

CLP-775 Series

# Color Laser Printer User's Guide

imagine the possibilities

Thank you for purchasing a Samsung product.



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REV 1.04

# 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.

Use common sense for operating any electrical appliance and whenever using your machine. Also, follow all warnings and instructions marked on the machine and in the accompanying literature. After reading this section, keep it in a safe place for future reference.

## Important safety symbols

This section explains the meanings of all icons and signs in the user's guide. These safety symbols are in order, according to the degree of danger.

### Explanation of all icons and signs used in the user's guide:

	<b>Warning</b>	Hazards or unsafe practices that may result in severe personal injury or death.
	<b>Caution</b>	Hazards or unsafe practices that may result in minor personal injury or property damage.
		Do not attempt.
		Do not disassemble.
		Do not touch.
		Unplug the power cord from the wall socket.
		Make sure the machine is grounded to prevent electric shock.
		Call the service center for help.
		Follow directions explicitly.

## 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 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.



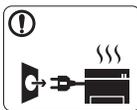
Do not place anything on top of the machine (water, small metal or heavy objects, candles, lit cigarettes, etc.).

► This could result in electric shock or fire.



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.



•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.

## 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 exhibits a sudden and distinct change in performance, 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.



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.

## 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.



Do not block or push objects into the ventilation opening.

▶ This could result in elevated component temperatures which can cause damage or fire.



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.

- ⊘ Be care when replacing paper or removing jammed paper.
  - ▶ New paper has sharp edges and can cause painful cuts.

- ⊘ This machine's power interception 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.

### Caution



Before moving the machine, turn the power off and disconnect all cords.

Then lift the machine:

- If the machine weighs under 20 kg (44.09lbs), lift with 1 person.
- If the machine weighs 20 kg (44.09lbs) - 40kg (88.18lbs), lift with 2 people.
- If the machine weighs more than 40 kg (88.18lbs), lift with 4 or more people.

- ▶ The machine could fall, causing injury or machine damage.

- ⊘ Do not place the machine on an unstable surface.
  - ▶ The machine could fall, causing injury or machine damage.
- ⊘ 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.
- ⊘ Use only No.26 AWG<sup>a</sup> or larger, telephone line cord, if necessary.
  - ▶ Otherwise, it can cause damage to the machine.

- ⊘ 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.

- ⊘ Make sure you plug the power cord into a grounded electrical outlet.
  - ▶ Otherwise, this could result in electric shock or fire.

- ⊘ Do not overload wall outlets and extension cords.
  - ▶ This can diminish performance, and 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 140V 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.

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.



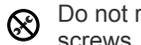
When you are working inside the machine replacing supplies or cleaning the inside, do not operate the machine.

▶ You could get injured.



Keep 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.

•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 Samsung service technician.



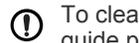
Keep cleaning supplies away from children.

▶ 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 repair.



To clean and operate the machine, strictly follow the user's guide provided with the machine.

▶ Otherwise, you could damage the machine.

## 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.



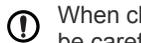
When storing supplies such as toner cartridges, keep them away from children.

▶ 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.



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.



When toner gets on your clothing, do not use hot water to wash it.

▶ Hot water sets toner into fabric. Use cold water.

# regulatory information

This machine is designed for our sound environment and certified with several regulatory statements.

## Laser safety statement

The printer is certified in the U.S. to conform to the requirements of DHHS 21 CFR, chapter 1 Subchapter J for Class I(1) laser products, and elsewhere is certified as a Class I laser product conforming to the requirements of IEC 60825-1 : 2007.

Class I laser products are not considered to be hazardous. The laser system and printer are designed so there is never any human access to laser radiation above a Class I level during normal operation, user maintenance or prescribed service condition.

### Warning

Never operate or service the printer with the protective cover removed from laser/scanner assembly. The reflected beam, although invisible, can damage your eyes.

