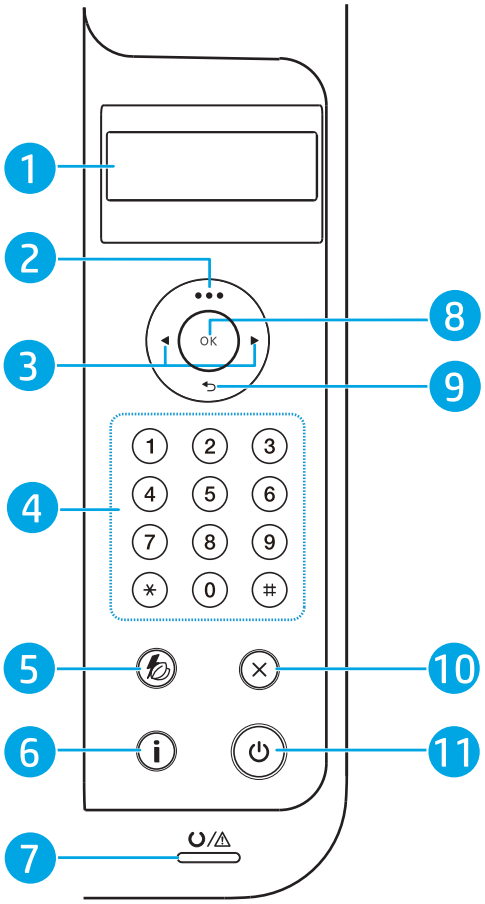
a.optional device.

Rear view



1	Network port
2	USB port
3	Power-switch
4	Power receptacle
5	Duplex unit
6	Rear cover

Control panel overview

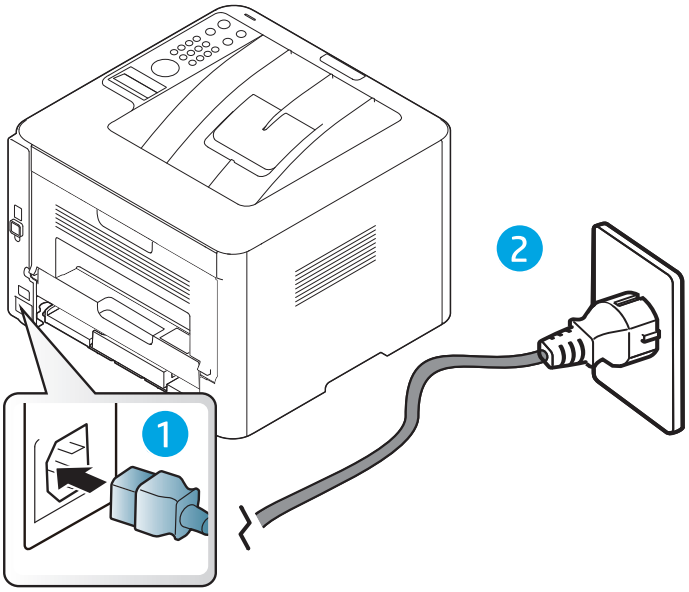


1	Display screen		Shows the current status and prompts during an operation.
2	Menu	•••	Opens Menu mode and scrolls through the available menus (see "Menu overview" on page 24).
3	Left/Right Arrows	◀ ▶	Scrolls through the options available in the selected menu and increases or decreases values.
4	Numeric keypad		Dials a number or enters alphanumeric characters.
5	Power Saver		Goes into sleep mode.
6	Information		Gives detailed information about machine's information. Prints a configuration page by pressing this button.
7	Status LED		Indicates the status of your machine (see "Understanding the LEDs" on page 98).
8	OK		Confirms the selection on the screen.
9	Back		Sends you back to the upper menu level.

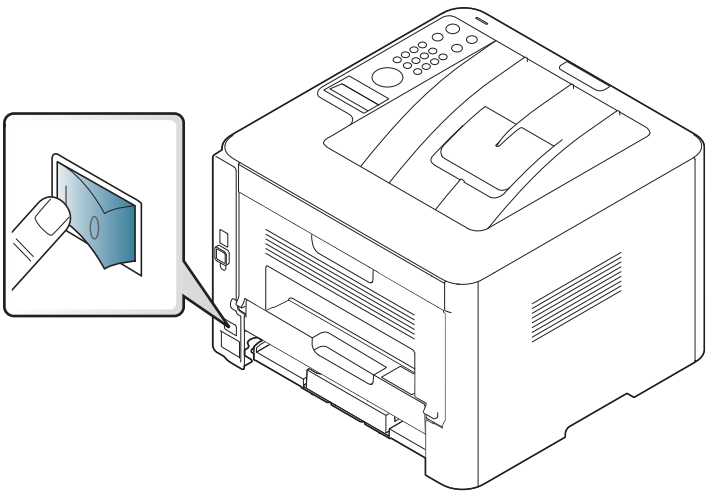
10	Cancel		Stops an operation at any time.
11	Power		Turns the power on or off, or wakes up the machine from the power save mode. If you need to turn the machine off, press this button for more than three seconds.

Turning on the machine

1 Connect the machine to the electricity supply first.



2 Turn the switch on.



3 Power is turned on automatically.

Or, press (**Power**) button on the control panel.

If you want to turn the power off, press and hold (**Power**) button for about 3 seconds.

Installing the software

After you have set up your machine and connected it to your computer, you must install the printer software. The PCL 6 printer-specific print driver is available for download from the printer support website. Download the driver, and then use the Microsoft **Add Printer** tool to install it.

Before installing, check whether your computer's OS support the software (see "Operating System" on page 7).

For HP's all-inclusive help for the printer, go to www.hp.com/support/laser408.

Find the following support:

- Install and configure
- Learn and use
- Solve problems
- Download software and firmware updates
- Join support forums
- Find warranty and regulatory information

- A locally connected machine is a machine directly attached to your computer using the cable. If your machine is attached to a network, skip the following steps below and go on to installing a network connected machine's driver (see "Installing driver over the network" on page 44).
- When using HP UPD, only a network connection is supported. Due to constraint of USB bi-directional communication, USB connection is not supported.

Only use a USB cable no longer then 3 meters (118 inches).

Menu Overview and Basic Setup

This chapter provides information about the overall menu structure and the basic setup options.

- Menu overview 24
- Machine’s basic settings 26
- Media and tray 28

Menu overview

The control panel provides access to various menus to set up the machine or use the machine's functions.

- Some menus may not appear on the display depending on options or models. If so, it is not applicable to your machine.
- Some menu names may differ from your machine depending on its options or the models.

Accessing the menu

1 Press ••• (**Menu**) button on the control panel.

2 Press the arrows until the needed menu item appears and press **OK**.

3 If the setting item has sub menus, repeat step 2.

4 Press **OK** to save the selection.

5 Press ⊗ (**Cancel**) button to return to ready mode.

Information (see "Information" on page 64)	Layout (see "Layout" on page 65)	Paper (see "Paper" on page 66)	Graphic (see "Graphic" on page 67)
Menu Map	Orientation	Copies	Resolution
Configuration	Portrait	Tray <x>	Standard
Demo Page	Landscape	Paper Size	High Resol.
Supplies Info.	Margin	Paper Type	Clear Text
Usage Counter	Common Margin	Paper Source	Off
PCL Font	Tray 1	Tray 1	Minimum
EPSON Font	<Tray X>	Tray 2	Normal
Error Info.	Emulation Mar.	Tray 3[a]	Maximum
	Duplex	Auto	Auto CR
	Off		
	Long Edge		
	Short Edge		

a.This option only appears when an optional tray (Tray 3) is installed.

System Setup (see "System Setup" on page 68)		Emulation (see "Emulation" on page 70)
Language	SkipBlankPages	Emulation Type
Default Paper	Maintenance	Setup
Power Save	CLR Empty Msg.[a]	
Wakeup Event	Supplies Life	
Job Timeout	Image Mgr.	
Altitude Adj.	TonerLow Alert	
Normal	ImgU.Low Alert	
High 1	RAM Disk	
High 2	Toner Save	
High 3	Auto Power Off	
High 4		
Auto Continue		
Auto Tray Swi.		
Paper Substit.		
Tray Protect.		

a.This option only appears when small amount of toner is left in the cartridge.

Network (see "Network" on page 71)	Job Management[a] (see "Job Management" on page 72)	PrinterOn[b] (see "PrinterOn" on page 73)
TCP/IP (IPv4)	Active Job	
DHCP	Secured Job	
BOOTP	Stored Job	
Static	Print	
TCP/IP (IPv6)	Delete	
IPv6 Protocol	Filing Policy	
DHCPv6 Config	Change Name	
Ethernet	Overwrite	
Ethernet Port		
Ethernet Speed		
802.1x		
Protocol Mgr.		
Network Conf.		
Clear Setting		

a.This option is available when the optional memory installed or RAM Disk is checked.
b.This is used only available when PrinterOn is enabled. The sub menus that appear in this menu may differ based on whether or not the machine is connected to the PrinterOn server.

Machine’s basic settings

You change the machine’s setting set in the machine from HP Embedded Web Server. If your machine is connected to the network, you can set the machine’s setting from **HP Embedded Web Server** > **Settings** tab > **Machine Settings** (see "Using HP Embedded Web Server" on page 45).

Machine’s default settings

After installation is complete, you may want to set the machine's default settings.

To change the machine’s default settings, follow these steps:

It may be necessary to press **OK** to navigate to lower-level menus for some models.

1 Select •••(**Menu**) button on the control panel.

2 Press **System Setup** > **Machine Setup**.

3 Select the option you want, then press **OK**.

4 Select the sub option you want, then press **OK**.

5 Press **OK** to save the selection.

6 Press ⊗(**Cancel**) button to return to ready mode.

Altitude adjustment

Print quality is affected by atmospheric pressure, which is determined by the height of the machine above sea level. The following information will guide you on how to set your machine for the best print quality.

Before you set the altitude value, determine the altitude where you are.

- **Normal:** 0 ~ 1,000 m (3,280 ft)
- **High 1 :** 1,000 m (3,280 ft) ~ 2,000 m (6,561 ft)
- **High 2:** 2,000 m (6,561 ft) ~ 3,000 m (9,842 ft)
- **High 3:** 3,000 m (9,842 ft) ~ 4,000 m (13,123 ft)
- **High 4:** 4,000 m (13,123 ft) ~ 5,000 m (16,404 ft)

- If your machine is connected to the network, you can set the machine's setting from **HP Embedded Web Server** > **Settings** tab > **Machine Settings** (see "Using HP Embedded Web Server" on page 45).
- You can also set the altitude in **System Setup** option on the machine's display.

Media and tray

This chapter provides information on how to load print media into your machine.

Selecting print media

You can print on a variety of print media, such as plain paper, envelopes, labels, and transparencies. Always use print media that meets the guidelines for use with your machine.

Guidelines for select the print media

Print media that does not meet the guidelines outlined in this user's guide may cause the following problems:

- Poor print quality
- Increased paper jams
- Premature wear on the machine.

Properties, such as weight, composition, grain, and moisture content, are important factors that affect the machine's performance and the output quality. When you choose print materials, consider the following:

- The type, size, and weight of the print media for your machine are described in print media specifications (see "Print media specifications" on page 118).
- Desired outcome: The print media you choose should be appropriate for your project.
- Brightness: Some print media are whiter than others and produce sharper, more vibrant images.
- Surface smoothness: The smoothness of the print media affects how crisp the printing looks on the paper.

- Some print media may meet all of the guidelines in this user's guide and still not produce satisfactory results. This may be the result of the sheets characteristics, improper handling, unacceptable temperature and humidity levels, or other variables over which cannot be controlled.
- Before purchasing large quantities of print media, ensure that it meets the requirements specified in this user's guide.

- Using print media that does not meet these specifications may cause problems or require repairs. Such repairs are not covered by HP's warranty or service agreements.
- The amount of paper put into the tray may differ according to media type used (see "Print media specifications" on page 118).
- Make sure not to use the inkjet photo paper with this machine. It could cause damage to the machine.
- Using flammable print media can cause a fire.
- Use designated print media (see "Print media specifications" on page 118).

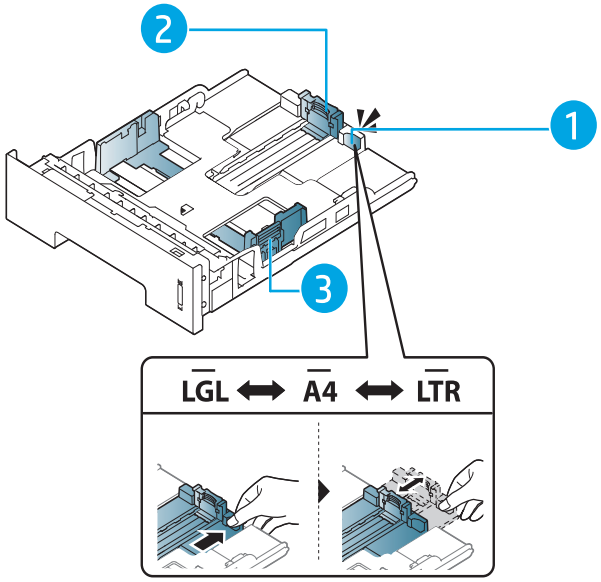
The use of flammable media or foreign materials left in the printer may lead to overheating of the unit and, in rare cases may cause a fire.

The amount of paper put into the tray may differ according to media type used (see "Print media specifications" on page 118).

Tray overview

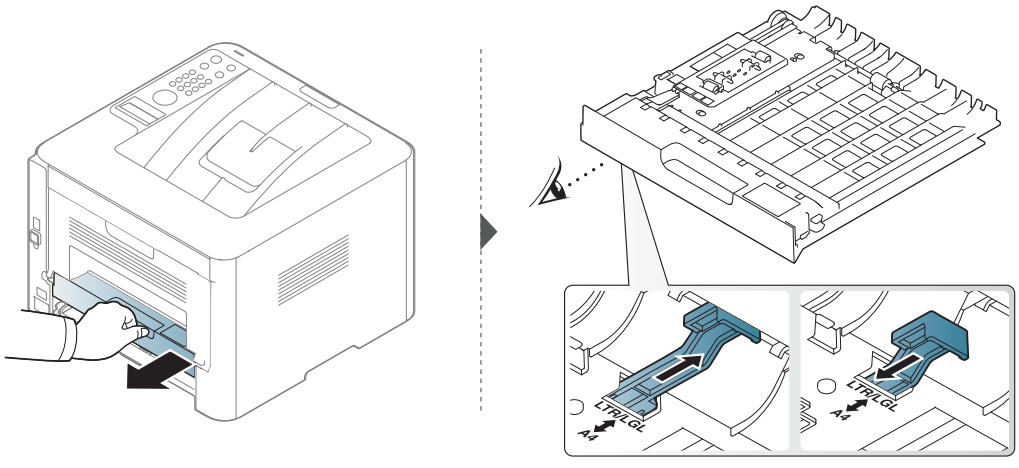
If you do not adjust the guide, it may cause paper registration, image skew, or jamming of the paper.

To change the size, you need to adjust the paper guides.

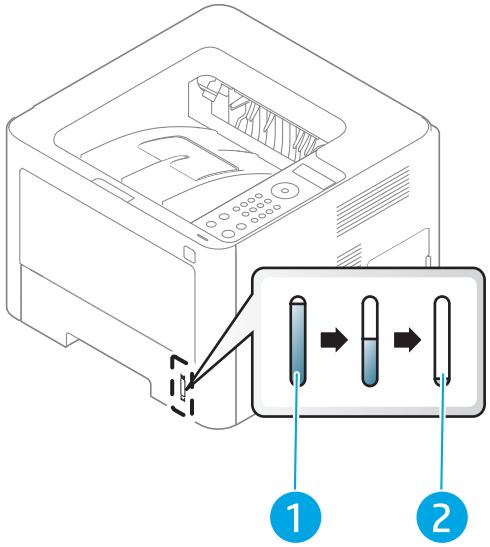


1. Tray extension guide
2. Paper length guide
3. Paper width guide

The duplex unit is preset to Letter/LGL or A4 size, depending on your country. To change the paper size, adjust the guides as shown below.



Paper quantity indicator shows the amount of paper in the tray.

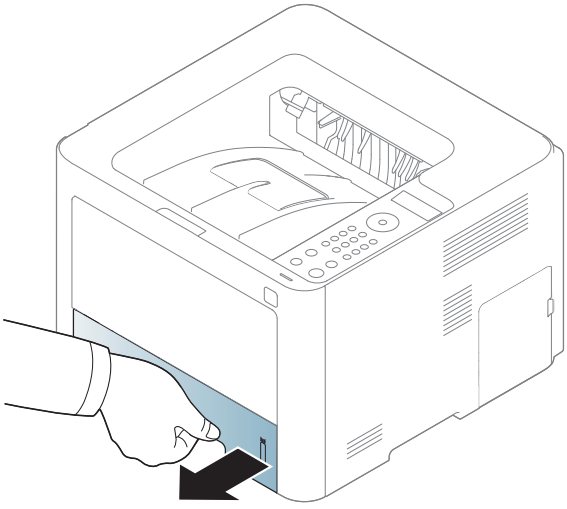


1. Full
2. Empty

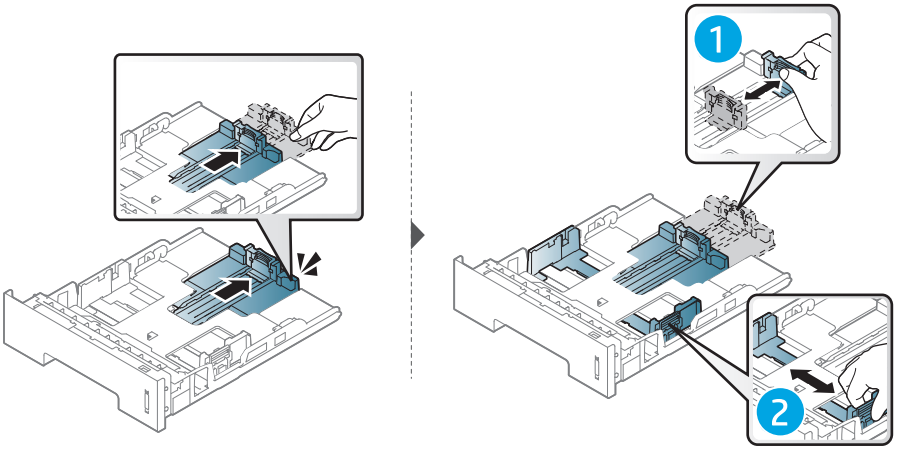
Loading paper in the tray

Tray 2 / Tray 3 (Optional tray)

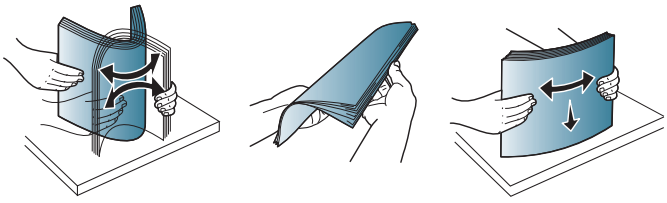
1 Pull out the paper tray.



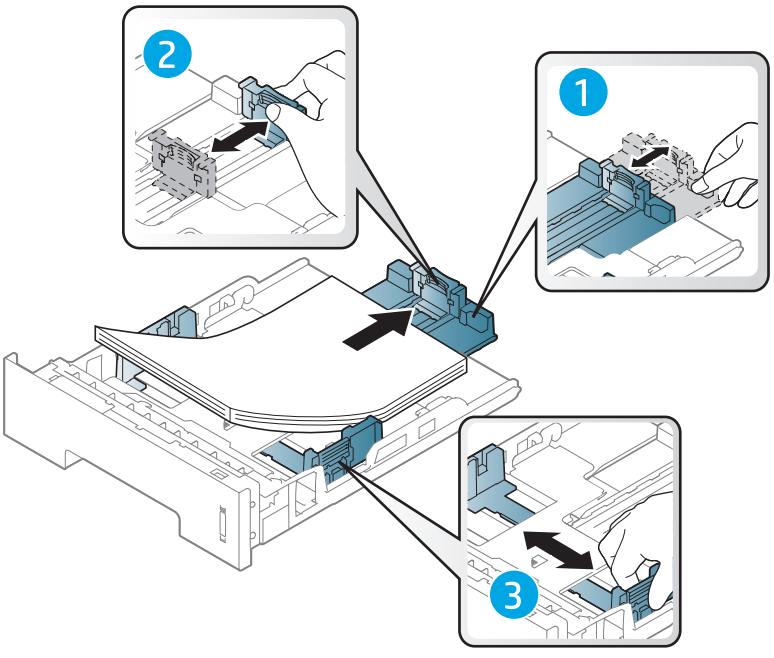
2 Squeeze and the paper width guide and paper length lever to locate them in the correct paper size slot marked at the bottom of the tray to adjust to the size (see "Tray overview" on page 29).



3 Flex or fan the edge of the paper stack to separate the pages before loading papers.

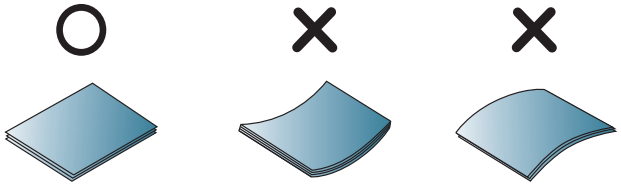


4 After inserting paper into the tray, squeeze the paper width guides and paper length guide.

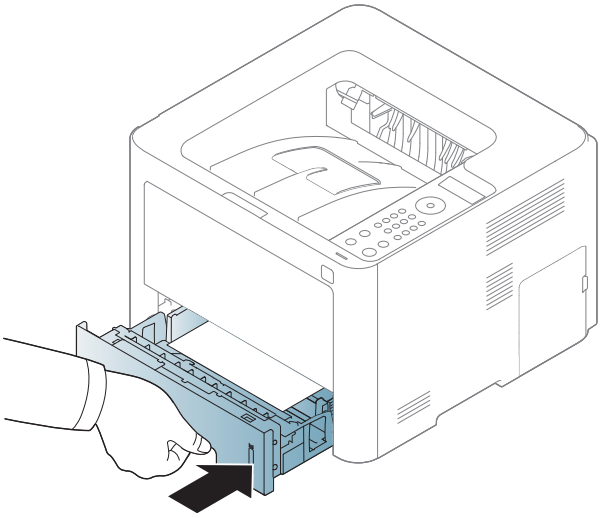


- If you do not adjust the guide, it may cause paper registration, image skew, or jamming of the paper.
- Do not push the paper width guide too far causing the media to warp.
- If you do not adjust the paper width guide, it may cause paper jams.

- Do not use a paper with a leading-edge curl, it may cause a paper jam or the paper can be wrinkled.



5 Insert the tray back into the machine.



6 When you print a document, set the paper type and size for the tray (see "Setting the paper size and type" on page 40).

Tray 1

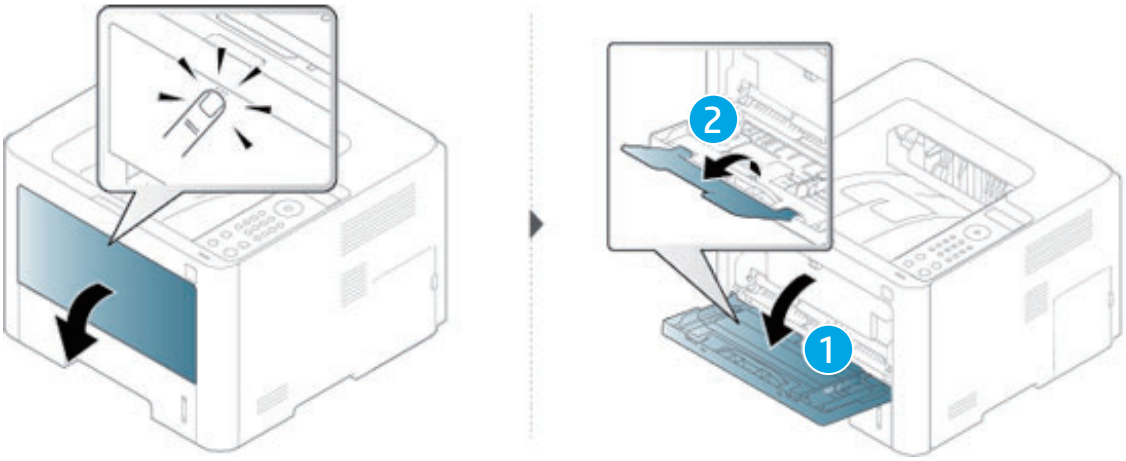
The Tray 1 can hold special sizes and types of print material, such as postcards, note cards, and envelopes (see "Print media specifications" on page 118).

Tips on using the Tray 1

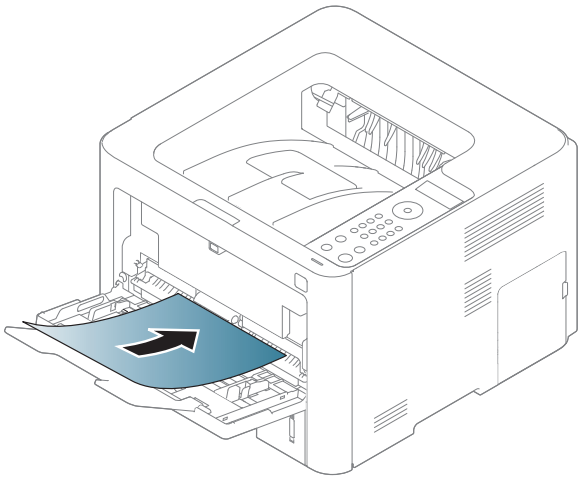
- Load only one type, size and weight of print media at a time in the Tray 1.
- To prevent paper jams, do not add paper while printing when there is still paper in the Tray 1. This also applies to other types of print media.

- Always load the specified print media only to avoid paper jams and print quality problems (see "Print media specifications" on page 118).
- Flatten any curl on postcards, envelopes, and labels before loading them into the Tray 1.

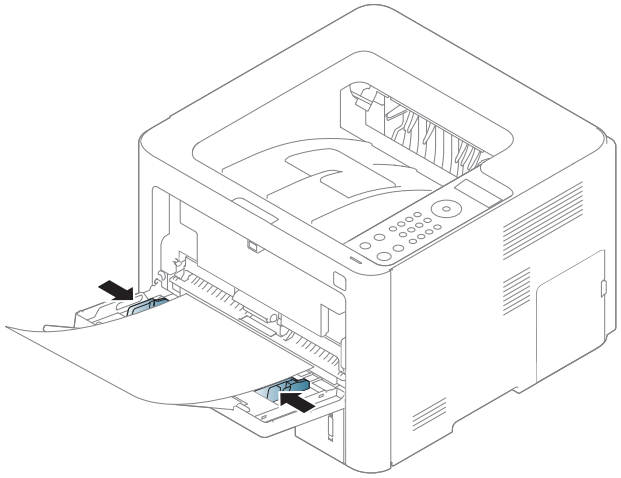
1 Press the push-release of Tray 1 to open.



2 Load the paper.



3 Squeeze the Tray 1 paper width guides and adjust them to the width of the paper. Do not force them too much, or the paper will bent resulting in a paper jam or skew.



- When printing the special media, you must follow the loading guideline (See "Printing on special media" on page 35).
- When papers overlap when printing using Tray 1, Tray 3 and remove overlapping papers then try printing again.

4 When you print a document, set the paper type and size for the Tray 1 (see "Setting the paper size and type" on page 40).

Printing on special media

The table below shows the special media usable in tray.

The paper setting in the machine and driver should match to print without a paper mismatch error.

To change the paper setting set in the machine, you can set it from the control panel.

Then, set the paper type from the **Printing preferences** window > **Paper** tab > **Paper Type** (see "Opening printing preferences" on page 51).

To see for paper weights for each sheet, refer to "Print media specifications" on page 118.

Types	Tray 1	Tray 2	Tray 3[a]
Plain	●	●	●
Mid-Weight 96-110 g	●	●	●
Cardstock 176-220 g	●		
Light 60-74 g	●	●	●
Bond	●	●	●
Colored	●		
Extra Heavy 121-163 g	●	●	●
Labels	●		
Envelope	●		
Preprinted	●	●	●
Letterhead	●	●	●
HP LaserJet 90 g	●		
Recycled	●	●	●
Intermediate 85-95 g	●	●	●

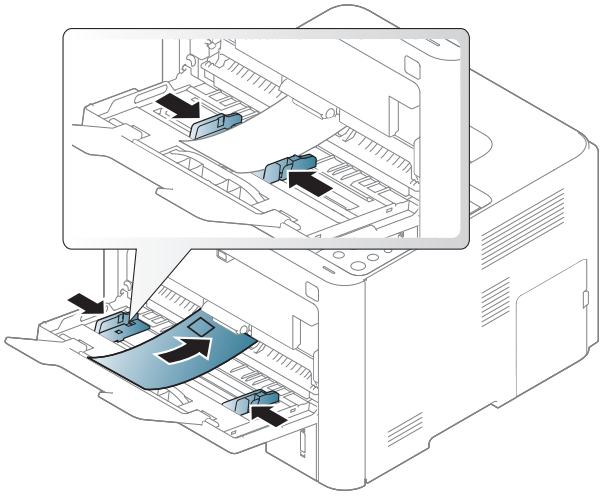
a.This is feature is available when you install and optional tray (Tray 3) (see "Variety feature" on page 7).

(●: Supported, Blank: Not supported)

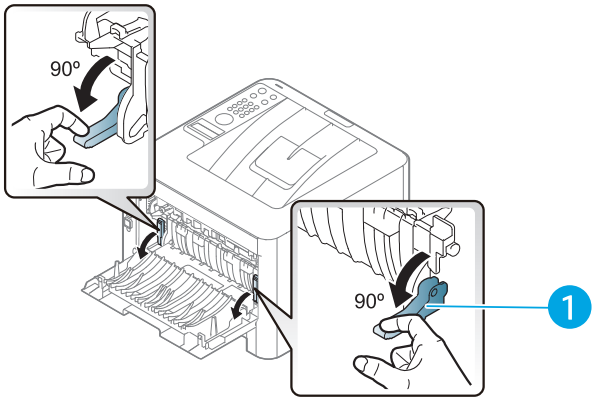
Envelope

Printing successfully on envelopes depends upon the quality of the envelopes.

To print an envelope, place it as shown in the following figure.

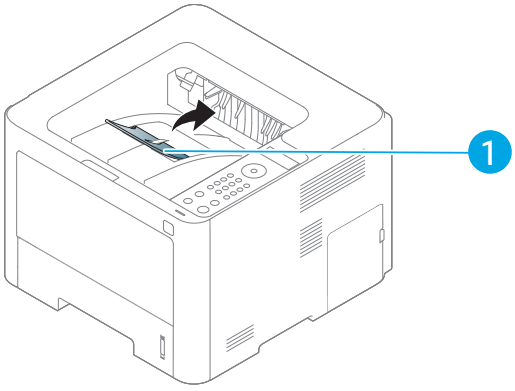


- If envelopes are printed out with wrinkles, creases, or black bold lines, open the rear cover and pull down the pressure lever on the right side about 90 degrees and try printing again. Keep the rear cover opened during printing.



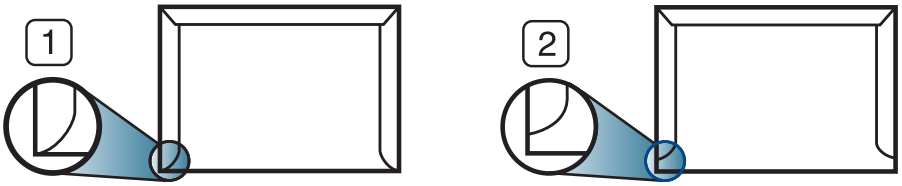
1. Pressure lever

- When you are printing on an envelope, close the output support. Otherwise, paper jam may occur.



1. Output support

- When selecting envelopes, consider the following factors:
  - **Weight:** should not exceed 90 g/m^2 otherwise; jams may occur.
  - **Construction:** should lie flat with less than 6 mm curl and should not contain air.
  - **Condition:** should not be wrinkled, nicked, nor damaged.
  - **Temperature:** should resist the heat and pressure of the machine during operation.
- Use only well-constructed envelopes with sharp and well-creased folds.
- Do not use stamped envelopes.
- Do not use envelopes with clasps, snaps, windows, coated lining, self-adhesive seals, or other synthetic materials.
- Do not use damaged or poorly made envelopes.
- Be sure the seam at both ends of the envelope extends all the way to the corner of the envelope.

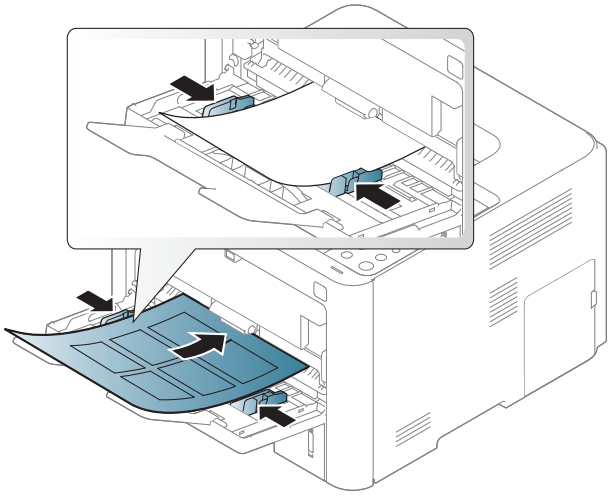


1. Acceptable
2. Unacceptable

- Envelopes with a peel-off adhesive strip or with more than one flap that folds over to seal must use adhesives compatible with the machine's fusing temperature for 0.1 second about 170°C (338 °F). The extra flaps and strips might cause wrinkling, creasing, or jams, and may even damage the fuser.
- For the best print quality, position margins no closer than 15 mm from the edges of the envelope.
- Avoid printing over the area where the envelope's seams meet.

Labels

To avoid damaging the machine, use only labels designed for use in laser printers.

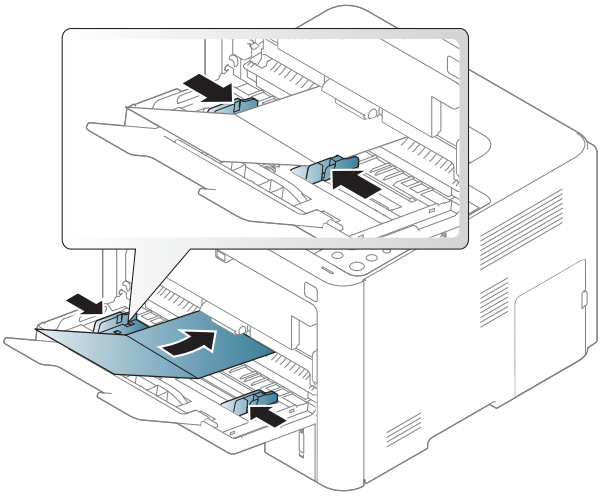


- When selecting labels, consider the following factors:
  - **Adhesives:** Should be stable at your machine's fusing temperature about 170°C (338°F).
  - **Arrangement:** Only use labels with no exposed backing between them. Labels can peel off sheets that have spaces between the labels, causing serious jams.

- **Curl:** Must lie flat with no more than 13 mm of curl in any direction.
- **Condition:** Do not use labels with wrinkles, bubbles, or other indications of separation.

- Make sure that there is no exposed adhesive material between labels. Exposed areas can cause labels to peel off during printing, which can cause paper jams. Exposed adhesive can also cause damage to machine components.
- Do not run a sheet of labels through the machine more than once. The adhesive backing is designed for only a single pass through the machine.
- Do not use labels that are separating from the backing sheet or are wrinkled, bubbled, or otherwise damaged.

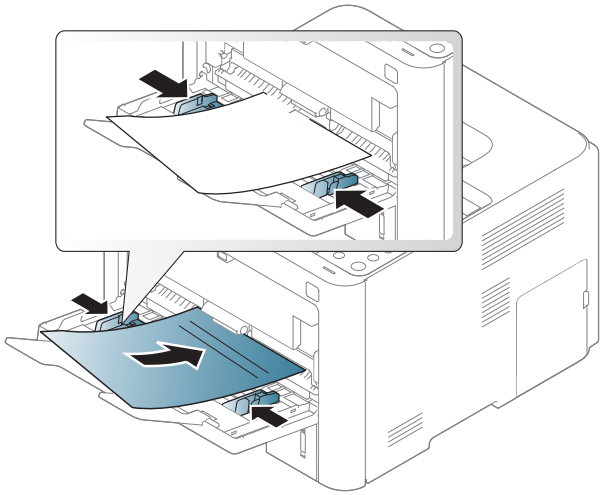
Card stock/ Custom-sized paper



- In the software application, set the margins to at least 6.4 mm (0.25 inches) away from the edges of the material.

Preprinted paper

When loading preprinted paper, the printed side should be facing up with an uncurled edge at the front. If you experience problems with paper feeding, turn the paper around. Note that print quality is not guaranteed.



- Must be printed with heat-resistant ink that will not melt, vaporize, or release hazardous emissions when subjected to the machine's fusing temperature for 0.1 second (about 170°C (338°F)).
- Preprinted paper ink must be non-flammable and should not adversely affect machine rollers.
- Before you load preprinted paper, verify that the ink on the paper is dry. During the fusing process, wet ink can come off preprinted paper, reducing print quality.

Setting the paper size and type

After loading paper in the paper tray, set the paper size and type using the control panel buttons.

The paper setting in the machine and driver should match to print without a paper mismatch error.

To change the paper setting set in the machine, you can set it from the control panel.

Then, set the paper type from the **Printing preferences** window > **Paper** tab > **Paper Type** (see "Opening printing preferences" on page 51).

It may be necessary to press **OK** to navigate to lower-level menus for some models.

1 Select ••• (**Menu**) > **Paper** > **you want the select the tray** > **Paper Size** or **Paper Type** on the control panel.

2 Select the option you want.

3 Press **OK** to save the selection.

4 Press ⊗ (**Cancel**) button to return to ready mode.

If you want to use special-sized paper such as billing paper, select the **Paper** tab > **Size** > **Edit...** and set **Custom Paper Size Settings** in the **Printing Preferences** (see "Opening printing preferences" on page 51).

Using a Network-Connected Machine

This chapter gives you step-by-step instructions for setting up a network connected machine and software.

- Wired network setup 42
- Installing driver over the network 44
- Using HP Embedded Web Server 45

Wired network setup

Printing a network configuration report

You can print **Network Configuration Report** from the machine's control panel that will show the current machine's network settings. This will help you to set up a network.

Press the ••• (**Menu**) button on the control panel and select **Network** > **Network Conf.**.

Using this **Network Configuration Report**, you can find your machine's MAC address and IP address.

For example:

- MAC Address: 00:15:99:41:A2:78
- IP Address: 169.254.192.192

Setting IP address

First, you have to set up an IP address for network printing and managements. In most cases a new IP address will be automatically assigned by a DHCP (Dynamic Host Configuration Protocol) server located on the network.

When you install the printer driver, do not configure both IPv4 and IPv6. We recommend to configure either IPv4 or IPv6 (see "Installing driver over the network" on page 44).

IPv4 configuration

You can also set the TCP/IPv4 from **Embedded Web Server**. When the **Embedded Web Server** window opens, move the mouse cursor over the **Settings** of the top menu bar and then click **Network Settings** ("Settings tab" on page 46).

IPv6 configuration

IPv6 is supported properly only in Windows Vista or higher.

The machine supports the following IPv6 addresses for network printing and managements.

- **Link-local Address**: Self-configured local IPv6 address (Address starts with FE80).
- **Stateless Address**: Automatically configured IPv6 address by a network router.
- **Stateful Address**: IPv6 address configured by a DHCPv6 server.
- **Manual Address**: Manually configured IPv6 address by a user.

In the IPv6 network environment, follow the next procedure to use the IPv6 address.

Activating IPv6

1 Access a web browser, such as Internet Explorer, from Windows. Enter the machine IP address (http://xxx.xxx.xxx.xxx) in the address field and press the Enter key or click **Go**.

2 If it's your first time logging into **HP Embedded Web Server** you need to log-in as an administrator. Type in default **ID** (**admin**). Default password is none. We recommend you to set the default password for security reasons. You can change your ID and password from **Security** › **System Security** › **System Administrator**.

3 When the **Embedded Web Server** window opens, move the mouse cursor over the **Settings** of the top menu bar and then click **Network Settings**.

4 Click **TCP/IPv6** on the left pane of the website.

5 Check the **IPv6 Protocol** check box to activate IPv6.

6 Click the **Apply** button.

7 Turn the machine off and turn it on again.

- You can also set the DHCPv6.
- To manually set the IPv6 address:
  Check the **Manual Address** check box. Then, the **Address/Prefix** text box is activated. Enter the rest of the address (e.g.,:3FFE:10:88:194::**AAAA**. "A" is the hexadecimal 0 through 9, A through F).

Installing driver over the network

- Before installing, check whether your computer's OS support the software (see "Operating System" on page 7).
- The machine that does not support the network interface, it will not be able to use this feature (see "Rear view" on page 18).
- You need to download software packages from the HP website to install the printer software. For HP's all-inclusive help for the printer, go to www.hp.com/support/laser408.

Windows

The firewall software might be blocking network communication. Before connecting the device to the network, disable the computer's firewall.

1 Make sure that the machine is connected to the network and powered on. Also, your machine's IP address should have been set (see "Setting IP address" on page 42).

2 Download printer driver software from the HP website (www.hp.com/support/laser408).

3 Turn on the machine.

4 Unzip the driver package and run the driver installer.

5 Follow the instructions in the installation window.

Using HP Embedded Web Server

There are several programs available to setup the network settings easily in a network environment. For the network administrator especially, managing several machines on the network is possible.

- Internet Explorer 8.0 or higher is the minimum requirement for HP Embedded Web Server.
- Before using the programs below, set the IP address first.
- Some features and optional goods may not be available depending on model or country (see "Variety feature" on page 7).

HP Embedded Web Server

The web server embedded on your network machine allows you to do the following tasks:

- Check the supplies information and status.
- Customize machine settings.
- Configure the network parameters necessary for the machine to connect to various network environments.