When using this product, these basic safety precautions should always be followed to reduce risk of fire, electric shock, and injury to persons:

	CAUTION - CLASS 3B LASER RADIATION WHEN OPEN AVOID EXPOSURE TO THE BEAM.
	DANGER - LASER RADIATION AVOID DIRECT EXPOSURE TO BEAM.
	DANGER - RADIATIONS INVISIBLES DU LASER EN CAS D'OUVERTURE. EVITER TOUTE EXPOSITION DIRECTE AU FAISCEAU.
	VORSICHT - UNSICHTBARE LASERSTRAHLUNG, WENN ABDECKUNG GEÖFFNET. NICHT DEM STRAHL AUSSETZEN.
	ATTENZIONE - RADIAZIONE LASER INVISIBILE IN CASO DI APERTURA. EVITARE L'ESPOSIZIONE AL FASCIO.
	PRECAUCIÓN - RADIACIÓN LASER INVISIBLE CUANDO SE ABRE. EVITAR EXPONERSE AL RAYO.
	PERIGO - RADIAÇÃO LASER INVISÍVEL AO ABRIR. EVITE EXPOSIÇÃO DIRECTA AO FEIXE.
	GEVAAR - ONZICHTBARE LASERSTRALLEN BIJ GEOPENDE KLEP. DEZE KLEP NIET OPENEN.
	ADVARSEL - USYNLIG LASERSTRÅLNING VED ÅBNING. UNNGÅ UDSAETTELSE FOR STRÅLNING.
	ADVARSEL - USYNLIG LASERSTRÅLNING NÅR DEKSEL ÅPNES. UNNGÅ EKSPONERING FOR STRÅLEN.
	VARNING - OSYNLIG LASERSTRÅLNING NÅR DENNA DEL ÄR ÖPPEN. STRÅLEN ÄR FARLIG.
	VAROITUS - NÄKYMÄTÖNTÄ LASERSÄTEILYÄ AVATTAESSA. VARO SUORAA ALTISTUMISTA SÄTEELLE.
	注 意 - 严禁揭开此盖, 以免激光泄露灼伤
	주 의 - 이 덮개를 열면 레이저광에 노출될 수 있으므로 주의하십시오.

## Ozone safety



This product's ozone emission rate is under 0.1 ppm. Because ozone is heavier than air, keep the product in a place with good ventilation.

## Power saver

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This printer contains advanced energy conservation technology that reduces power consumption when it is not in active use.  
When the printer does not receive data for an extended period of time, power consumption is automatically lowered.  
ENERGY STAR and the ENERGY STAR mark are registered U.S. marks.  
For more information on the ENERGY STAR program see <http://www.energystar.gov>

## Recycling

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Recycle or dispose of the packaging material for this product in an environmentally responsible manner.

## China only

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### 回收和再循环

为了保护环境，我公司已经为废弃的产品建立了回收和再循环系统。  
我们会为您无偿提供回收同类废旧产品的服务。  
当您要废弃您正在使用的产品时，请您及时与工厂取得联系，  
我们会及时为您提供服务。

## Correct Disposal of This Product (Waste Electrical & Electronic Equipment)

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### (Applicable in the European Union and other European countries with separate collection systems)

This marking on the product, accessories or literature indicates that the product and its electronic accessories (e.g. charger, headset, USB cable) should not be disposed of with other household waste at the end of their working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate these items from other types of waste and recycle them responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take these items for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract. This product and its electronic accessories should not be mixed with other commercial wastes for disposal.

### The United States of America only

Dispose unwanted electronics through an approved recycler. To find the nearest recycling location, go to our website: [www.samsung.com/recyclingdirect](http://www.samsung.com/recyclingdirect) Or call, (877) 278 - 0799

## Correct disposal of batteries in this product

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**(Applicable in the European Union and other European countries with separate battery return systems.)**

This marking on the battery, manual or packaging indicates that the batteries in this product should not be disposed with other household waste at the end of their working life. Where marked, the chemical symbols Hg, Cd or Pb indicate that the battery contains mercury, cadmium or lead above the reference levels in EC Directive 2006/66. If batteries are not properly disposed of, these substances can cause harm to human health or the environment.