Accessing HP Embedded Web Server

1 Access a web browser, such as Internet Explorer, from Windows.

Enter the machine IP address of your printer (http://xxx.xxx.xxx.xxx) in the address field and press the Enter key or click **Go**.

2 Your machine's embedded website opens.

Logging into HP Embedded Web Server

Before configuring options in HP Embedded Web Server, you need to log-in as an administrator. You can still use HP Embedded Web Server without logging in but you won't have access to **Settings** tab and **Security** tab.

1 Click **Login** on the upper right of the HP Embedded Web Server website.

2 If it's your first time logging into **HP Embedded Web Server** you need to log-in as an administrator. Type in default **ID** (**admin**). Default password is none. We recommend you to set the default password for security reasons. You can change your ID and password from **Security** > **System Security** > **System Administrator**.

HP Embedded Web Server overview

Some tabs may not appear depending on your model.

Information tab

This tab gives you general information about your machine. You can check things, such as remaining amount of toner. You can also print reports, such as an error report.

- **Active Alerts:** Shows the alerts that have occurred in the machine and their severity.
- **Supplies:** Shows how many pages are printed and amount of toner left in the cartridge.
- **Usage Counters:** Shows the usage count by print types: simplex and duplex.
- **Current Settings:** Shows the machine's and network's information.
- **Print information:** Prints reports such as system related reports, e-mail address, and font reports.
- **Security Information:** Shows the machine's security information.

Settings tab

This tab allows you to set configurations provided by your machine and network. You need to log-in as an administrator to view this tab.

- **Machine Settings tab:** Sets options provided by your machine.
- **Network Settings tab:** Shows options for the network environment. Sets options such as TCP/IP and network protocols.

Security tab

This tab allows you to set system and network security information. You need to log-in as an administrator to view this tab.

- **System Security:** Sets the system administrator's information and also enables or disables machine features.
- **Network Security:** Sets settings for IPv4/IPv6 filtering.

Maintenance tab

This tab allows you to maintain your machine by upgrading firmware and setting contact information for sending emails. You can also connect to HP website or download drivers by selecting the **Link** menu.

- **Firmware Upgrade:** Upgrade your machine's firmware.
- **Contact Information:** Shows the contact information.
- **Wi-Fi Interface:** You can enable or disable the Wi-Fi menu.
- **Link:** Shows links to useful sites where you can download or check information.

Setting the system administrator's information

Some menus may not appear in the display depending on options or models. If so, it is not applicable to your machine.

1 Start a web browser, such as Internet Explorer, from Windows.

Enter the machine IP address (http://xxx.xxx.xxx.xxx) in the address field and press the Enter key or click **Go**.

2 Your machine's embedded website opens.

3 From the **Security** tab, select **System Security** > **System Administrator**

4 Enter the name of the administrator, phone number and location.

5 Click **Apply**.

Printing

This chapter provides information about the overall print options.

The PCL 6 printer-specific print driver is available for download from the printer support website. Download the driver, and then use the Microsoft **Add Printer** tool to install it. For HP's all-inclusive help for the printer, go to www.hp.com/support/laser408.

- Basic print 49
- Canceling a print job 50
- Opening printing preferences 51
- Using a favorite setting 52
- Using help 53
- Secure printing 54
- Printing features 55
- Using Printer Status programs 61

Basic print

Before printing, check whether your computer's OS support the software (see "Operating System" on page 7).

The following **Printing Preferences** window is for Notepad in Windows 7. Your **Printing Preferences** window may differ, depending on your operating system or the application you are using.

1 Open the document you want to print.

2 Select **Print** from the **File** menu.

3 Select your machine from the **Select Printer** list.

4 The basic print settings including the number of copies and print range are selected within the **Print** window.

To take advantage of the advanced printing features, click **Properties** or **Preferences** from the **Print** window (see "Opening printing preferences" on page 51).

5 To start the print job, click **OK** or **Print** in the **Print** window.

Canceling a print job

If the print job is waiting in the print queue or print spooler, cancel the job as follows:

- You can access this window by simply double-clicking the machine icon ( ) in the Windows task bar.
- You can also cancel the current job by pressing (**Cancel**) on the control panel.

Opening printing preferences

- The **Printing Preferences** window that appears in this user's guide may differ depending on the machine in use.
- When you select an option in **Printing Preferences**, you may see a warning mark or . An mark means you can select that certain option but it is not recommended, and an mark means you cannot select that option due to the machine's setting or environment.

1 Open the document you want to print.

2 Select **Print** from the file menu. The **Print** window appears.

3 Select your machine from the **Select Printer**.

4 Click **Properties** or **Preferences**. Click or tap the tabs in the print driver to configure the available options.

- In Windows 10, 8.1, and 8, these applications will have a different layout with different features from what is described below for desktop applications. To access the print feature from a **Start** screen app, complete the following steps:
  - **Windows 10:** Select **Print**, and then select the printer.
  - **Windows 8.1 or 8:** Select **Devices**, select **Print**, and then select the printer.
- You can check the machine's current status pressing the **Printer Status** button (see "Using Printer Status programs" on page 61).

Using a favorite setting

The **Favorites** option, which is visible on each preferences tab except for the **About** tab, allows you to save the current preferences for future use.

To save a **Favorites** item, follow these steps:

1 Change the settings as needed on each tab.

2 Select (**Add**) in the **Favorites** input box.

3 Enter name and description, and then select the desired icon.

4 Click **OK**. When you save **Favorites**, all current driver settings are saved.

To use a saved setting, select it in the **Favorites** tab. The machine is now set to print according to the settings you have selected. To delete saved settings, select it in the **Favorites** tab and click **Delete**.

Using help

Click the option you want to know on the **Printing Preferences** window and press **F1** on your keyboard.

Secure printing

- Some menus may not appear on the display depending on options or models. If so, it is not applicable to your machine.
- You might not be able to print a complex document using the RAM disk. Install an optional memory to print a complex document.

When you use a printing device in an office, school or other public place, you can protect your personal documents or confidential information by using the secure printing feature.

Starting secure printing from the HP Embedded Web Server

1. Access a web browser, such as Internet Explorer, from Windows.
   Enter the machine IP address of your printer (http://xxx.xxx.xxx.xxx) in the address field and press the Enter key or click **Go**.
2. Click Login on the upper right of HP Embedded Web Server website.
3. **Settings** > **Machine Settings** > **System** > **Ram Disk**.
4. Enable **Ram Disk**.

This features may not appear on the display depending on options or models. If so, it is not applicable to your machine.

Printing secure documents from the control panel

1. Select ••• (**Menu**) > **Job Management** > **Secured Job** on the printer's control panel.
2. Select the document to print.
3. Enter the password that you set from the printer driver.
4. Print the document.
5. Press ⊗ (**Cancel**) button to return to ready mode.

Printing features

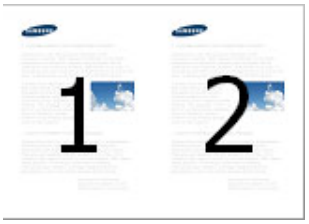
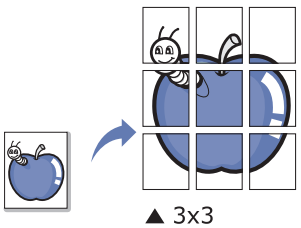
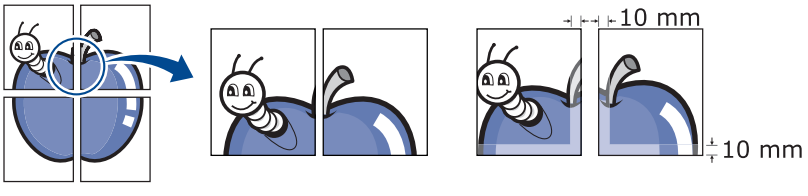
- This feature may not be available depending on model or optional device (see "Features by model" on page 7).
- You need to download software packages from the HP website to install the printer software. For HP's all-inclusive help for the printer, go to www.hp.com/support/laser408.

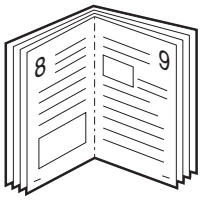
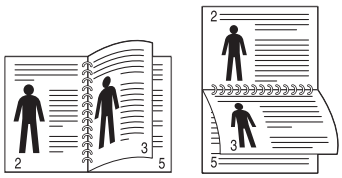
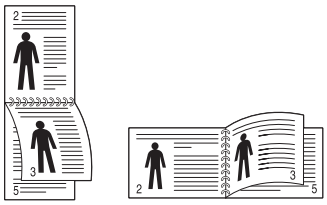
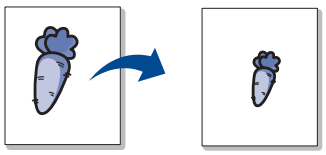
Understanding special printer features

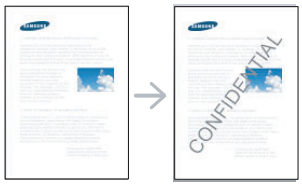
You can use advanced printing features when using your machine.

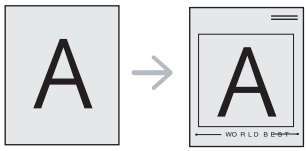
To take advantage of the printer features provided by your printer driver, click **Properties** or **Preferences** in the application's **Print** window to change the print settings. The machine name that appears in the printer properties window may differ depending on the machine in use.

- Some menus may not appear on the display depending on options or models. If so, it is not applicable to your machine.
- Select the **Help** menu or click the ? button from the window or press **F1** on your keyboard and click on any option you want to know about (see "Using help" on page 53).

Item	Description
Multiple Pages per Side 	Selects the number of pages to print on a single sheet of paper. To print more than one page per sheet, the pages will be reduced in size and arranged in the order you specify. You can print up to 16 pages on one sheet.
Poster Printing 	Prints a single-page document onto 4 (Poster 2x2), 9 (Poster 3x3), or 16 (Poster 4x4) sheets of paper, for the purpose of pasting the sheets together to form one poster-size document. Select the **Poster Overlap** value. Specify **Poster Overlap** in millimeters or inches by selecting the radio button on the upper right of **Basic** tab to make it easier to paste the sheets together. 

Item	Description
Booklet Printing 	Prints your document on both sides of a sheet of paper and arranges the pages so that the paper can be folded in half after printing to produce a booklet. • The **Booklet Printing** option is not available for all paper sizes. Select the available paper **Size** option under the **Paper** tab to see what paper sizes are available. • If you select an unavailable paper size, this option can be automatically canceled. Select only available paper (paper without ⚠ or ⊗ mark).
Double-Sided Printing	Some menus may not appear on the display depending on options or models. If so, it is not applicable to your machine. • **Printer Default:** If you select this option, this feature is determined by the settings you have selected on the control panel of the machine. • **None:** Disables this feature. • **Long Edge:** This option is the conventional layout used in bookbinding.  • **Short Edge:** This option is the conventional layout used in calendars.  • **Reverse Double-Sided Printing:** Check this option to reverse the print order when duplex printing.
Paper Options 	Changes the size of a document to appear larger or smaller on the printed page by entering in a percentage by which to enlarge or decrease the document.

Item	Description
Watermark 	The watermark option allows you to print text over an existing document. For example, you use it when you want to have large gray letters reading “**DRAFT**” or “**CONFIDENTIAL**” printed diagonally across the first page or all pages of a document.
Watermark **(Creating a watermark)**	a. To change the print settings from your software application, access **Printing Preferences** (see "Opening printing preferences" on page 51). b. From the **Advanced** tab, select **Edit...** from the **Watermark** drop-down list. c. Enter a text message in the **Watermark Message** box. You can enter up to 256 characters. When the **First Page Only** box is checked, the watermark prints on the first page only. d. Select watermark options. You can select the font name, style, size, and shade from the **Font Attributes** section, as well as set the angle of the watermark from the **Watermark Alignment and Angle** section. e. Click **Add** to add a new watermark to the **Current Watermarks** list. f. When you finish editing, click **OK** or **Print** until you exit the **Print** window.
Watermark **(Editing a watermark)**	a. To change the print settings from your software application, access **Printing Preferences** (see "Opening printing preferences" on page 51). b. Click the **Advanced** tab, select **Edit...** from the **Watermark** drop-down list. c. Select the watermark you want to edit from the **Current Watermarks** list and change the watermark message and options. d. Click **Update** to save the changes. e. Click **OK** or **Print** until you exit the **Print** window.
Watermark **(Deleting a watermark)**	a. To change the print settings from your software application, access **Printing Preferences**. b. Click the **Advanced** tab, select **Edit...** from the **Watermark** drop-down list. c. Select the watermark you want to delete from the **Current Watermarks** list and click **Delete**. d. Click **OK** or **Print** until you exit the **Print** window.

Item	Description
Overlay 	An overlay is text and/or images stored in the computer hard disk drive (HDD) as a special file format that can be printed on any document. Overlays are often used to take the place of letterhead paper. Rather than using preprinted letterhead, you can create an overlay containing exactly the same information that is currently on your letterhead. To print a letter with your company's letterhead, you do not need to load preprinted letterhead paper in the machine: just print the letterhead overlay on your document. To use a page overlay, you must create a new page overlay containing your logo or image. • The overlay document size must be the same as the document you print with the overlay. Do not create an overlay with a watermark. • The resolution of the overlay document must be the same as that of the document you will print with the overlay.
Overlay (Creating an overlay)	a. Create or open a document containing text or an image for use in a new page overlay. Position the items exactly as you wish them to appear when printed as an overlay. b. To save the document as an overlay, access **Printing Preferences**. c. Click the **Advanced** tab, and select **Create** from the **Overlay** drop-down list. d. In the **Save As** window, type a name up to eight characters in the **File name** box. Select the destination path, if necessary (The default is C:\Formover). e. Click **Save**. f. Click **OK** or **Print** until you exit the **Print** window. When a confirming message window appears, click **Yes**. g. The file is not printed. Instead, it is stored on your computer hard disk drive.

Item	Description
Overlay (Using a page overlay)	a. Create or open the document you want to print. b. To change the print settings from your software application, access **Printing Preferences**. c. Click the **Advanced** tab. d. Select the **Print Overlay** from the **Overlay** drop-down list. e. If you have stored the overlay file you want to use in an external source, you can also load the file when you access the **Load** window. After you select the file, click **Open**. The file appears in the **Overlay List** box and is available for printing. Select the overlay from the **Overlay List** box. f. If necessary, check **Confirm Page Overlay When Printing** box. If this box is checked, a message window appears each time you submit a document for printing, asking you to confirm your wish to print an overlay on your document. If this box is not checked and an overlay has been selected, the overlay automatically prints with your document. g. Click **OK** or **Print** until you exit the **Print** window. The selected overlay prints on your document.
Overlay (Deleting a page overlay)	a. In the **Printing Preferences** window, click the **Advanced** tab. b. Select **Edit** in the **Text** drop down list. c. Select the overlay you want to delete from the **Overlay List** box. d. Click **Delete**. e. When a confirming message window appears, click **Yes**. f. Click **OK** or **Print** until you exit the **Print** window. You can delete page overlays that you no longer use.

Item	Description
Print Mode	 • This feature is available only if you have installed the mass storage device or optional memory (see "Variety feature" on page 7). • This feature is not enabled, **Storage Options** check (see "Setting Device Options" on page 83). • Without installing the mass storage device in the machine, the RAM Disk feature provides only 3 options: **Normal**, **Proof**, and **Confidential**. • **Print Mode:** The default **Print Mode** is **Normal**, which is for printing without saving the printing file in the memory. - **Normal:** This mode prints without storing your document in the optional memory. - **Proof:** This mode is useful when you print more than one copy. You can print one copy first to check, then print the rest of the copies later. - **Confidential:** This mode is used for printing confidential documents. You need to enter a password to print. - **Job Name:** This option is used when you need to find a stored file using the control panel. - **User ID:** This option is used when you need to find a stored file using the control panel. The user name automatically appears as the user name that you use to log on Windows. - **Enter Password:** If the **Property** of the document box you selected is **Secured**, you have to enter the password for the document box. This option is used for loading a stored file using the control panel. - **Confirm Password:** Re-enter the password to confirm it.

Using Printer Status programs

The Printer Status is a program that monitors and informs you of the machine status.

- The Printer Status window and its contents shown in this user's guide may differ depending on the machine or operating system in use.
- Check the operating system(s) that are compatible with your machine (see "System requirements" on page 120).

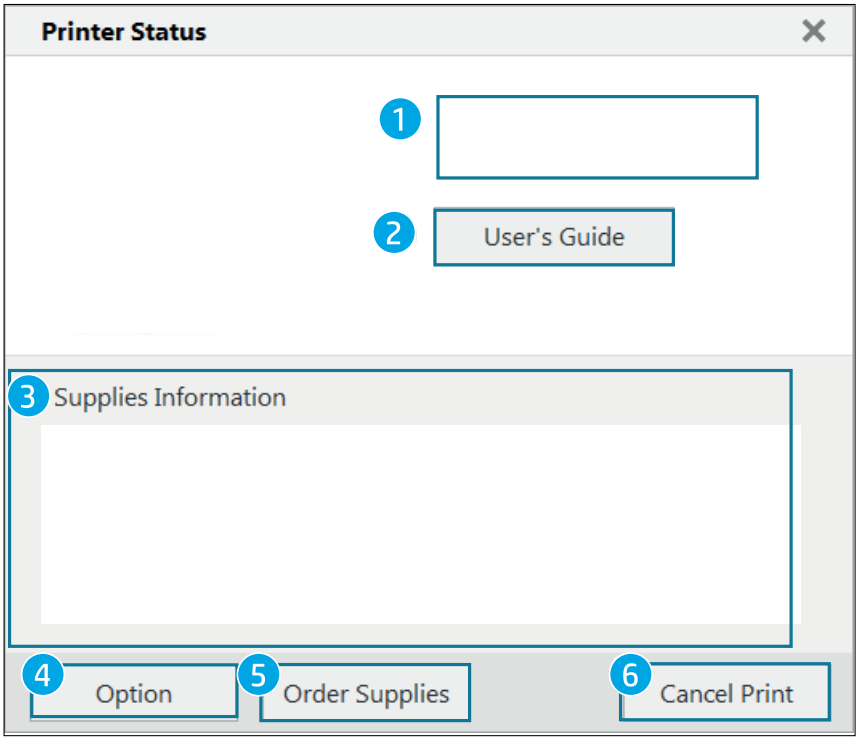
Printer Status overview

If an error occurs while operating, you can check the error from the Printer Status. Printer Status is installed automatically when you install the machine software.

You can also launch Printer Status manually. Go to the **Printing Preferences**, click any tab except for the **About** tab > **Printer Status** button. The **Favorites** option, which is visible on each preferences.

These icons appear on the Windows task bar:

Icon	Mean	Description
	Normal	The machine is in ready mode and experiencing no errors or warnings.
	Warning	The machine is in a state where an error might occur in the future. For example, it might be in toner low status, which may lead to toner empty status.
	Error	The machine has at least one error.



1	**Device Information**	You can see the device status , current printer model name, connected port name in this area.
2	**User's Guide**	User's guide is disabled. You can download User's Guide in www.hp.com/support/laser408.
3	**Supplies Information**	You can view the percentage of toner remaining in each toner cartridge. The machine and the number of toner cartridge(s) shown in the above window may differ depending on the machine in use. Some machines do not have this feature.
4	**Option**	You can set printing job alert related settings.
5	**Order Supplies**	You can order replacement toner cartridge(s) from online.
6	**Cancel Print** or **Close**	• **Cancel Print :** If print job is waiting in the print queue or printer, cancel all user's print jobs in the print queue or the printer. • **Close :** Depending on the status of the machine or the supported functions, the **Close** button may appear to close the status window.

Useful Setting Menus

This chapter explains how to browse the current status of your machine, and the method of setting for advanced machine setup.

Some menus may not appear in the display depending on options or models. If so, it is not applicable to your machine.

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- Layout 65
- Paper 66
- Graphic 67
- System Setup 68
- Emulation 70
- Network 71
- Job Management 72
- PrinterOn 73

Information

To change the menu options,

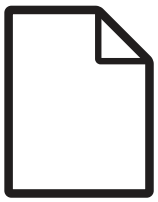
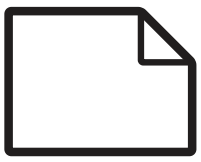
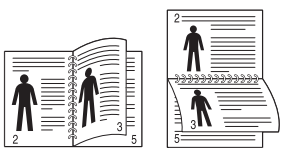
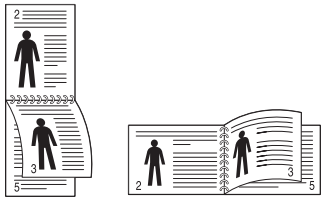
Press ••• (**Menu**) > **Information** on the control panel.

Item	Description
Menu Map	Prints the menu map which shows the layout and current settings of this machine.
Configuration	Prints a report on the machine's overall configuration.
Supplies Info.	Prints supplies' information page.
Usage Counter	Prints a usage page. The usage page contains the total number of pages printed.
PCL Font	Prints the PCL font list.
EPSON Font	Prints the EPSON font list.
Error Info.	Prints the error information page.

Layout

To change the menu options,

Press ••• (**Menu**) > **Layout** on the control panel.

Item	Description
Orientation	Selects the direction in which information is printed on a page. • **Portrait**  • **Landscape** 
Margin	• **Common Margin:** Sets the margin for each side of paper. • **Tray 1:** Sets the paper margins in Tray 1. • **Tray X:** Sets the paper margins for the paper trays. • **Emulation Mar./Emulation Margin:** Sets the paper margins for emulation print page.
Duplex	To print on both sides of the paper, choose the binding edge. • **Off:** Disables this option. • **Long Edge**  • **Short Edge** 

Paper

To change the menu options,

Press ••• (**Menu**) > **Paper** on the control panel.

Item	Description
Copies	Selects the number of copies.
Tray 1/ Tray <x>	• **Paper Size:** Selects the default paper size. • **Paper Type:** Selects the paper type currently loaded in the tray.
Paper Source	Sets the default paper tray to use. **Auto:** Automatically locates the tray with the same sized paper as an original.

Graphic

To change the menu options,

Press ••• (**Menu**) > **Graphic** on the control panel.

Item	Description
Resolution	Specifies the number of dots printed per inch (dpi). The higher the setting, the sharper printed characters and graphics.
Clear Text	Prints text darker than on a normal document.
Auto CR	Allows you to append the required carriage return to each line feed, which is useful for Unix or DOS users.

System Setup

To change the menu options,

Press ••• (**Menu**) > **System Setup** on the control panel.

Item	Description
Language	Sets the language of the text that appears on the control panel display.
Default Paper	You can set the default paper size to use.
Power Save	Sets how long the machine waits before going to power save mode. When the machine does not receive data for an extended period of time, power consumption is automatically lowered.
Wakeup Event	When this option is **On**, you can wake up the machine from the power saving mode with the following actions: • Loading paper in a tray. • Opening or closing the front cover. • Pulling a tray out or pushing a tray in.
Job Timeout	When there is no input for a certain period of time, the machine cancels the current job. You can set the amount of time the machine will wait before canceling the job.
Altitude Adj.	Optimize print quality according to the machine's altitude ("Altitude adjustment" on page 27).
Auto Continue	Determine whether or not the machine continues printing when it detects the paper does not match the paper settings. • **0 Sec:** This option allows you to continue printing when the paper size you have set is mismatched with the paper in the tray. • **30 Sec:** If a paper mismatch occurs, an error message will display. The machine waits for about 30 second, then automatically clear the message and continue printing. • **Off:** If a paper mismatch occurs, the machine waits until you insert the correct paper.
Auto Tray Swi.	Determine whether or not the machine continues printing when it detects the paper does not match. For example, if both tray 2 and tray 3 are filled with the same size paper, the machine automatically prints from tray 3 after the tray 2 runs out of paper. This option does not appear if you selected **Auto** for **Paper Source** from printer driver.

Item	Description
Paper Substit.	Automatically substitutes the printer driver's paper size to prevent the paper mismatch between Letter and A4. For example, if you have A4 paper in the tray but you set the paper size to Letter in the printer driver, the machine prints on A4 paper and vice versa.
Tray Protect.	Decides to use or not use the **Auto Tray Swi.** feature for a certain tray. If you set tray 2 to on, for example, then tray 2 is excluded during tray switching.
SkipBlankPage	The printer detects the printing data from computer whether a page is empty or not. You can set to print or skip the blank page.
Maintenance	• **CLR Empty Msg.:** This option appears only when toner cartridge is empty. • **Supplies Life:** Allows you to check how many pages are printed and how much toner is left in the cartridge. • **Image Mgr.:** Allows you to adjust the density. • **TonerLow Alert:** If toner in the cartridge has run out, a message informing the user to change the toner cartridge appears. You can set the option for this message to appear or not. • **ImgU. Low Alert:** Allows you to set the alarm for when the imaging unit is low. • **RAM Disk:** Enables/disables RAM disk to manage jobs.
Toner Save	Activating this mode extends the life of your toner cartridge and reduces your cost per page beyond what one would experience in the normal mode, but it reduces print quality.
Auto Power Off	Sets the printer to turn power off automatically when the machine has been in power save mode for the length of settings on the operator panel.

Emulation

To change the menu options,

Press ••• (**Menu**) > **Emulation** on the control panel.

Item	Description
Emulation Type	The machine language defines how the computer communicates with the machine.
Setup	Sets the detailed settings for the selected emulation type.

Network

To change the menu options,

Press ••• (**Menu**) > **Network** on the control panel.

You can also use this feature from the HP Embedded Web Server. Open the Web browser from your networked computer and type the IP address of your machine. When HP Embedded Web Server opens, click **Settings** > **Network Settings** (see "Using HP Embedded Web Server" on page 45).

Option	Description
TCP/IP (IPv4)	Selects the appropriate protocol and configure parameters to use the network environment (see "Setting IP address" on page 42). There are lots of parameters to be set. If you are not sure, leave as is, or consult the network administrator.
TCP/IP (IPv6)	Selects this option to use the network environment through IPv6 (see "IPv6 configuration" on page 42).
Ethernet	Configure the Ethernet port and network transmission speed. Turn the power off and on after you change this option.
802.1x	You can select the user authentication for network communication. For detailed information consult the network administrator.
Protocol Mgr.	You can activate or deactivate the protocols. Turn the power off and on after you change this option.
Network Conf.	This list shows information on your machine's network connection and configuration (see "Printing a network configuration report" on page 42).
Clear Setting	Reverts the network settings to the default values. Turn the power off and on.

Job Management

This option is available when the optional memory installed or RAM Disk is checked.

To change the menu options,

Press ••• (**Menu**) > **Job Management** on the control panel.

Item	Description
Active Job	Shows the print job lists that are waiting to be printed.
Secured Job	Shows the print job lists that are secured on the disk.
Stored Job	Shows the print job lists that are stored on the disk.
Filing Policy	If the memory already has the same name when you entered a new file name, you can rename or overwrite it.

PrinterOn

Some menus may not appear in the display depending on options or models.

To change the menu options,

Press ••• (**Menu**) > **PrinterOn** on the control panel.

You can enable the PrinterOn feature in the PrinterOn menu.

Before you can use the PrinterOn feature, you must configure the network connection of the machine. If you cannot connect to the machine after configuring its network connection, then you may have to check the external internet connection of the network.
When the PrinterOn feature is enabled, you can set it to Release Code mode or Auto mode. These modes can be changed on the PrinterOn server.

- **Release Code**: Users must enter a Release Code to print a document sent through PrinterOn.
- **Auto**: The machine automatically prints documents sent through PrinterOn without the user entering a Release Code.

Maintenance

This chapter provides information about purchasing supplies, accessories and maintenance parts available for your machine.

- Ordering supplies and accessories 75
- Available supplies 76
- Available accessories 78
- Storing the toner cartridge 79
- Redistributing toner 80
- Replacing the toner cartridge 81
- Replacing the imaging unit 82
- Installing accessories 83
- Monitoring the supplies life 86
- Setting the toner/imaging unit low alert 87
- Cleaning the machine 88

Ordering supplies and accessories

Available accessories may differ from country to country. Contact your sales representatives to obtain the list of available supplies, and maintenance parts (see "Available supplies" on page 76,"Available accessories" on page 78).

To order HP-authorized supplies, accessories, and maintenance parts, contact your local HP dealer or the retailer where you purchased your machine. You can also visit https://store.hp.com/, and then select your country/region to obtain the contact information for service.

Available supplies

When supplies reach the end of their life spans, you can order the followings of supplies for your machine:

Type	Product name	Product number	Regiona[a]	Average yield[b]
Toner cartridge	HP 330A Black Original Laser Toner Cartridge	W1330A	For use only in North America, Latin America	Average continuous cartridge yield: Approx. 5,000 standard pages
	HP 330X High Yield Black Original Laser Toner Cartridge	W1330X		Average continuous cartridge yield: Approx. 15,000 standard pages
	HP 330XC High Yield Black Original Laser Toner Cartridge	W1330XC		
	HP 331A Black Original Laser Toner Cartridge	W1331A	For use only in Europe, Russia, CIS,supplies Mid East and Africa	Average continuous cartridge yield: Approx. 5,000 standard pages
	HP 331X High Yield Black Original Laser Toner Cartridge	W1331X		Average continuous cartridge yield: Approx. 15,000 standard pages
	HP 331XC High Yield Black Original Laser Toner Cartridge	W1331XC		
	HP 331XH High Yield Black Original Laser Toner Cartridge	W1331XH		
Imaging Drum	HP 332A Black Original Laser Imaging Drum	W1332A	For use all the region	Approx. 30,000 pages
	HP 332AH Black Original Laser Imaging Drum	W1332AH		
	HP 332AC Black Original Laser Imaging Drum	W1332AC		

a.When purchasing new toner cartridges or other supplies, these must be purchased in the same country as the machine you are using. Otherwise, new toner cartridges or other supplies will be incompatible with your machine due to different configurations of toner cartridges and other supplies according to the specific country conditions.

b.Declared yield value in accordance with ISO/IEC 19752. The number of pages may be affected by operating environment, printing interval, graphics, media type and media size.

Depending on the options, percentage of image area and job mode used, the toner cartridge's lifespan may differ.

When purchasing new toner cartridges or other supplies, these must be purchased in the same country as the machine you are using. Otherwise, new toner cartridges or other supplies will be incompatible with your machine due to different configurations of toner cartridges and other supplies according to the specific country conditions.

HP does not recommend using non-genuine HP toner cartridge such as refilled or remanufactured toner. HP cannot guarantee non-genuine HP toner cartridge's quality. Service or repair required as a result of using non-genuine HP toner cartridges will not be covered under the machine’s warranty.

Available accessories

You can purchase and install accessories to enhance your machine's performance and capacity.

Some features and optional goods may not be available depending on model or country (see "Features by model" on page 7).

Accessory	Function	Part name
Memory module (512MB)	Extends your machine's memory capacity.	5PJ81A
Optional tray	If you are experiencing frequent paper supply problems, you can attach an additional 520[a] sheet tray.	7YG00A

a.Plain paper 80 g/m^2 (20 lb bond).

Storing the toner cartridge

Toner cartridge contain components that are sensitive to light, temperature and humidity. HP suggests users follow these recommendations to ensure optimal performance, highest quality, and longest life from your new HP toner cartridge.

Store this cartridge in the same environment in which the printer will be used. This should be in controlled temperature and humidity conditions. The toner cartridge should remain in its original and unopened package until installation – if original packaging is not available, cover the top opening of the cartridge with paper and store in a dark cabinet.

Opening the cartridge package prior to use dramatically shortens its useful shelf and operating life. Do not store on the floor. If the toner cartridge is removed from the printer, follow the instructions below to store the toner cartridge properly.

- Store the cartridge inside the protective bag from the original package.
- Store lying flat (not standing on end) with the same side facing up as if it were installed in the machine.
- Do not store supplies in any of the following conditions:
  - Temperature greater than 40°C (104°F).
  - Humidity range less than 20% or greater than 80%.
  - An environment with extreme changes in humidity or temperature.
  - Direct sunlight or room light.
  - Dusty places.
  - A car for a long period of time.
  - An environment where corrosive gases are present.
  - An environment with salty air.

Handling instructions

- Do not touch the surface of the photo conductive drum in the cartridge.
- Do not expose the cartridge to unnecessary vibrations or shock.
- Never manually rotate the drum, especially in the reverse direction; this can cause internal damage and toner spillage.

Toner cartridge usage

HP does not recommend or approve the use of non-HP brand toner cartridges in your printer including generic, store brand, refilled, or remanufactured toner cartridges.

HP's printer warranty does not cover damage to the machine caused by the use of a refilled, remanufactured, or non-HP brand toner cartridges.

Estimated cartridge life

Estimated cartridge life (the life of the toner cartridge yield) depends on the amount of toner that print jobs require. The actual print yield may vary depending on the print density of the pages you print on, operating environment, percentage of image area, printing interval, media type and/or media size. For example, if you print a lot of graphics, the consumption of the toner is higher and you may need to change the cartridge more often.

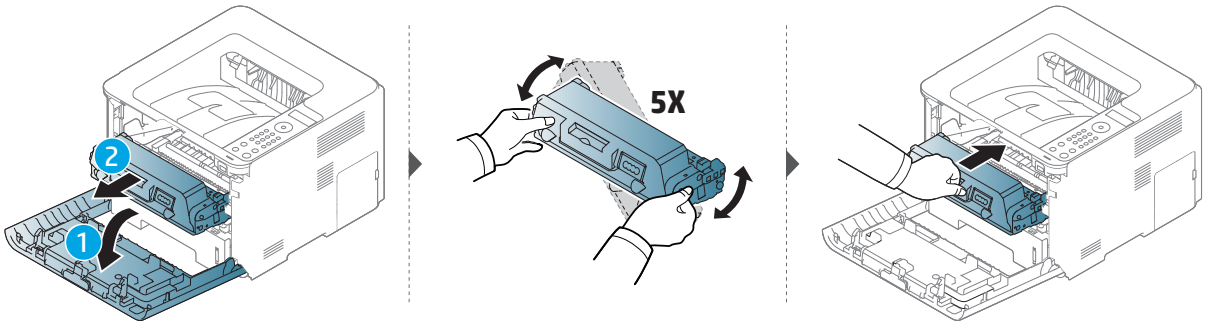
Redistributing toner

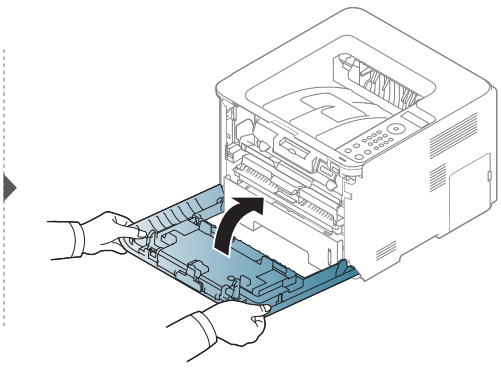
When the toner cartridge is near the end of its life:

- White streaks or light printing occurs and/or density variation side to side.
- The **Status** LED blinks red. The toner-related message saying that the toner is low may appear on the display.

If this happens, you can temporarily improve print quality by redistributing the remaining toner in the cartridge. In some cases, white streaks or light printing will still occur even after you have redistributed the toner. Replace the toner cartridge (see "Available supplies" on page 76).

- To prevent damage to the toner cartridge, do not expose it to light for more than a few minutes. Cover it with a piece of paper, if necessary.
- Do not touch the green area of the toner cartridge. Use the handle on the cartridge to avoid touching this area.
- Do not use sharp objects such as a knife or scissors to open the toner cartridge package. They might scratch the drum of the cartridge.
- If toner gets on your clothing, wipe it off with a dry cloth and wash clothing in cold water. Hot water sets toner into fabric.





Replacing the toner cartridge

A toner cartridge has almost reached its estimated cartridge life:

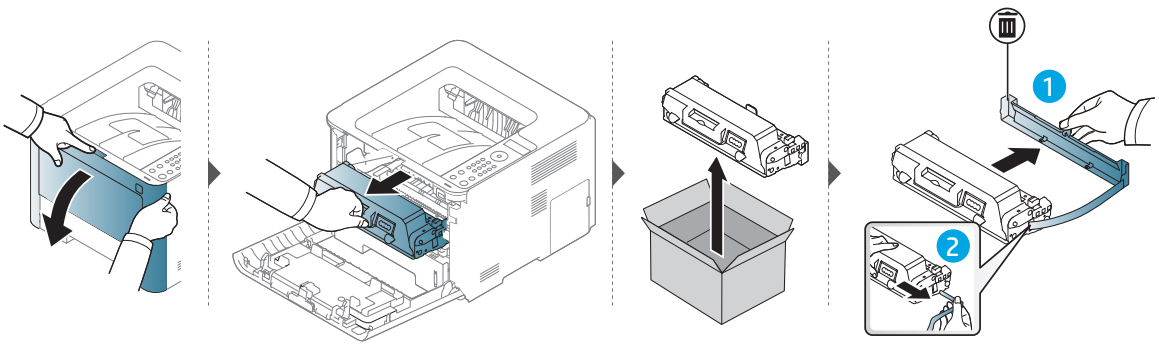
- The status LED and the toner-related message on the display indicate when the toner cartridge should be replaced.

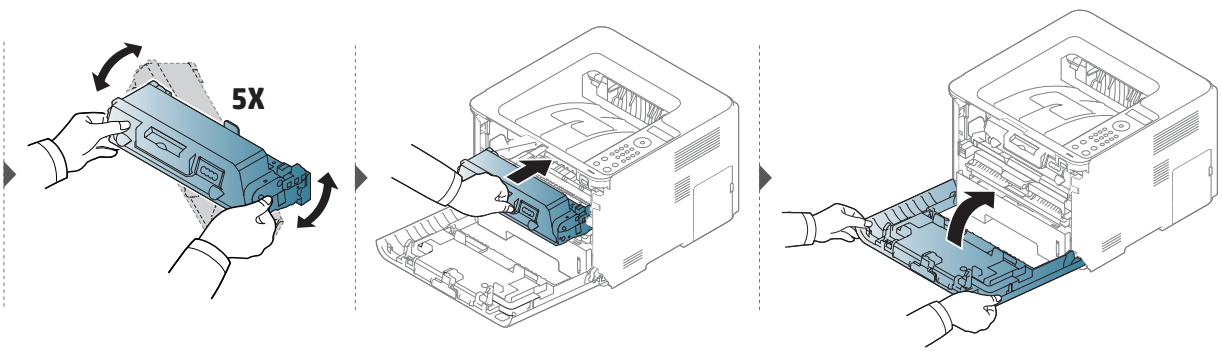
Shake the toner cartridge thoroughly, it will increase the initial print quality.

- To prevent damage to the toner cartridge, do not expose it to light for more than a few minutes. Cover it with a piece of paper, if necessary.
- Do not touch the green area of the toner cartridge. Use the handle on the cartridge to avoid touching this area.
- Do not use sharp objects such as a knife or scissors to open the toner cartridge package. They might scratch the drum of the cartridge.
- If toner gets on your clothing, wipe it off with a dry cloth and wash clothing in cold water. Hot water sets toner into fabric.

Toner cartridge

When a toner cartridge has reached the end of life, the machine will stop printing.



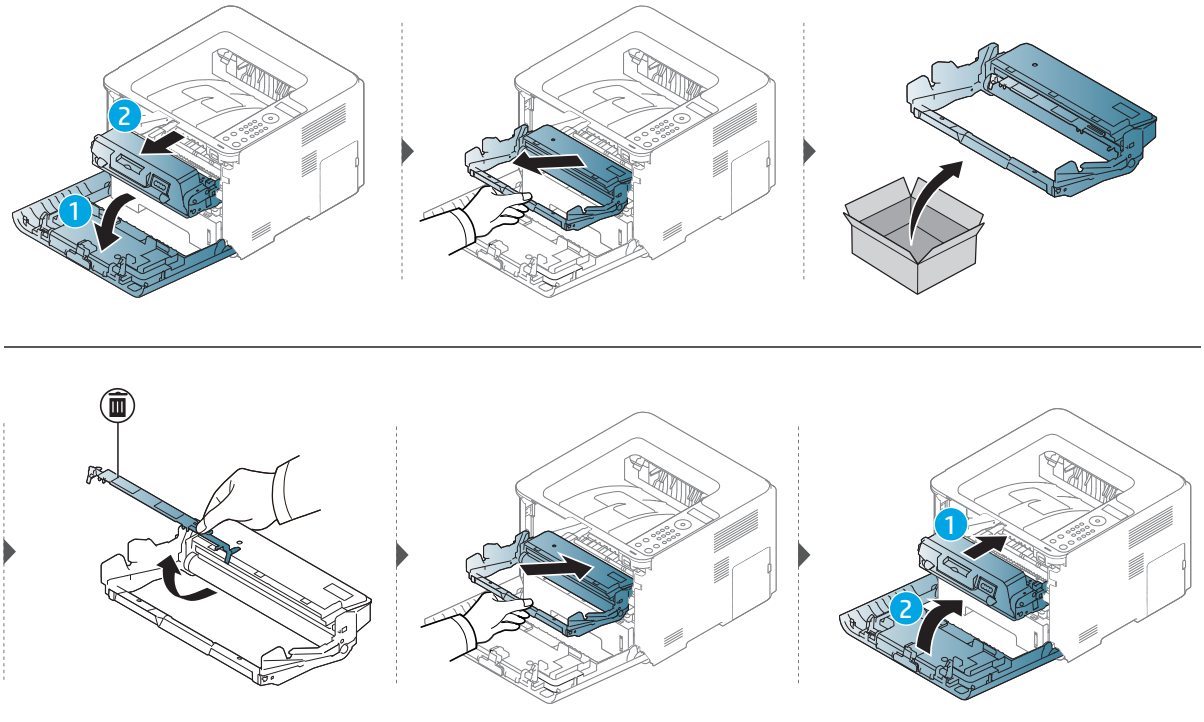


Replacing the imaging unit

When a imaging unit has reached the end of life, the machine will stop printing.

- Do not use sharp objects such as a knife or scissors to open the toner cartridge package. They might scratch the drum of the cartridge.
- If toner gets on your clothing, wipe it off with a dry cloth and wash clothing in cold water. Hot water sets toner into fabric.