To protect natural resources and to promote material reuse, please separate batteries from other types of waste and recycle them through your local, free battery return system.

## Radio Frequency Emissions

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### FCC Information to the User

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

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

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

 Change or modifications not expressly approved by the manufacturer responsible for compliance could void the user's authority to operate the equipment.

### Canadian Radio Interference Regulations

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus as set out in the interference-causing equipment standard entitled "Digital Apparatus", ICES-003 of the Industry and Science Canada.

Cet appareil numérique respecte les limites de bruits radioélectriques applicables aux appareils numériques de Classe A prescrites dans la norme sur le matériel brouilleur: "Appareils Numériques", ICES-003 édictée par l'Industrie et Sciences Canada.

## RFID (Radio Frequency Interface Device)

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RFID operation is subject to the following two conditions:(1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device. (U.S.A., France, Taiwan only)

## Taiwan only

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### 低功率電波輻射性電機管理辦法

- 第十二條** 經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。
- 第十四條** 低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前項合法通信，指依電信法規定作業之無線電通信。低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

## Russia only

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## Turkey only

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- RoHS  
EEE Yönetmeliğine Uygundur.  
This EEE is compliant with RoHS.
- Bu ürünün ortalama yaşam süresi 7 yıl, garanti süresi 2 yıldır.

## Replacing the Fitted Plug (for UK Only)

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### Important

The mains lead for this machine is fitted with a standard (BS 1363) 13 amp plug and has a 13 amp fuse. When you change or examine the fuse, you must re-fit the correct 13 amp fuse. You then need to replace the fuse cover. If you have lost the fuse cover, do not use the plug until you have another fuse cover.

The 13 amp plug is the most widely used type in the UK and should be suitable. However, some buildings (mainly old ones) do not have normal 13 amp plug sockets. You need to buy a suitable plug adaptor. Do not remove the moulded plug.



If you cut off the moulded plug, get rid of it straight away.

You cannot rewire the plug and you may receive an electric shock if you plug it into a socket.

### Important warning:



You must earth this machine.

The wires in the mains lead have the following color code:

- **Green and Yellow:** Earth
- **Blue:** Neutral
- **Brown:** Live

If the wires in the mains lead do not match the colors marked in your plug, do the following:

You must connect the green and yellow wire to the pin marked by the letter “E” or by the safety ‘Earth symbol’ or colored green and yellow or green.

You must connect the blue wire to the pin which is marked with the letter “N” or colored black.

You must connect the brown wire to the pin which is marked with the letter “L” or colored red.

You must have a 13 amp fuse in the plug, adaptor, or at the distribution board.

## Declaration of Conformity (European Countries)

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### Approvals and Certifications



Hereby, Samsung Electronics, declares that this [CLP-775 Series] is in compliance with the essential requirements and other relevant provisions of R&TTE Directive (1999/5/EC).

The declaration of conformity may be consulted at [www.samsung.com/printer](http://www.samsung.com/printer), go to Support > Download center and enter your printer (MFP) name to browse the EuDoC.

**January 1, 1995:** Council Directive 2006/95/EC Approximation of the laws of the member states related to low voltage equipment.

**January 1, 1996:** Council Directive 2004/108/EC, approximation of the laws of the Member States related to electromagnetic compatibility.

**March 9, 1999:** Council Directive 1999/5/EC on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity. A full declaration, defining the relevant Directives and referenced standards can be obtained from your Samsung Electronics Co., Ltd. representative.