Imaging unit



Installing accessories

Precautions

- Disconnect the power cord
  Never remove the control board cover while the power is turned on.
  To avoid the possibility of an electrical shock, always disconnect the power cord when installing or removing ANY internal or external accessories.
- Discharge static electricity
  The control board and internal accessories (network interface card or memory module) are sensitive to static electricity. Before installing or removing any internal accessories, discharge static electricity from your body by touching something metal, such as the metal back plate on any device plugged into a grounded power source. If you walk around before finishing the installation, repeat this procedure to discharge any static electricity again.

When installing accessories, the battery inside the machine is a service component. Do not change it by yourself. There is a risk of an explosion if battery is replaced by an incorrect type. Your service provider should remove the old battery from your device and dispose of it in accordance with the relevant regulations in your country.

Setting Device Options

When you install the optional devices such as optional tray, memory, etc, this machine automatically detects and sets the optional devices. If you cannot use the optional devices you installed in this driver, you need to set the optional devices in **Device Options**.

1 Click the Windows **Start** menu.

2 Select **Printers and Faxes**.

3 Right-click your machine.

4 Select **Properties** or **Printer properties**.

The **Properties** window may differ depending on the driver or operating system you are using.

5 Select **Device Options**.

6 Select the appropriate option.

Some menus may not appear in the display depending on options or models. if so, it is not applicable to your machine.

- **Tray Options:** Select the optional tray you installed. You can select the tray.
- **Storage Options:** Select the optional memory you installed. If this feature is checked, you can select the **Print Mode**.
- **Printer Configuration:** Select the printer language for the print job.
- **Administrator Settings:** You can select the **Printer Status** and **EMF Spooling**.
- **Custom Paper Size Settings:** You can specify custom paper size.

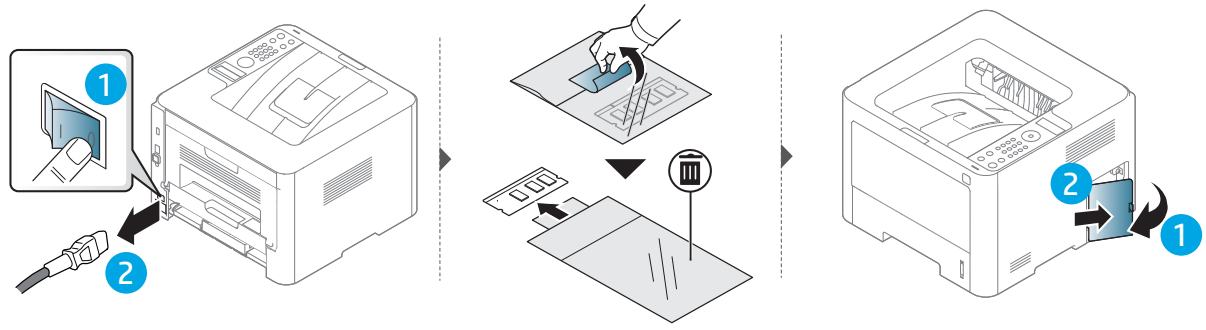
7 Click **OK** until you exit the **Properties** or **Printer properties** window.

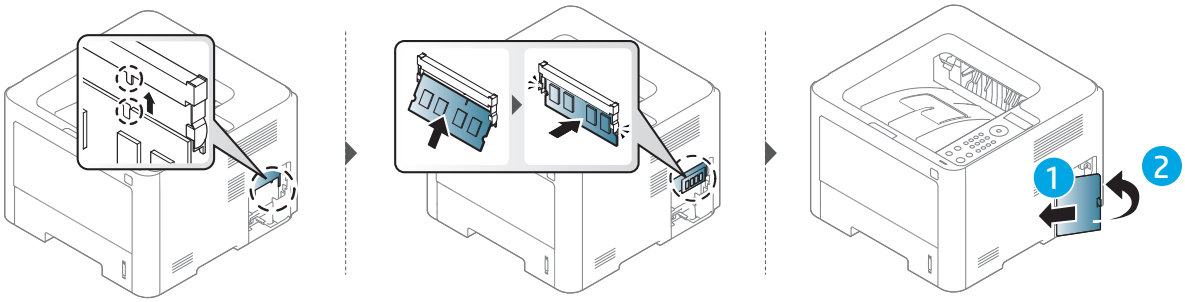
Upgrading a memory module

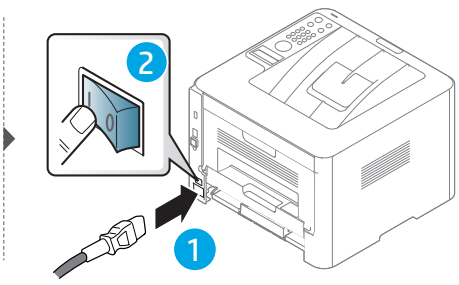
Your machine has a dual in-line memory module (DIMM). Use this memory module slot to install additional memory. We recommend the use of only genuine HP DIMM's. You may void your warranty if it is determined that your machine problem is being caused by third party DIMM's.

The order information is provided for optional accessories (see "Available accessories" on page 78).

After installing the optional memory, you can use the advanced printing features, such as proofing a job and specifying of printing a secure print job in the printer properties window. You can control the active job queue and file policy in **Job Management** menu.







Monitoring the supplies life

If you experience frequent paper jams or printing problems, check the number of pages the machine has printed or scanned. Replace the corresponding parts, if necessary.

It may be necessary to press **OK** to navigate to lower-level menus for some models.

1 Select •••(**Menu**) > **System Setup** > **Maintenance** > **Supplies Life** on the control panel.

2 Select the option you want and press **OK**.

3 Press ⊗(**Cancel**) button to return to ready mode.

Setting the toner/imaging unit low alert

If the amount of toner in the cartridge is low, a message or LED informing the user to change the toner cartridge appears. You can set the option for whether or not this message or LED appears.

1 Select •••(**Menu**) > **System Setup** > **Maintenance** > **TonerLow Alert** or **ImgU.Low Alert** on the control panel.

2 Select the option you want and press **OK** to save the selection.

3 Press ⊗ (**Cancel**) button to return to ready mode.

Cleaning the machine

If printing quality problems occur or if you use your machine in a dusty environment, you need to clean your machine regularly to keep it in the best printing condition and use your machine longer.

- Cleaning the cabinet of the machine with cleaning materials containing large amounts of alcohol, solvents, or other strong substances can discolor or distort the cabinet.
- If your machine or the surrounding area is contaminated with toner, we recommend you use a cloth or tissue dampened with water to clean it. If you use a vacuum cleaner, toner blows in the air and might be harmful to you.

Cleaning the outside or the display screen

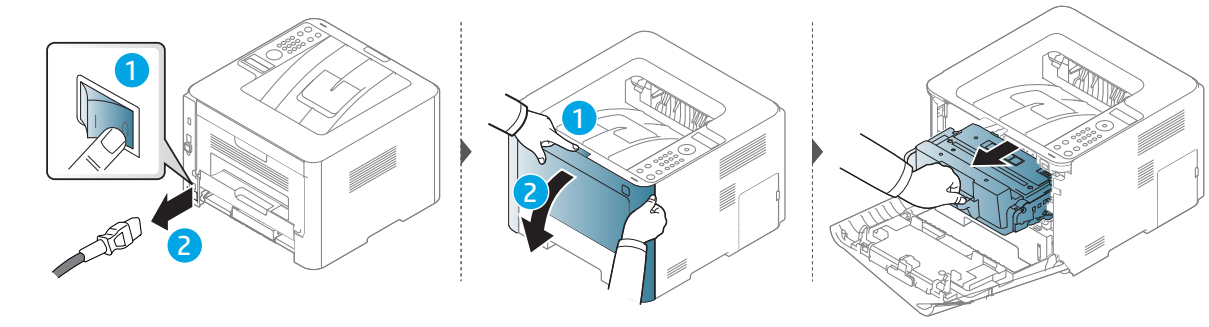
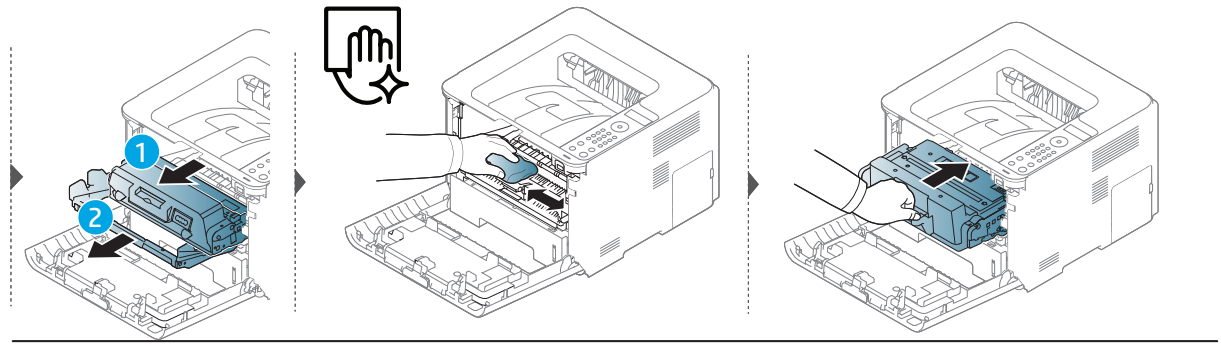
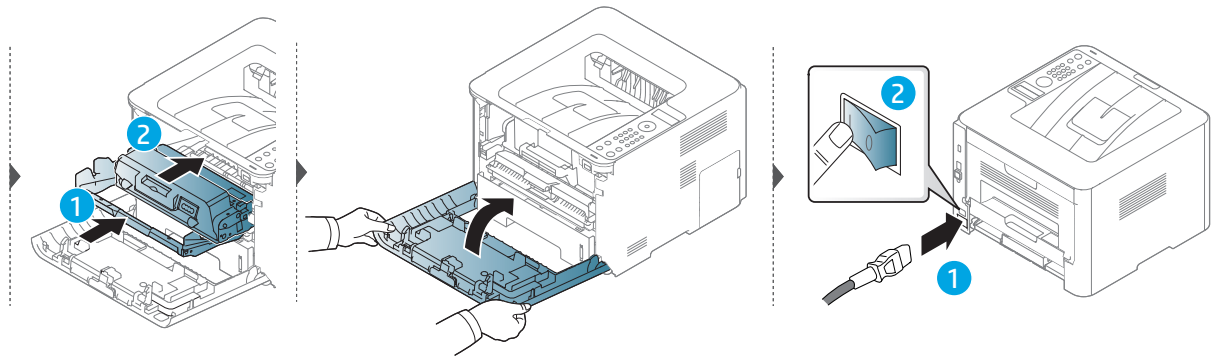
Clean the machine cabinet or the display screen with a soft, lint-free cloth. Dampen the cloth slightly with water, but be careful not to let any water drip onto or into the machine.

Cleaning the inside

During the printing process, paper, toner, and dust particles can accumulate inside the machine. This buildup can cause print quality problems, such as toner specks or smearing. Cleaning the inside of the machine clears and reduces these problems.

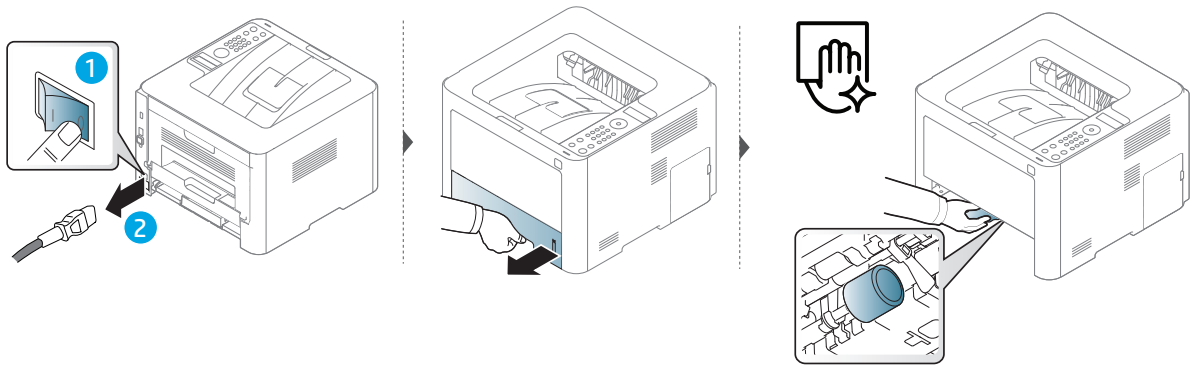
- To prevent damage to the toner cartridge, do not expose it to light for more than a few minutes. Cover it with a piece of paper, if necessary.
- Do not touch the green area of the toner cartridge. Use the handle on the cartridge to avoid touching this area.
- Use a dry lint free cloth when cleaning the inside of the machine, be careful not to damage the transfer roller or any other inside parts. Do not use solvents such as benzene or thinner. Printing quality problems can occur and cause damage to the machine.

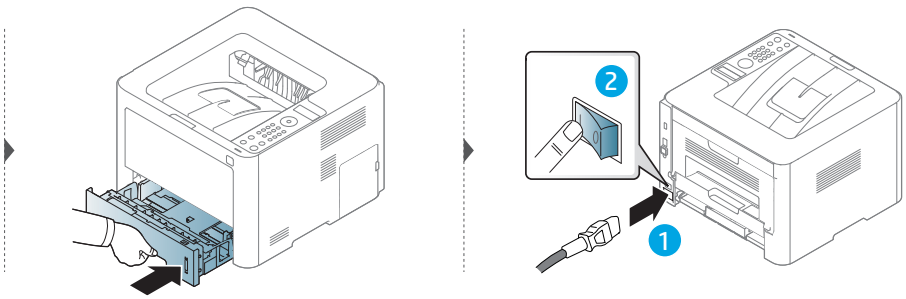
- Use a dry lint-free cloth to clean the machine.
- Turn the machine off and unplug the power cord. Wait for the machine to cool down. If your machine has a power switch, turn the power switch off before cleaning the machine.

Cleaning the pickup roller

Turn the machine off and unplug the power cord. Wait for the machine to cool down. If your machine has a power switch, turn the power switch off before cleaning the machine.





Troubleshooting

This chapter gives helpful information for what to do if you encounter an error.

This chapter gives helpful information for what to do if you encounter an error. If your machine has a display screen, check the message on the display screen first to solve the error. If you cannot find a solution in the User's Guide or the problem persists, call for service.

- Tips for avoiding paper jams 92
- Clearing paper jams 93
- Understanding the LEDs 98
- Understanding display messages 99
- A “Low Toner” or “Very Low Toner” message displays in Supplies information report 103
- Paper feeding problems 104
- Power and cable connecting problems 105
- Solving other problems 106

Tips for avoiding paper jams

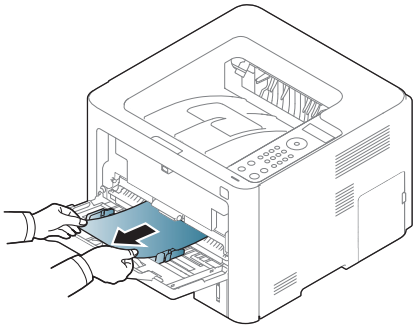
By selecting the correct media types, most paper jams can be avoided. To avoid paper jams, refer to the following guidelines:

- Ensure that the adjustable guides are positioned correctly (see "Tray overview" on page 29).
- Do not overload the tray. Ensure that the paper level is below the paper capacity mark on the inside of the tray.
- Do not remove paper from the tray while your machine is printing.
- Flex, fan, and straighten paper before loading.
- Do not use creased, damp, or highly curled paper.
- Do not mix paper types in a tray.
- Use only recommended print media (see "Print media specifications" on page 118).

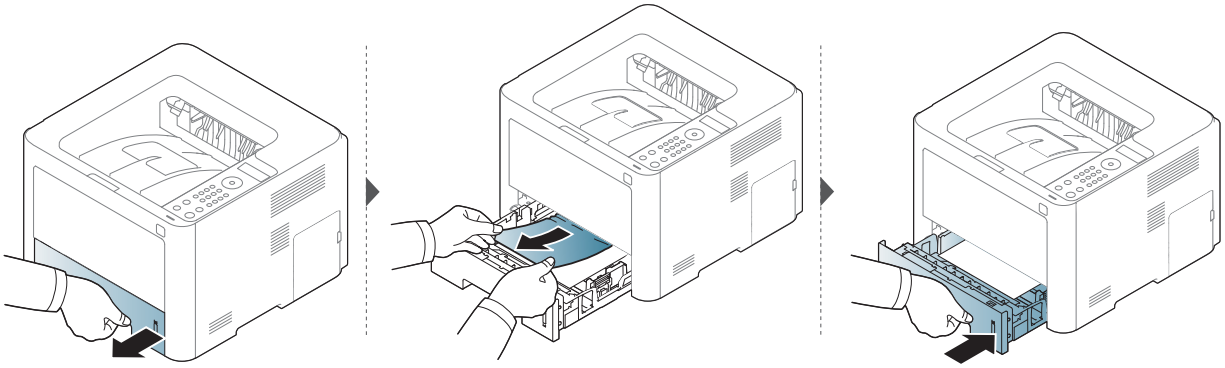
Clearing paper jams

To avoid tearing the paper, pull the jammed paper out slowly and gently.

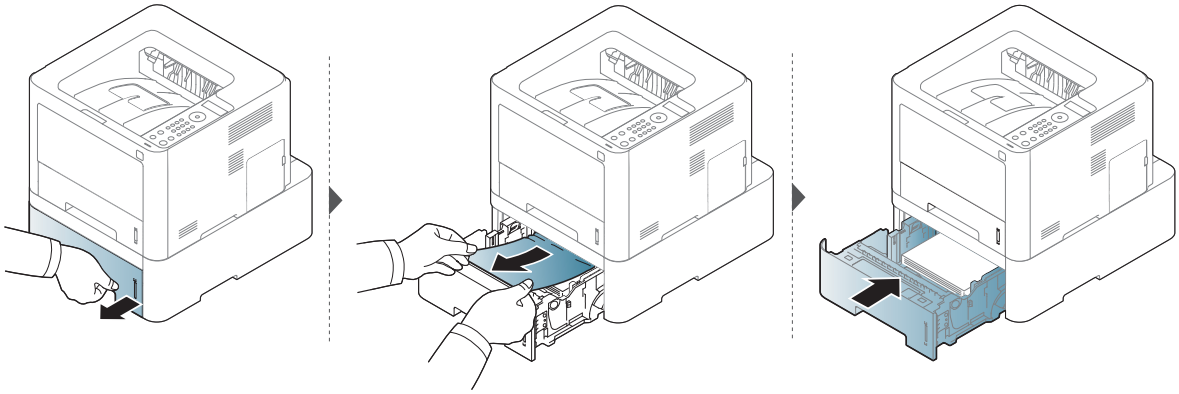
In Tray 1



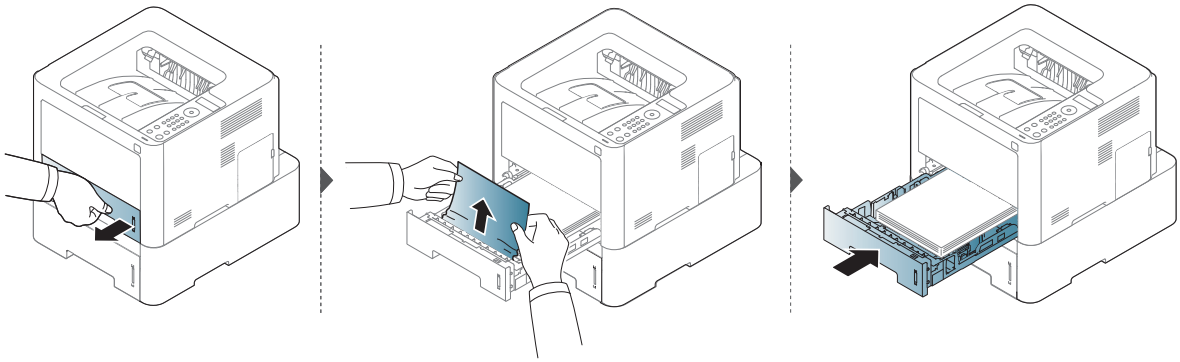
In tray 2

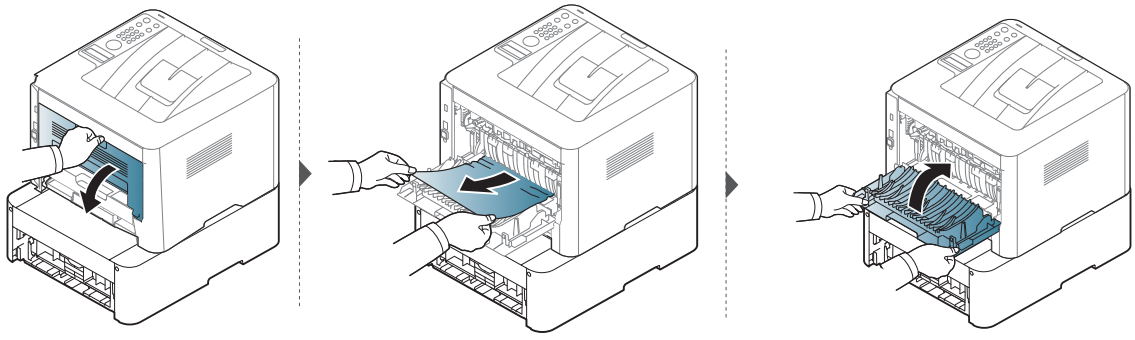


In optional tray (Tray 3)