### European radio approval information (for products fitted with EU-approved radio devices)

Low power, Radio LAN type devices (radio frequency (RF) wireless communication devices), operating in the 2.4 GHz/5 GHz band, may be present (embedded) in your printer system which is intended for home or office use. This section is only applicable if these devices are present. Refer to the system label to verify the presence of wireless devices.



Wireless devices that may be in your system are only qualified for use in the European Union or associated areas if a CE mark with a Notified Body Registration Number and the Alert Symbol is on the system label.

The power output of the wireless device or devices that may be embedded in you printer is well below the RF exposure limits as set by the European Commission through the R&TTE directive.

#### European states qualified under wireless approvals:

EU countries

#### European states with restrictions on use:

EU

In France, the frequency range is restricted to 2454-2483.5 MHz for devices above 10 mW transmitting power such as wireless

EEA/EFTA countries

No limitations at this time

## Regulatory Compliance Statements

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### Wireless Guidance

Low power, Radio LAN type devices (radio frequency (RF) wireless communication devices), operating in the 2.4 GHz/5 GHz Band, may be present (embedded) in your printer system. The following section is a general overview of considerations while operating a wireless device.

Additional limitations, cautions, and concerns for specific countries are listed in the specific country sections (or country group sections). The wireless devices in your system are only qualified for use in the countries identified by the Radio Approval Marks on the system rating label. If the country you will be using the wireless device in, is not listed, contact your local Radio Approval agency for requirements. Wireless devices are closely regulated and use may not be allowed.

The power output of the wireless device or devices that may be embedded in your printer is well below the RF exposure limits as known at this time. Because the wireless devices (which may be embedded into your printer) emit less energy than is allowed in radio frequency safety standards and recommendations, manufacturer believes these devices are safe for use. Regardless of the power levels, care should be taken to minimize human contact during normal operation.

As a general guideline, a separation of 20 cm (8 inches) between the wireless device and the body, for use of a wireless device near the body (this does not include extremities) is typical. This device should be used more than 20 cm (8 inches) from the body when wireless devices are on and transmitting.

This transmitter must not be collocated or operation in conjunction with any other antenna or transmitter.

Some circumstances require restrictions on wireless devices. Examples of common restrictions are listed below:



Radio frequency wireless communication can interfere with equipment on commercial aircraft. Current aviation regulations require wireless devices to be turned off while traveling in an airplane. IEEE 802.11 (also known as wireless Ethernet) and Bluetooth communication devices are examples of devices that provide wireless communication.



In environments where the risk of interference to other devices or services is harmful or perceived as harmful, the option to use a wireless device may be restricted or eliminated. Airports, Hospitals, and Oxygen or flammable gas laden atmospheres are limited examples where use of wireless devices may be restricted or eliminated. When in environments where you are uncertain of the sanction to use wireless devices, ask the applicable authority for authorization prior to use or turning on the wireless device.



Every country has different restrictions on the use of wireless devices. Since your system is equipped with a wireless device, when traveling between countries with your system, check with the local Radio Approval authorities prior to any move or trip for any restrictions on the use of a wireless device in the destination country.



If your system came equipped with an internal embedded wireless device, do not operate the wireless device unless all covers and shields are in place and the system is fully assembled.



Wireless devices are not user serviceable. Do not modify them in any way. Modification to a wireless device will void the authorization to use it. Contact manufacturer for service.



Only use drivers approved for the country in which the device will be used. See the manufacturer System Restoration Kit, or contact manufacturer Technical Support for additional information.