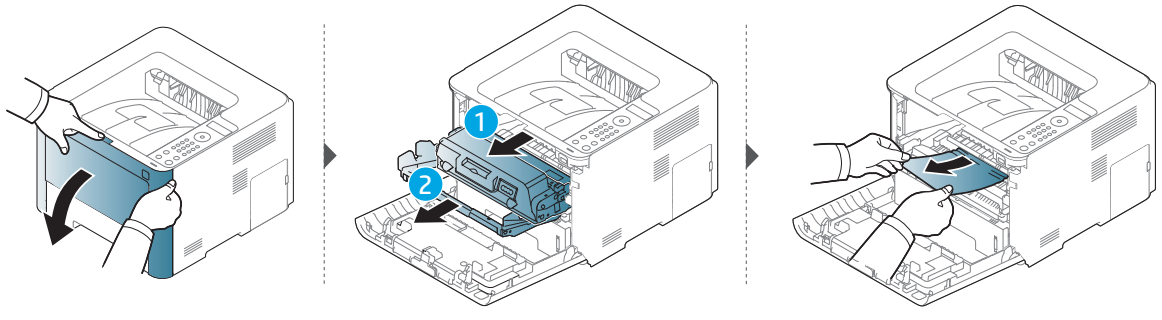
If you do not see the paper in this area, stop and go to next step:

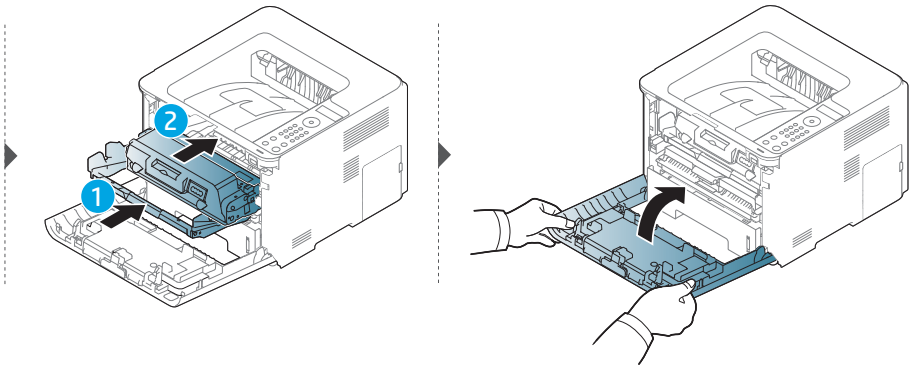




Inside the machine

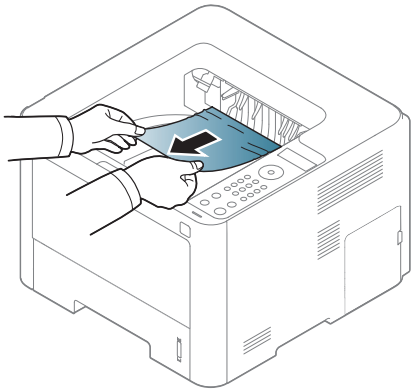
The fuser area is hot. Take care when removing paper from the machine.



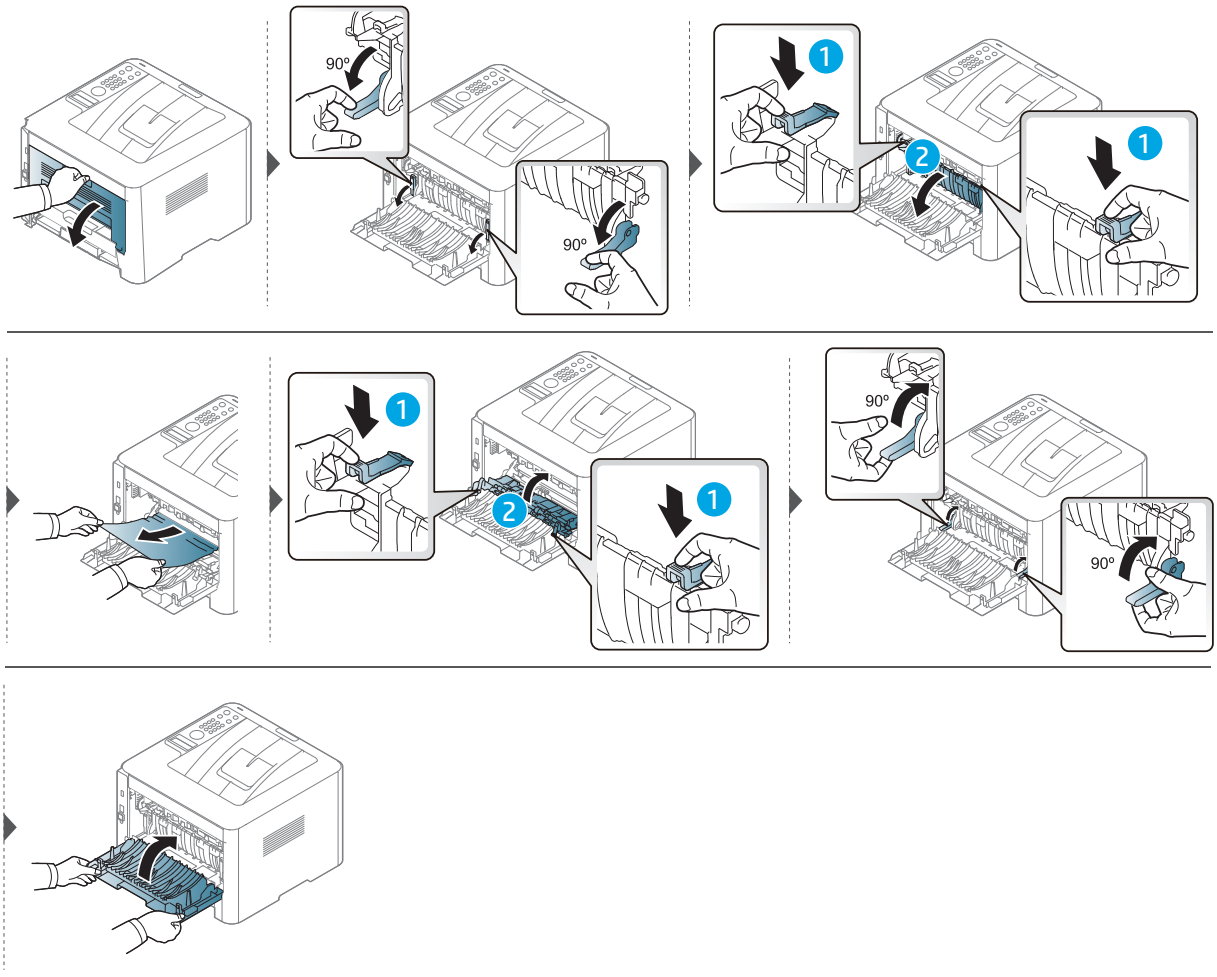


In exit area

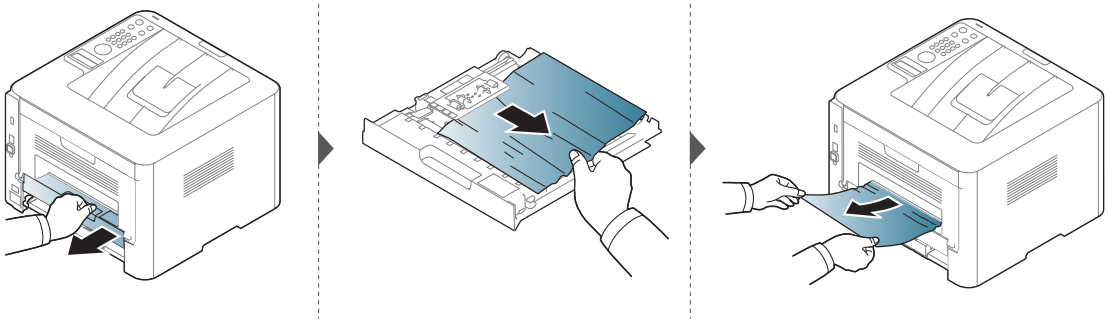
The fuser area is hot. Take care when removing paper from the machine.

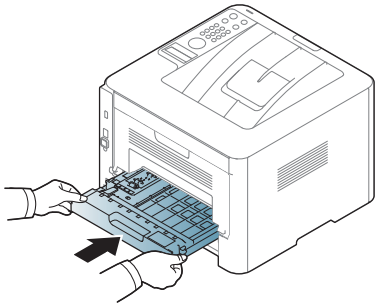


If you do not see the paper in this area, stop and go to next step:

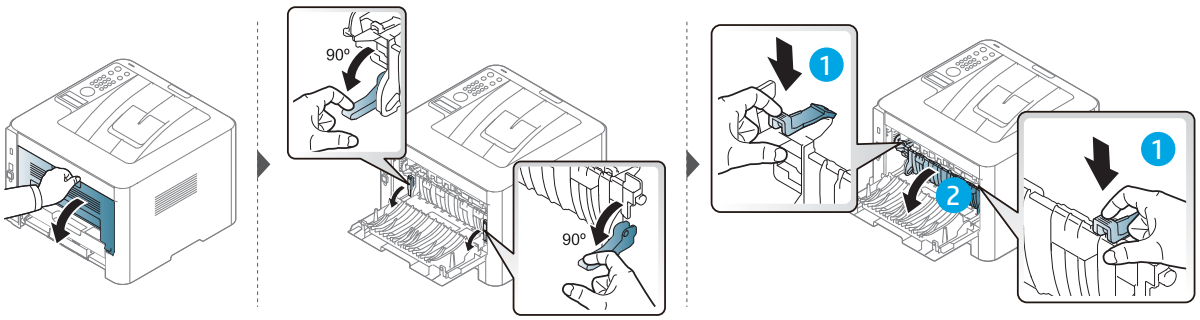


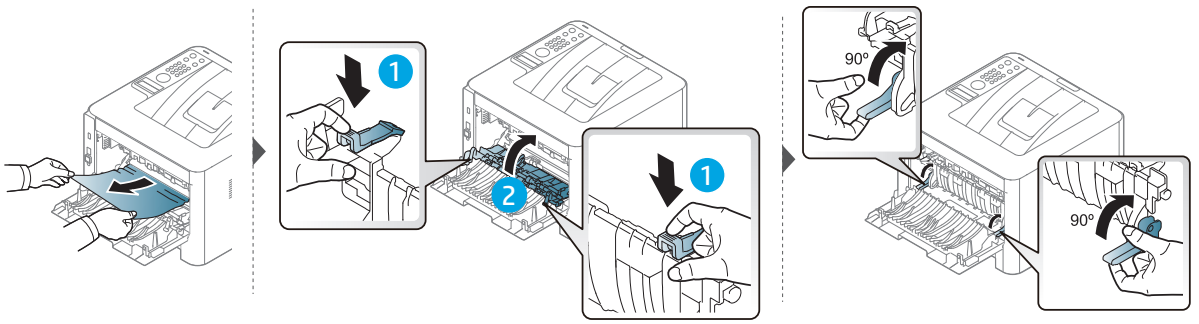
In the duplex unit area

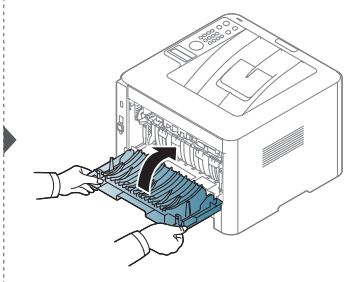




If you do not see the paper in this area, stop and go to next step:







Understanding the LEDs

The color of the LED indicates the machine's current behavior.

- Some LEDs may not be available depending on model or country (see "Control panel overview" on page 19).
- To resolve the error, look at the error message and its instructions from the troubleshooting part (see "Understanding display messages" on page 99).
- If the problem persists, call a service representative.

Status LED

LED	Status		Description
Status	Off		The machine is off-line.
	Green	On	The machine is on-line and can be used.
		Blinking	When the machine is receiving or printing data, the backlight blinks.
	Orange	On	The machine has stopped due to a major error.
		Blinking	• A minor error has occurred and the machine is waiting for the error to be cleared. Check the display message. When the problem is cleared, the machine resumes. • Small amount of toner is left in the cartridge. The estimated cartridge life[a] of toner is close. Prepare a new cartridge for replacement. You may temporarily increase the printing quality by redistributing the toner (see "Redistributing toner" on page 80). • The cover is opened. Close the cover. • There is no paper in the tray when receiving or printing data. Load paper in the tray. • A paper jam has occurred (see "Clearing paper jams" on page 93).

a.Estimated cartridge life means the expected or estimated toner cartridge life, which indicates the average capacity of print-outs and is designed pursuant to ISO/IEC 19752. The number of pages may be affected by operating environment, percentage of image area, printing interval, graphics, media and media size. Some amount of toner may remain in the cartridge even when orange LED is on and the printer stops printing.

Power LED

Status			Description
(Power)	White	On	The machine is in ready mode.
		Blinking	The machine is in power save mode.

Understanding display messages

Messages appear on the control panel display to indicate the machine's status or errors. Refer to the tables below to understand the messages' and their meaning, and correct the problem, if necessary.

- If a message is not in the table, reboot the power and try the printing job again. If the problem persists, call a service representative.
- When you call for service, provide the service representative with the contents of display message.
- Some messages may not appear on the display depending on the options or models.
- [error number] indicates the error number.
- [tray type] indicates the tray number.
- [media type] indicates the media type.
- [media size] indicates the media size.

Paper Jam-related messages

Message	Meaning	Suggested solutions
Paper jam in exit area	Paper has jammed in the exit area.	Clear the jam (see "In exit area" on page 96).
Paper jam inside of duplex	Paper has jammed during duplex printing. This is applicable only to machines with this feature.	Clear the jam (see "In the duplex unit area" on page 97).
Paper jam inside machine	Paper has jammed in inside the machine.	Clear the jam (see "Inside the machine" on page 95).
Paper jam in tray 2	Paper has jammed in the tray 2.	Clear the jam (see "In tray 2" on page 93).
Paper jam in tray 3	Paper has jammed in the optional tray (tray 3).	Clear the jam (see "In optional tray (Tray 3)" on page 94).
Paper jam in tray 1	Paper has jammed in the tray 1.	Clear the jam (see "In Tray 1" on page 93).

Toner-related messages

Message	Meaning	Suggested solutions
Install toner	A toner cartridge is not installed.	Reinstall the toner cartridge.
	A toner cartridge is not being detected	Reinstall the toner cartridge two or three times to confirm it is seated properly. If the problem persists, contact the service representatives.
	Not removed protective film from toner.	Remove the protective film from the toner cartridge.
Not Compatible Toner cartridge	The indicated toner cartridge is not suitable for your machine.	Install the corresponding toner cartridge with a HP-genuine cartridge (see "Replacing the toner cartridge" on page 81).
Prepare new cartridge	Small amount of toner is left in the indicated cartridge. The estimated cartridge life[a] of toner is close.	Prepare a new cartridge for a replacement. You may temporarily increase the printing quality by redistributing the toner (see "Redistributing toner" on page 80).
Replace new cartridge	A toner cartridge has reached its estimated cartridge life [a].	• You can choose **Stop** or **Continue** as shown on the control panel. If you select **Stop**, the printer stops printing. If you select **Continue**, the printer keeps printing but the printing quality cannot be guaranteed. • Replace the toner cartridge for the best print quality when this message appears. Using a cartridge beyond this stage can result in printing quality issues (see "Replacing the toner cartridge" on page 81).

a.Estimated cartridge life means the expected or estimated toner cartridge life, which indicates the average capacity of print-outs and is designed pursuant to ISO/IEC 19798 (see "Available supplies" on page 76). The number of pages may be affected by operating environment, percentage of image area, printing interval, media, percentage of image area, and media size. Some amount of toner may remain in the cartridge even when replace new cartridge appears and the machine stops printing.

HP does not recommend using a non-genuine HP toner cartridge such as refilled or remanufactured. HP cannot guarantee a non-genuine HP toner cartridge's quality. Service or repair required as a result of using non-genuine HP toner cartridges will not be covered under the machine warranty.

Imaging unit-related messages

Message	Meaning	Suggested solutions
Not Installed Imaging unit	An imaging unit is not installed.	Reinstall the imaging unit.
	An imaging unit is not being detected	Reinstall the imaging unit two or three times to confirm it is seated properly. If the problem persists, contact the service representatives.
	Not remove protective film from toner.	Remove the protective film from the imaging unit.
Not compatible Imaging unit	The imaging unit is not suitable for your machine.	Install the corresponding cartridge with a HP-genuine cartridge (see "Replacing the imaging unit" on page 82).
Prepare new Image unit	Small amount of toner is left in the imaging unit. The estimated cartridge life of toner is close.	Prepare a new imaging unit for a replacement.
Replace new Image unit	An imaging unit has reached its estimated cartridge life.	• You can choose **Stop** or **Continue** as shown on the control panel. If you select **Stop**, the printer stops printing. If you select **Continue**, the printer keeps printing but the printing quality cannot be guaranteed. • Replace the imaging unit for the best print quality when this message appears. Using a cartridge beyond this stage can result in printing quality issues (see "Replacing the imaging unit" on page 82). • If the machine stops printing, replace the imaging unit (see "Replacing the imaging unit" on page 82).

HP does not recommend using a non-genuine HP cartridge such as refilled or remanufactured. HP cannot guarantee a non-genuine HP cartridge's quality. Service or repair required as a result of using non-genuine HP cartridges will not be covered under the machine warranty.

Tray-related messages

Message	Meaning	Suggested solutions
Paper Empty **in** [tray number]	There is no paper in the indicated tray.	Load paper in the tray (see "Loading paper in the tray" on page 30).
Paper Low **in** [tray number]	There is low paper in the indicated tray.	Load paper in the tray (see "Loading paper in the tray" on page 30).

Network-related messages

Message	Meaning	Suggested solutions
Network Problem: **IP Conflict**	The IP address is used elsewhere.	Check the IP address or obtain a new IP address.
802.1x **Network Error**	Fail to authenticate.	Check the network authentication protocol. If the problem persists, contact your network administrator.

Misc. messages

Message	Meaning	Suggested solutions
Door Open **Close it**	The cover is not securely latched.	Close the cover until it locks into place.
Error [error number] **Install toner**	The toner cartridge is installed improperly, or the connector is polluted.	Reinstall the HP-genuine toner cartridge two or three times to confirm it is seated properly. If the problem persists, please call for service.
Error [error number] **Turn off then on**	The machine unit cannot be controlled.	Reboot the power and try the printing job again. If the problem persists, please call for service.
Error [error number] **Call for service**		
Not proper room **temp. Move set**	The machine is in a room with improper room temperature.	Move the machine to a room with proper room temperature.
Output bin Full **Remove paper**	The output tray is full.	Remove papers from the output tray, the machine resumes printing. If the problem persists, call for service.
Replace **Fuser Soon**	The life of the fuser unit will be expired soon.	Replace the fuser unit with a new one. If the problem persists, please call for service.
Replace new **Fuser unit**	The life of the fuser unit will be expired.	
• **Replace new** **Tray2 roller**	The life of the tray pick-up roller will expired soon.	Replace the tray pick-up roller with a new one. If the problem persists, please call for service.
• **Replace new** **Tray3 roller**	The life of the tray pick-up roller will expired.	

A “Low Toner” or “Very Low Toner” message displays in Supplies information report

Low Toner: The printer indicates when a toner cartridge level is low. Actual cartridge life remaining may vary. Consider having a replacement available to install when print quality is no longer acceptable. The cartridge does not need to be replaced now.

Continue printing with the current cartridge until redistributing the toner no longer yields acceptable print quality. To redistribute the toner, remove the toner cartridge from the printer and gently rock the cartridge back and forth about its horizontal axis. For graphical representation, see cartridge replacement instructions. Reinsert the toner cartridge into the printer and close the cover.

Very Low Toner: The printer indicates when the Toner cartridge level is very low. Actual cartridge life remaining may vary. Consider having a replacement available to install when print quality is no longer acceptable. The cartridge does not need to be replaced now unless the print quality is no longer acceptable.

Once an HP toner cartridge has reached **Very Low Toner**, HP’s Premium Protection Warranty on that toner cartridge has ended.

To the machine prints supplies information report:

1 Select ••• (**Menu**) > **System Setup** > **Report** > **Supplies Information** on the control panel.

2 Press **OK.**

The machine begins printing.

Paper feeding problems

Condition	Suggested solutions
Paper jams during printing.	Clear the paper jam.
Paper sticks together.	• Check the maximum paper capacity of the tray . • Make sure that you are using the correct type of paper. • Remove paper from the tray and flex or fan the paper. • Humid conditions may cause some paper to stick together.
Multiple sheets of paper do not feed.	Different types of paper may be stacked in the tray. Load paper of only one type, size, and weight.
Paper does not feed into the machine.	• Remove any obstructions from inside the machine. • Paper has not been loaded correctly. Remove paper from the tray and reload it correctly. • There is too much paper in the tray. Remove excess paper from the tray. • The paper is too thick. Use only paper that meets the specifications required by the machine.
The paper keeps jamming.	• There is too much paper in the tray. Remove excess paper from the tray. If you are printing on special materials, feed manually in the tray. • An incorrect type of paper is being used. Use only paper that meets the specifications required by the machine. • There may be debris inside the machine. Open the top cover and remove any debris.
Envelopes skew or fail to feed correctly.	Ensure that the paper guides are against both sides of the envelopes.

Power and cable connecting problems

Reboot the power. If the problem persists, please call for service.

Condition	Suggested solutions
The machine is not receiving power, or the connection cable between the computer and the machine is not connected properly.	1. Connect the machine to the electricity supply first. 2. Check the USB cable or network cable in the machine's rear. 3. Disconnect the USB cable or network cable in the machine's rear and then, reconnect it.

Solving other problems

Printing problems

Condition	Possible cause	Suggested solutions
The machine does not print.	The machine is not receiving power.	Check the power cord connections. Check the power switch and the power source.
	The machine is not selected as the default machine.	Select your machine as your default machine in Windows.
	Check the machine for the following: • The top cover is not closed. Close the top cover. • Paper is jammed. Clear the paper jam (see "Clearing paper jams" on page 93). • No paper is loaded. Load paper (see"Loading paper in the tray" on page 30). • The toner cartridge is not installed. Install the toner cartridge (see "Replacing the toner cartridge" on page 81). • Make sure the protect cover and sheets are removed from the toner cartridge (see "Replacing the toner cartridge" on page 81). If a system error occurs, contact your service representative.	
	The connection cable between the computer and the machine is not connected properly.	Disconnect the machine cable and reconnect it (see "Rear view" on page 18).
	The connection cable between the computer and the machine is defective.	If possible, attach the cable to another computer that is working properly and print a job. You can also try using a different machine cable.
	The port setting is incorrect.	Check the Windows printer settings to make sure that the print job is sent to the correct port. If the computer has more than one port, make sure that the machine is attached to the correct one.
	The machine may be configured incorrectly.	Check the **Printing Preferences** to ensure that all of the print settings are correct.

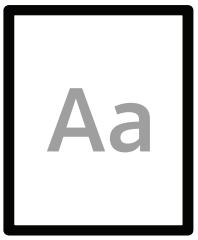
Condition	Possible cause	Suggested solutions
The machine does not print.	The printer driver may be incorrectly installed.	Uninstall and reinstall the machine's driver.
	The machine is malfunctioning.	Check the display message on the control panel to see if the machine is indicating a system error. Contact a service representative.
	The document size is so big that the hard disk space of the computer is insufficient to access the print job.	Get more hard disk space and print the document again.
	The output tray is full.	Once the paper is removed from the output tray, the machine resumes printing.
The machine selects print materials from the wrong paper source.	The paper option that was selected in the **Printing Preferences** may be incorrect.	For many software applications, the paper source selection is found under the **Paper** tab within the **Printing Preferences** (see "Opening printing preferences" on page 51). Select the correct paper source. See the printer driver help screen (see "Using help" on page 53).
A print job is extremely slow.	The job may be very complex.	Reduce the complexity of the page or try adjusting the print quality settings.
Half the page is blank.	The page orientation setting may be incorrect.	Change the page orientation in your application (see "Opening printing preferences" on page 51). See the printer driver help screen (see "Using help" on page 53).
	The paper size and the paper size settings do not match.	Ensure that the paper size in the printer driver settings matches the paper in the tray.Or, ensure that the paper size in the printer driver settings matches the paper selection in the software application settings you use (see "Opening printing preferences" on page 51).

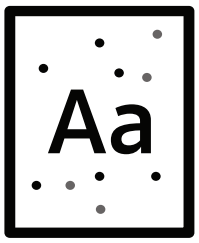
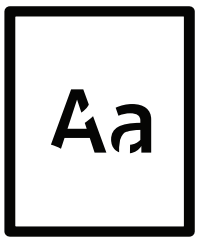
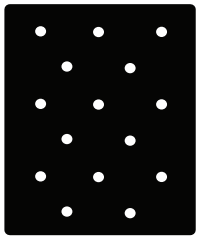
Condition	Possible cause	Suggested solutions
The machine prints, but the text is wrong, garbled, or incomplete.	The machine cable is loose or defective.	Disconnect the machine cable and reconnect. Try a print job that you have already printed successfully. If possible, attach the cable and the machine to another computer that you know works and try a print job. Finally, try a new machine cable.
	The wrong printer driver was selected.	Check the applicatinon's printer selection menu to ensure that your machine is selected.
	The software application is malfunctioning.	Try printing a job from another application.
	The operating system is malfunctioning.	Exit Windows and reboot the computer. Turn the machine off and back on again.
Pages print, but they are blank.	The toner cartridge is defective or out of toner.	Redistribute the toner, if necessary. If necessary, replace the toner cartridge. • See "Redistributing toner" on page 80. • See "Replacing the toner cartridge" on page 81.
	The file may have blank pages.	Check the file to ensure that it does not contain blank pages.
	Some parts, such as the controller or the board, may be defective.	Contact a service representative.
The machine does not print PDF files correctly. Some parts of graphics, text, or illustrations are missing.	Incompatibility between the PDF file and the Acrobat products.	Printing the PDF file as an image may enable the file to print. Turn on **Print As Image** from the Acrobat printing options. It will take longer to print when you print a PDF file as an image.
The print quality of photos is not good. Images are not clear.	The resolution of the photo is very low.	Reduce the photo size. If you increase the photo size in the software application, the resolution will be reduced.

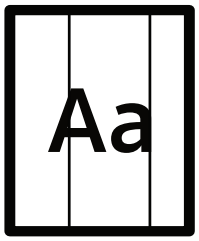
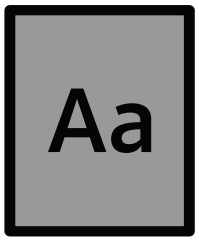
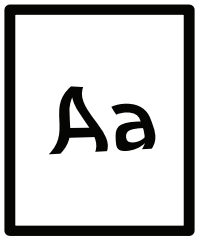
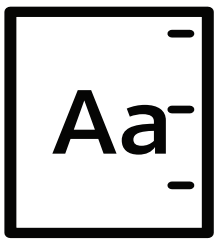
Condition	Possible cause	Suggested solutions
Before printing, the machine emits vapor near the output tray.	Using damp/wet paper can cause vapor [white smoke] during printing.	This is not a problem, just keep printing. If you are bothered by the smoke [vapor], then replace the paper with fresh paper from an unopened ream.
The machine does not print special-sized paper, such as billing paper.	Paper size and paper size setting do not match.	Set the correct paper size in the **Custom** in **Paper** tab in **Printing Preferences (see** "Opening printing preferences" on page 51).
The printed billing paper is curled.	The paper type setting does not match.	Change the printer option and try again. Go to **Printing Preferences** , click **Paper** tab, and set type to **Heavy 90-120 g** (see "Opening printing preferences" on page 51).

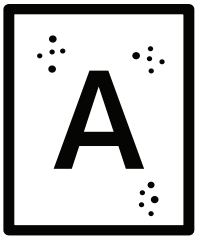
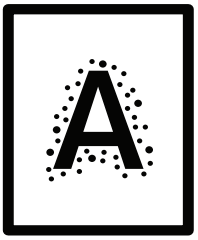
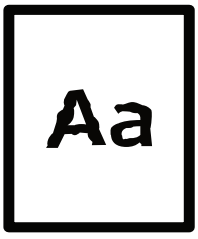
Printing quality problems

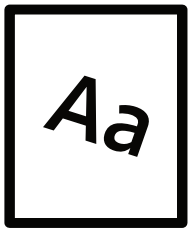
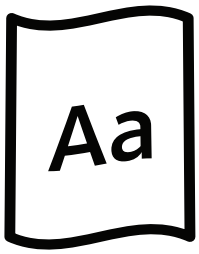
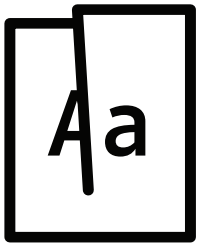
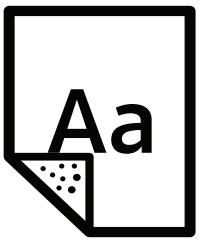
If the inside of the machine is dirty or paper has been loaded improperly, there might be a reduction in print quality. See the table below to clear the problem.

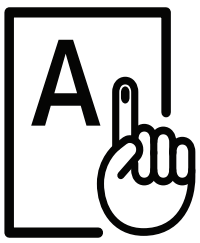
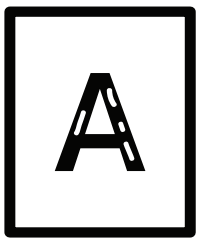
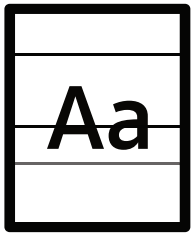
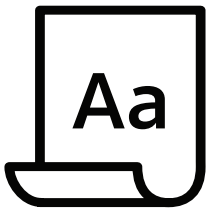
Condition	Suggested Solutions
Light or faded print 	• If a vertical white streak or faded area appears on the page, the toner supply is low. Install a new toner cartridge (see "Replacing the toner cartridge" on page 81). • The paper may not meet paper specifications; for example, the paper may be too moist or rough. • If the entire page is light, the print resolution setting is too low or the toner save mode is on. Adjust the print resolution and turn the toner save mode off. See the help screen of the printer driver. • A combination of faded or smeared defects may indicate that the toner cartridge needs cleaning. Clean the inside of your machine (see "Cleaning the machine" on page 88). • The surface of the LSU part inside the machine may be dirty. Clean the inside of your machine (see "Cleaning the machine" on page 88). If these steps do not correct the problem, contact a service representative.

Condition	Suggested Solutions
The top half of the paper is printed lighter than the rest of the paper 	The toner might not adhere properly to this type of paper. • Change the printer option and try again. Go to **Printing Preferences** , click the **Paper** tab, and set the paper type to **Recycled** (see "Opening printing preferences" on page 51).
Toner specks  	• The paper may not meet specifications; for example, the paper may be too moist or rough. • The transfer roller may be dirty. Clean the inside of your machine (see "Cleaning the machine" on page 88). • The paper path may need cleaning. Contact a service representative (see "Cleaning the machine" on page 88).
Dropouts  	If faded areas, generally rounded, occur randomly on the page: • A single sheet of paper may be defective. Try reprinting the job. • The moisture content of the paper is uneven or the paper has moist spots on its surface. Try a different brand of paper. • The paper lot is bad. The manufacturing processes can cause some areas to reject toner. Try a different kind or brand of paper. • Change the printer option and try again. Go to **Printing Preferences**, click the **Paper** tab, and set type to **Heavy 90-120 g** (see "Opening printing preferences" on page 51). If these steps do not correct the problem, contact a service representative.
White Spots 	If white spots appear on the page: • The paper is too rough and a lot of dirt from paper falls to the inner components within the machine, so the transfer roller may be dirty. Clean the inside of your machine (see "Cleaning the machine" on page 88). • The paper path may need cleaning. Clean the inside of your machine (see "Cleaning the machine" on page 88). If these steps do not correct the problem, contact a service representative.

Condition	Suggested Solutions
Vertical lines 	If black vertical streaks appear on the page: • The surface (drum part) of the toner cartridge inside the machine has probably been scratched. Remove the toner cartridge and install a new one (see "Replacing the toner cartridge" on page 81). If white vertical streaks appear on the page: • The surface of the LSU part inside the machine may be dirty. Clean the inside of your machine (see "Cleaning the machine" on page 88). If these steps do not correct the problem, contact a service representative.
Black background 	If the amount of background shading becomes unacceptable: • Change to a lighter weight paper. • Check the environmental conditions: very dry conditions or a high level of humidity (higher than 80% RH) can increase the amount of background shading. • Remove the old toner cartridge and install a new one (see "Replacing the toner cartridge" on page 81). • Thoroughly redistribute the toner (see "Redistributing toner" on page 80).
Toner smear 	• Clean the inside of the machine (see "Cleaning the machine" on page 88). • Check the paper type and quality. • Remove the toner cartridge and install a new one (see "Replacing the toner cartridge" on page 81).
Vertical repetitive defects 	If marks repeatedly appear on the printed side of the page at even intervals: • The toner cartridge may be damaged. If you still have the same problem, remove the toner cartridge and, install a new one (see "Replacing the toner cartridge" on page 81). • Parts of the machine may 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. • The fusing assembly may be damaged. Contact a service representative.

Condition	Suggested Solutions
Background scatter 	Background scatter results from bits of toner randomly distributed on the printed page. • The paper may be too damp. Try printing with a different batch of paper. Do not open packages of paper until necessary so that the paper does not absorb too much moisture. • If background scatter occurs on an envelope, change the printing layout to avoid printing over areas that have overlapping seams on the reverse side. Printing on seams can cause problems. Or select envelope size from the **Printing Preferences** window (see "Opening printing preferences" on page 51). • If background scatter covers the entire surface area of a printed page, adjust the print resolution through your software application or in **Printing Preferences (see** "Opening printing preferences" on page 51). Ensure the correct paper type is selected. For example: If **Heavy 90-120 g** is selected, but **Plain** actually used, an overcharging can occur causing this copy quality problem. • If you are using a new toner cartridge, redistribute the toner first (see "Redistributing toner" on page 80).
Toner particles are around bold characters or pictures 	The toner might not adhere properly to this type of paper. • Change the printer option and try again. Go to **Printing Preferences**, click the **Paper** tab, and set the paper type to **Recycled** (see "Opening printing preferences" on page 51). • Ensure the correct paper type is selected. For example: If **Heavy 90-120 g** is selected, but **Plain** actually used, an overcharging can occur causing this copy quality problem.
Misformed characters 	• If characters are improperly formed and producing hollow images, the paper stock may be too slick. Try different paper.

Condition	Suggested Solutions
Page skew  	• Ensure that the paper is loaded properly. • Check the paper type and quality. • Ensure that the guides are not too tight or too loose against the paper stack.
Curl or wave  	• Ensure that the paper is loaded properly. • Check the paper type and quality. Both high temperature and humidity can cause paper curl. • Turn the stack of paper over in the tray. Also try rotating the paper 180° in the tray.
Wrinkles or creases  	• Ensure that the paper is loaded properly. • Check the paper type and quality. • Turn the stack of paper over in the tray. Also try rotating the paper 180° in the tray.
Back of printouts are dirty  	• Check for leaking toner. Clean the inside of the machine (see "Cleaning the machine" on page 88).
Solid color or black pages 	• The toner cartridge may not be installed properly. Remove the cartridge and reinsert it. • The toner cartridge may be defective. Remove the toner cartridge and install a new one (see "Replacing the toner cartridge" on page 81). • The machine may require repairing. Contact a service representative.

Condition	Suggested Solutions
Loose toner 	• Clean the inside of the machine (see "Cleaning the machine" on page 88). • Check the paper type and quality. • Remove the toner cartridge and then, install a new one (see "Replacing the toner cartridge" on page 81). If the problem persists, the machine may require repair. Contact a service representative.
Character voids 	Character voids are white areas within parts of characters that should be solid black: • You may be printing on the wrong surface of the paper. Remove the paper and turn it around. • The paper may not meet paper specifications.
Horizontal stripes 	If horizontally aligned black streaks or smears appear: • The toner cartridge may be installed improperly. Remove the cartridge and reinsert it. • The toner cartridge may be defective. Remove the toner cartridge and install a new one (see "Replacing the toner cartridge" on page 81). If the problem persists, the machine may require repairing. Contact a service representative.
Curl 	If the printed paper is curled or paper does not feed into the machine: • Turn the stack of paper over in the tray. Also try rotating the paper 180° in the tray. • Change the printer's paper option and try again. Go to **Printing Preferences**, click the **Paper** tab, and set type to **Light 60-69 g** (see "Opening printing preferences" on page 51).
• An unknown image repetitively appears on a few sheets • Loose toner • Light print or contamination occurs	Your machine is probably being used at an altitude of 1,000 m (3,281 ft) or above.The high altitude may affect the print quality, such as loose toner or light imaging. Change the altitude setting for your machine (See "Altitude adjustment" on page 27).

Operating system problems

Common Windows problems

Condition	Suggested solutions
“File in Use” message appears during installation.	Exit all software applications. Remove all software from the startup group, then restart Windows. Reinstall the printer driver.
“General Protection Fault”, “Exception OE”, “Spool 32”, or “Illegal Operation” messages appear.	Close all other applications, reboot Windows and try printing again.
“Fail To Print”, “A printer timeout error occurred” message appear.	These messages may appear during printing. Just keep waiting until the machine finishes printing. If the message appears in ready mode or after printing has completed, check the connection and/or whether an error has occurred.
Machine information is not displayed when you click the device in the **Devices and Printers**.	Check the **Printer properties**. Click the **Ports** tab. (**Control Panel** > **Devices and Printers** > Right-click on your printer icon and select **Printer properties**) If the port is set to File or LPT, uncheck them and select TCP/IP, USB, or WSD.

Refer to the Microsoft Windows User’s Guide that came with your computer for further information on Windows error messages.

Appendix

This chapter provides product specifications and information concerning applicable regulations.

- General specifications 117
- Print media specifications 118
- System requirements 120

General specifications

The specification values listed below are subject to change without notice. See www.hp.com/support/laser408 for possible changes in information.

Items		Description
Dimension	Width x Depth x Height	366 x 365.6 x 262.5 mm (14.4 x 14.39 x 10.33 inches)
Weight (Machine with supplies)		10.09 kg (22.24 lbs)
Temperature	Operation	15 to 32 °C (59 to 90°F)
	Storage (packed)	-20 to 40 °C (-4 to 104 °F)
Humidity	Operation	10 to 80% RH
	Storage (packed)	10 to 90% RH
Power rating[a]	110 volt models	AC 110 - 127 V
	220 volt models	AC 220 - 240 V

a.See the rating label on the machine for the correct voltage (V), frequency (hertz) and of current (A) for your machine.

Print media specifications

Type	Size	Dimensions	Print media weight/Capacity[a]	
			Tray 2/ Tray 3	Tray 1
Plain paper	Letter	216 x 279 mm (8.5 x 11 inches)	70 to 85 g/m^2 (19 to 24 lbs bond) • 250 sheets of 80 g/m^2 (20 lbs bond)	70 to 85 g/m^2 (19 to 24 lbs bond) • 50 sheets of 80 g/m^2 (20 lbs bond)
	Legal	216 x 356 mm (8.5 x 14 inches)		
	Oficio 8.5 x 13	216 x 330 mm (8.5 x 13 inches)		
	A4	210 x 297 mm (8.26 x 11.69 inches)		
	Oficio 216 x 343 mm	216 x 343 mm (8.5 x 13.5 inches)		
	Executive	184 x 267 mm (7.25 x 10.5 inches)		
	A5	148 x 210 mm (5.82 x 8.26 inches)		
	A6	105 x 148 mm (4.13 x 5.82 inches)	• 150 sheets of 75 g/m^2 (20 lbs bond)	
	3 x 5	76 x 127 mm (3.00 x 5.00 inches)	Not available in tray 2/optional tray (Tray 3).	
	4 x 6	102 x 152 mm (4.00 x 6.00 inches)	Not available in tray 2/optional tray (Tray 3).	
Envelope	Envelope Monarch	98 x 191 mm (3.87 x 7.5 inches)	Not available in tray 2/optional tray (Tray 3).	75 to 90 g/m^2 (20 to 24 lbs bond)
	Envelope #10	105 x 241 mm (4.12 x 9.5 inches)		
	Envelope DL	110 x 220 mm (4.33 x 8.66 inches)		
	Envelope C5	162 x 229 mm (6.37 x 9.01 inches)		
	Envelope C6	114 x 162 mm (4.48 x 6.38 inches)		
	Envelope #9	98 x 225 mm (3.87 x 8.87 inches)		
Mid-Weight 96-110 g	Refer to the Plain paper section		86 to 105 g/m^2 (23 to 28 lbs bond)	86 to 105 g/m^2 (23 to 28 lbs bond)

Type	Size	Dimensions	Print media weight/Capacity[a]	
			Tray 2/ Tray 3	Tray 1
Cardstock 176-220 g	Refer to the Plain paper section		Not available in tray 2/optional tray (Tray 3).	164 to 220 g/m^2 (44 to 58 lbs bond)
HP LaserJet 90 g	Letter, Legal, Oficio 8.5 x 13, Oficio 216 x 343 mm, A4, JIS B5, Executive, A5, Statement, A6		Not available in tray 2/optional tray (Tray 3).	75 to 85 g/m^2 (20 to 24 lbs bond)
Colored	Letter, Legal, Oficio 8.5 x 13, Oficio 216 x 343 mm, A4, JIS B5, Executive, A5, Statement, A6		Not available in tray 2/optional tray (Tray 3).	75 to 85 g/m^2 (20 to 24 lbs bond)
Preprinted	Refer to the Plain and Envelope paper section		75 to 85 g/m^2 (20 to 24 lbs bond)	75 to 85 g/m^2 (20 to 24 lbs bond)
Intermediate 85-95 g	Letter, Legal, Oficio 8.5 x 13, Oficio 216 x 343 mm, A4, JIS B5, Executive, A5, Statement, A6		70 to 85 g/m^2 (19 to 24 lbs bond) • 250 sheets of 80 g/m^2 (20 lbs bond)	70 to 85 g/m^2 (19 to 24 lbs bond) • 50 sheets of 80 g/m^2 (20 lbs bond)
Light 60-74 g	Letter, Legal, Oficio 8.5 x 13, Oficio 216 x 343 mm, A4, JIS B5, Executive, A5, Statement, A6		60 to 70 g/m^2 (16 to 19 lbs bond)	60 to 70 g/m^2 (16 to 19 lbs bond)
Recycled	Letter, Legal, Oficio 8.5 x 13, Oficio 216 x 343 mm, A4, JIS B5, Executive, A5, Statement, A6		70 to 85 g/m^2 (19 to 24 lbs bond) • 250 sheets of 80 g/m^2 (20 lbs bond)	70 to 85 g/m^2 (19 to 24 lbs bond) • 50 sheets of 80 g/m^2 (20 lbs bond)
Labels[b]	Letter, Legal, Oficio 8.5 x 13, Oficio 216 x 343 mm, A4, JIS B5, Executive, A5, Statement, A6		Not available in tray 2/optional tray (Tray 3).	120 to 150 g/m^2 (32 to 40 lbs bond)
Letterhead	Letter, Legal, Oficio 8.5 x 13, Oficio 216 x 343 mm, A4, JIS B5, Executive, A5, Statement, A6		70 to 85 g/m^2 (19 to 24 lbs bond) • 250 sheets of 80 g/m^2 (20 lbs bond)	70 to 85 g/m^2 (19 to 24 lbs bond) • 50 sheets of 80 g/m^2 (20 lbs bond)
Extra Heavy 121-163 g	Refer to the Plain paper section		121 to 163 g/m^2 (32 to 43 lbs bond)	121 to 163 g/m^2 (32 to 43 lbs bond)
Bond	Letter, Legal, Oficio 8.5 x 13, Oficio 216 x 343 mm, A4, JIS B5, Executive, A5, Statement, A6		105 to 120 g/m^2 (28 to 32 lbs bond)	105 to 120 g/m^2 (28 to 32 lbs bond)
Minimum size (custom)		• **Tray 1:** 76 x 127 mm (2.99 x 5 inches) • **Tray1, Tray2, Tray 3:** 98 x 148.5 mm (3.86 x 5.85 inches)	60 to 163 g/m^2 (16 to 43 lbs bond)	
Maximum size (custom)		216 x 356 mm (8.5 x 14 inches)		

a.Maximum capacity may differ depending on media weight, thickness, and environmental conditions.
b.The smoothness of the labels used in this machine is 100 to 250 (sheffield). This means the numeric level of smoothness.

System requirements

Printer software are occasionally updated due to release of new operating system and etc. If needed, download the latest version from the HP website (www.hp.com/support/laser408).

Microsoft® Windows®

Windows 7, 32-bit and 64-bit	The HP printer-specific print driver is installed for this operating system as part of the software installation.	
Windows 8, 32-bit and 64-bit	The HP printer-specific print driver is installed for this operating system as part of the software installation.	
Windows 8.1, 32-bit and 64-bit	The HP V4 printer-specific print driver is installed for this operating system as part of the software installation.	
Windows 10, 32-bit and 64-bit	The HP V4 printer-specific print driver is installed for this operating system as part of the software installation.	
Windows Server 2008 R2, 64-bit	The HP PCLm.S printer-specific print driver is available for download from the printer-support website. Download the driver, and then use the Microsoft Add Printer tool to install it.	Microsoft retired mainstream support for Windows Server 2008 in January 2015. HP will continue to provide best effort support for the discontinued Server 2008 operating system.
Windows Server 2008 R2, SP1, 64-bit	The HP printer-specific print driver is installed for this operating system as part of the software installation.	
Windows Server 2012	The HP printer-specific print driver is installed for this operating system as part of the software installation.	
Windows Server 2012 R2	The HP printer-specific print driver is installed for this operating system as part of the software installation.	
Windows Server 2016, 64-bit	The HP printer-specific print driver is installed for this operating system as part of the software installation.	

Glossary

The following glossary helps you get familiar with the product by understanding the terminologies commonly used with printing as well as mentioned in this user's guide.

802.11

802.11 is a set of standards for wireless local area network (WLAN) communication, developed by the IEEE LAN/MAN Standards Committee (IEEE 802).

802.11b/g/n

802.11b/g/n can share same hardware and use the 2.4 GHz band. 802.11b supports bandwidth up to 11 Mbps, 802.11n supports bandwidth up to 150 Mbps. 802.11b/g/n devices may occasionally suffer interference from microwave ovens, cordless telephones, and Bluetooth devices.

Access point

Access Point or Wireless Access Point (AP or WAP) is a device that connects wireless communication devices together on wireless local area networks (WLAN), and acts as a central transmitter and receiver of WLAN radio signals.

ADF

An Automatic Document Feeder (ADF) is a scanning unit that will automatically feed an original sheet of paper so that the machine can scan some amount of the paper at once.

AppleTalk

AppleTalk is a proprietary suite of protocols developed by Apple, Inc for computer networking. It was included in the original Mac (1984) and is now deprecated by Apple in favor of TCP/IP networking.

BIT Depth

A computer graphics term describing the number of bits used to represent the color of a single pixel in a bitmapped image. Higher color depth gives a broader range of distinct colors. As the number of bits increases, the number of possible colors becomes impractically large for a color map. 1-bit color is commonly called as monochrome or black and white.

BMP

A bitmapped graphics format used internally by the Microsoft Windows graphics subsystem (GDI), and used commonly as a simple graphics file format on that platform.

BOOTP

Bootstrap Protocol. A network protocol used by a network client to obtain its IP address automatically. This is usually done in the bootstrap process of computers or operating systems running on them. The BOOTP servers assign the IP address from a pool of addresses to each client. BOOTP enables 'diskless workstation' computers to obtain an IP address prior to loading any advanced operating system.

CCD

Charge Coupled Device (CCD) is a hardware which enables the scan job. CCD Locking mechanism is also used to hold the CCD module to prevent any damage when you move the machine.

Collation

Collation is a process of printing a multiple-copy job in sets. When collation is selected, the device prints an entire set before printing additional copies.

Control Panel

A control panel is a flat, typically vertical, area where control or monitoring instruments are displayed. They are typically found in front of the machine.

Coverage

It is the printing term used for a toner usage measurement on printing. For example, 5% coverage means that an A4 sided paper has about 5% image or text on it. So, if the paper or original has complicated images or lots of text on it, the coverage will be higher and at the same time, a toner usage will be as much as the coverage.

CSV

Comma Separated Values (CSV). A type of file format, CSV is used to exchange data between disparate applications. The file format, as it is used in Microsoft Excel, has become a de facto standard throughout the industry, even among non-Microsoft platforms.

DADF

A Duplex Automatic Document Feeder (DADF) is a scanning unit that will automatically feed and turn over an original sheet of paper so that the machine can scan on both sides of the paper.

Default

The value or setting that is in effect when taking a printer out of its box state, reset, or initialized.

DHCP

A Dynamic Host Configuration Protocol (DHCP) is a client-server networking protocol. A DHCP server provides configuration parameters specific to the DHCP client host requesting, generally, information required by the client host to participate on an IP network. DHCP also provides a mechanism for allocation of IP addresses to client hosts.

DIMM

Dual Inline Memory Module (DIMM), a small circuit board that holds memory. DIMM stores all the data within the machine like printing data, received fax data.

DLNA

The Digital Living Network Alliance (DLNA) is a standard that allows devices on a home network to share information with each other across the network.

DNS

The Domain Name Server (DNS) is a system that stores information associated with domain names in a distributed database on networks, such as the Internet.

Dot Matrix Printer

A dot matrix printer refers to a type of computer printer with a print head that runs back and forth on the page and prints by impact, striking an ink-soaked cloth ribbon against the paper, much like a typewriter.

DPI

Dots Per Inch (DPI) is a measurement of resolution that is used for scanning and printing. Generally, higher DPI results in a higher resolution, more visible detail in the image, and a larger file size.

DRPD

Distinctive Ring Pattern Detection. Distinctive Ring is a telephone company service which enables a user to use a single telephone line to answer several different telephone numbers.

Duplex

A mechanism that will automatically turn over a sheet of paper so that the machine can print (or scan) on both sides of the paper. A printer equipped with a Duplex Unit can print on both sides of paper during one print cycle.

Duty Cycle

Duty cycle is the page quantity which does not affect printer performance for a month. Generally the printer has the lifespan limitation such as pages per year. The lifespan means the average capacity of print-outs, usually within the warranty period. For example, if the duty cycle is 48,000 pages per month assuming 20 working days, a printer limits 2,400 pages a day.

ECM

Error Correction Mode (ECM) is an optional transmission mode built into Class 1 fax machines or fax modems. It automatically detects and corrects errors in the fax transmission process that are sometimes caused by telephone line noise.

Emulation

Emulation is a technique of one machine obtaining the same results as another.
An emulator duplicates the functions of one system with a different system, so that the second system behaves like the first system. Emulation focuses on exact reproduction of external behavior, which is in contrast to

simulation, which concerns an abstract model of the system being simulated, often considering its internal state.

Ethernet

Ethernet is a frame-based computer networking technology for local area networks (LANs). It defines wiring and signaling for the physical layer, and frame formats and protocols for the media access control (MAC)/data link layer of the OSI model. Ethernet is mostly standardized as IEEE 802.3. It has become the most widespread LAN technology in use during the 1990s to the present.

EtherTalk

A suite of protocols developed by Apple Computer for computer networking. It was included in the original Mac (1984) and is now deprecated by Apple in favor of TCP/IP networking.

FDI

Foreign Device Interface (FDI) is a card installed inside the machine to allow a third party device such as a coin operated device or a card reader. Those devices allow the pay-for-print service on your machine.

FTP

A File Transfer Protocol (FTP) is a commonly used protocol for exchanging files over any network that supports the TCP/IP protocol (such as the Internet or an intranet).

Fuser Unit

The part of a laser printer that fuses the toner onto the print media. It consists of a heat roller and a pressure roller. After toner is transferred onto the paper, the fuser unit applies heat and pressure to ensure that the toner stays on the paper permanently, which is why paper is warm when it comes out of a laser printer.

Gateway

A connection between computer networks, or between a computer network and a telephone line. It is very popular, as it is a computer or a network that allows access to another computer or network.

Grayscale

A shade of gray that represent light and dark portions of an image when color images are converted to grayscale; colors are represented by various shades of gray.

Halftone

An image type that simulates grayscale by varying the number of dots. Highly colored areas consist of a large number of dots, while lighter areas consist of a smaller number of dots.

Mass storage device (HDD)

Mass storage device (HDD), commonly referred to as a hard drive or hard disk, is a non-volatile storage device which stores digitally-encoded data on rapidly rotating platters with magnetic surfaces.

IEEE

The Institute of Electrical and Electronics Engineers (IEEE) is an international non-profit, professional organization for the advancement of technology related to electricity.

IEEE 1284

The 1284 parallel port standard was developed by the Institute of Electrical and Electronics Engineers (IEEE). The term "1284-B" refers to a specific connector type on the end of the parallel cable that attaches to the peripheral (for example, a printer).

Intranet

A private network that uses Internet Protocols, network connectivity, and possibly the public telecommunication system to securely share part of an organization's information or operations with its employees. Sometimes the term refers only to the most visible service, the internal website.

IP address

An Internet Protocol (IP) address is a unique number that devices use in order to identify and communicate with each other on a network utilizing the Internet Protocol standard.

IPM

The Images Per Minute (IPM) is a way of measuring the speed of a printer. An IPM rate indicates the number of single-sided sheets a printer can complete within one minute.

IPP

The Internet Printing Protocol (IPP) defines a standard protocol for printing as well as managing print jobs, media size, resolution, and so forth. IPP can be used locally or over the Internet to hundreds of printers, and also supports access control, authentication, and encryption, making it a much more capable and secure printing solution than older ones.

IPX/SPX

IPX/SPX stands for Internet Packet Exchange/Sequenced Packet Exchange. It is a networking protocol used by the Novell NetWare operating systems. IPX and SPX both provide connection services similar to TCP/IP, with the IPX protocol having similarities to IP, and SPX having similarities to TCP. IPX/SPX was primarily designed for local area networks (LANs), and is a very efficient protocol for this purpose (typically its performance exceeds that of TCP/IP on a LAN).

ISO

The International Organization for Standardization (ISO) is an international standard-setting body composed of representatives from national standards bodies. It produces world-wide industrial and commercial standards.

ITU-T

The International Telecommunication Union is an international organization established to standardize and regulate international radio and telecommunications. Its main tasks include standardization, allocation of the radio spectrum, and organizing interconnection arrangements between different countries to allow international phone calls. A -T out of ITU-T indicates telecommunication.

ITU-T No. 1 chart

Standardized test chart published by ITU-T for document facsimile transmissions.

JBIG

Joint Bi-level Image Experts Group (JBIG) is an image compression standard with no loss of accuracy or quality, which was designed for compression of binary images, particularly for faxes, but can also be used on other images.

JPEG

Joint Photographic Experts Group (JPEG) is a most commonly used standard method of lossy compression for photographic images. It is the format used for storing and transmitting photographs on the World Wide Web.

LDAP

The Lightweight Directory Access Protocol (LDAP) is a networking protocol for querying and modifying directory services running over TCP/IP.

LED

A Light-Emitting Diode (LED) is a semiconductor device that indicates the status of a machine.

MAC address

Media Access Control (MAC) address is a unique identifier associated with a network adapter. MAC address is a unique 48-bit identifier usually written as 12 hexadecimal characters grouped in pairs (e. g., 00-00-0c-34-11-4e). This address is usually hard-coded into a Network Interface Card (NIC) by its manufacturer, and used as an aid for routers trying to locate machines on large networks.

MFP

Multi Function Peripheral (MFP) is an office machine that includes the following functionality in one physical body, so as to have a printer, a copier, a fax, a scanner and etc.

MH

Modified Huffman (MH) is a compression method for decreasing the amount of data that needs to be transmitted between the fax machines to transfer the image recommended by ITU-T T.4. MH is a codebook-based run-length encoding scheme optimized to efficiently compress white space. As most faxes consist mostly of white space, this minimizes the transmission time of most faxes.

MMR

Modified Modified READ (MMR) is a compression method recommended by ITU-T T.6.

Modem

A device that modulates a carrier signal to encode digital information, and also demodulates such a carrier signal to decode transmitted information.

MR

Modified Read (MR) is a compression method recommended by ITU-T T.4. MR encodes the first scanned line using MH. The next line is compared to the first, the differences determined, and then the differences are encoded and transmitted.

NetWare

A network operating system developed by Novell, Inc. It initially used cooperative multitasking to run various services on a PC, and the network protocols were based on the archetypal Xerox XNS stack. Today NetWare supports TCP/IP as well as IPX/SPX.

OPC

Organic Photo Conductor (OPC) is a mechanism that makes a virtual image for print using a laser beam emitted from a laser printer, and it is usually green or rust colored and has a cylinder shape.
An imaging unit containing a drum slowly wears the drum surface by its usage in the printer, and it should be replaced appropriately since it gets worn from contact with the cartridge development brush, cleaning mechanism, and paper.

Originals

The first example of something, such as a document, photograph or text, etc, which is copied, reproduced or translated to produce others, but which is not itself copied or derived from something else.

OSI

Open Systems Interconnection (OSI) is a model developed by the International Organization for Standardization (ISO) for communications. OSI offers a standard, modular approach to network design that divides the required set of complex functions into manageable, self-contained, functional layers. The layers are, from top to bottom, Application, Presentation, Session, Transport, Network, Data Link and Physical.

PABX

A private automatic branch exchange (PABX) is an automatic telephone switching system within a private enterprise.

PCL

Printer Command Language (PCL) is a Page Description Language (PDL) developed by HP as a printer protocol and has become an industry standard. Originally developed for early inkjet printers, PCL has been released in varying levels for thermal, dot matrix printer, and laser printers.

PDF

Portable Document Format (PDF) is a proprietary file format developed by Adobe Systems for representing two dimensional documents in a device independent and resolution independent format.

PostScript

PostScript (PS) is a page description language and programming language used primarily in the electronic and desktop publishing areas. - that is run in an interpreter to generate an image.

Printer Driver

A program used to send commands and transfer data from the computer to the printer.

Print Media

The media like paper, envelopes, labels, and transparencies which can be used in a printer, a scanner, a fax or, a copier.

PPM

Pages Per Minute (PPM) is a method of measurement for determining how fast a printer works, meaning the number of pages a printer can produce in one minute.

PRN file

An interface for a device driver, this allows software to interact with the device driver using standard input/output system calls, which simplifies many tasks.

Protocol

A convention or standard that controls or enables the connection, communication, and data transfer between two computing endpoints.

PS

See PostScript.

PSTN

The Public-Switched Telephone Network (PSTN) is the network of the world's public circuit-switched telephone networks which, on industrial premises, is usually routed through the switchboard.

RADIUS

Remote Authentication Dial In User Service (RADIUS) is a protocol for remote user authentication and accounting. RADIUS enables centralized management of authentication data such as usernames and passwords using an AAA (authentication, authorization, and accounting) concept to manage network access.

Resolution

The sharpness of an image, measured in Dots Per Inch (DPI). The higher the dpi, the greater the resolution.

SMB

Server Message Block (SMB) is a network protocol mainly applied to share files, printers, serial ports, and miscellaneous communications between nodes on a network. It also provides an authenticated Inter-process communication mechanism.

SMTP

Simple Mail Transfer Protocol (SMTP) is the standard for e-mail transmissions across the Internet. SMTP is a relatively simple, text-based protocol, where one or more recipients of a message are specified, and then the

message text is transferred. It is a client-server protocol, where the client transmits an email message to the server.

SSID

Service Set Identifier (SSID) is a name of a wireless local area network (WLAN). All wireless devices in a WLAN use the same SSID in order to communicate with each other. The SSIDs are case-sensitive and have a maximum length of 32 characters.

Subnet Mask

The subnet mask is used in conjunction with the network address to determine which part of the address is the network address and which part is the host address.

TCP/IP

The Transmission Control Protocol (TCP) and the Internet Protocol (IP); the set of communications protocols that implement the protocol stack on which the Internet and most commercial networks run.

TCR

Transmission Confirmation Report (TCR) provides details of each transmission such as job status, transmission result and number of pages sent. This report can be set to print after each job or only after failed transmissions.

TIFF

Tagged Image File Format (TIFF) is a variable-resolution bitmapped image format. TIFF describes image data that typically come from scanners. TIFF images make use of tags, keywords defining the characteristics of the image that is included in the file. This flexible and platform-independent format can be used for pictures that have been made by various image processing applications.

Toner Cartridge

A kind of bottle or container used in a machine like a printer which contains toner. Toner is a powder used in laser printers and photocopiers, which forms the text and images on the printed paper. Toner can be fused by by a combination of heat/pressure from the fuser, causing it to bind to the fibers in the paper.

TWAIN

An industry standard for scanners and software. By using a TWAIN-compliant scanner with a TWAIN-compliant program, a scan can be initiated from within the program. It is an image capture API for Microsoft Windows and Apple Mac operating systems.

UNC Path

Uniform Naming Convention (UNC) is a standard way to access network shares in Window NT and other Microsoft products. The format of a UNC path is: \\<servername>\<sharename>\<Additional directory>

URL

Uniform Resource Locator (URL) is the global address of documents and resources on the Internet. The first part of the address indicates what protocol to use, the second part specifies the IP address or the domain name where the resource is located.

USB

Universal Serial Bus (USB) is a standard that was developed by the USB Implementers Forum, Inc., to connect computers and peripherals. Unlike the parallel port, USB is designed to concurrently connect a single computer USB port to multiple peripherals.

Watermark

A watermark is a recognizable image or pattern in paper that appears lighter when viewed by transmitted light. Watermarks were first introduced in Bologna, Italy in 1282; they have been used by papermakers to identify their product, and also on postage stamps, currency, and other government documents to discourage counterfeiting.

WEP

Wired Equivalent Privacy (WEP) is a security protocol specified in IEEE 802.11 to provide the same level of security as that of a wired LAN. WEP provides security by encrypting data over radio so that it is protected as it is transmitted from one end point to another.

WIA

Windows Imaging Architecture (WIA) is an imaging architecture that is originally introduced in Windows Me and Windows XP. A scan can be initiated from within these operating systems by using a WIA-compliant scanner.

WPA

Wi-Fi Protected Access (WPA) is a class of systems to secure wireless (Wi-Fi) computer networks, which was created to improve upon the security features of WEP.

WPA-PSK

WPA-PSK (WPA Pre-Shared Key) is special mode of WPA for small business or home users. A shared key, or password, is configured in the wireless access point (WAP) and any wireless laptop or desktop devices. WPA-PSK generates a unique key for each session between a wireless client and the associated WAP for more advanced security.

WPS

The Wi-Fi Protected Setup (WPS) is a standard for establishing a wireless home network. If your wireless access point supports WPS, you can configure the wireless network connection easily without a computer.

XPS

XML Paper Specification (XPS) is a specification for a Page Description Language (PDL) and a new document format, which has benefits for portable document and electronic document, developed by Microsoft. It is an XML-based specification, based on a new print path and a vector-based device-independent document format.

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