### Israel only

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מספר אישור אלחוטי של משרד התקשורת 51-24146  
אסור להחליף את האנטנה המקורית של המכשיר ולא  
לעשות בו כל שינוי טכני אחר

## 产品中有毒有害物质或元素的名称及含量

部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr <sup>6+</sup> )	多溴联苯 (PBB)	多溴联苯醚 (PBDE)
塑料	○	○	○	○	○	○
金属 ( 机箱 )	X	○	○	○	○	○
印刷电路部件 (PCA)	X	○	○	○	○	○
电缆 / 连接器	X	○	○	○	○	○
电源设备	X	○	○	○	○	○
电源线	X	○	○	○	○	○
机械部件	X	○	○	○	○	○
卡盒部件	X	○	○	○	○	○
定影部件	X	○	○	○	○	○
扫描仪部件 - CCD ( 如果有 )	X	X	○	○	○	○
扫描仪部件 - 其它 ( 如果有 )	X	○	○	○	○	○
印刷电路板部件 (PBA)	X	○	○	○	○	○
墨粉	○	○	○	○	○	○
滚筒	○	○	○	○	○	○

○：表示该有毒有害物质在该部件所有均质材料中的含量均在 SJ/T 11363-2006 标准规定的限量要求以下。

×：表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T 11363-2006 标准规定的限量要求。

以上表为目前本产品含有有毒有害物质的信息。本信息由本公司的配套厂家提供，经本公司审核后而做成，本产品的部分部件含有有毒有害物质，这些部件是在现有科学技术水平下暂时无可替代物质，但三星电子将会一直为满足 SJ/T 11363-2006 标准而做不懈的努力。

# about this user's guide

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This user's guide provides information about basic understanding of the machine as well as detailed explanation on each step during actual usage. Valuable for both novice and professional users can refer to this as a guide for installing and using the machine.

-  Read the safety information before using the machine.
- If you have a problem using the machine, refer to the troubleshooting chapter. (See "Troubleshooting" on page 68.)
- Terms used in this user's guide are explained in the glossary chapter. (See "Glossary" on page 96.)
- Use Index to find information.
- All illustrations in this user's guide may differ from your machine depending on its options or models.
- The procedures in this user's guide are mainly based on Windows 7.

## Convention

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

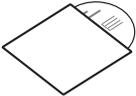
- Document is synonymous with original.
- Paper is synonymous with media, or print media.
- Machine refers to printer or MFP.

The following table offers the conventions of this guide:

Convention	Description	Example
<b>Bold</b>	For texts on the display or button names on the machine.	<b>Start</b>
<b>Note</b>	Provides additional information or detailed specification of the machine function and feature.	 The date format may differ from country to country.
<b>Caution</b>	Gives users information to protect the machine from possible mechanical damage or malfunction.	 Do not touch the green underside of the toner cartridge.
<b>Footnote</b>	Provides additional more detailed information on certain words or a phrase.	a. pages per minute
<b>("Cross-reference")</b>	Guides users to a reference page for the additional detailed information.	(See "Finding more information" on page 15.)

## Finding more information

You can find information for setting up and using your machine from the following resources, either as a print-out or on screen.

Material name	Description
<b>Quick Installation Guide</b> 	This guide provides information on setting up your machine and this requires that you follow the instructions in the guide to prepare the machine.
<b>Online User's Guide</b> 	This guide provides you with step-by-step instructions for using your machine's full features, and contains information for maintaining your machine, troubleshooting, and installing accessories.
<b>Network Website</b>	You can set the network environment from your computer using network-managing programs, such as SetIP, SyncThru™ Web Admin Service, Samsung AnyWeb Print etc. SyncThru™ Web Admin Service will be convenient for network administrators who need to manage many machines simultaneously. Samsung AnyWeb Print helps personal users to screen-capture the website screen in Windows Internet Explorer easily. You can download the SyncThru™ Web Admin Service or Samsung AnyWeb Print on <a href="http://solution.samsungprinter.com">http://solution.samsungprinter.com</a> . SetIP program is provided in the software CD.
<b>Machine Driver Help</b>	This help provides you with help information on printer driver and instructions for setting up the options for printing. (See "Using help" on page 53.)
<b>Samsung website</b>	If you have Internet access, you can get help, support, machine drivers, manuals, and order information from the Samsung website, <a href="http://www.samsungprinter.com">www.samsungprinter.com</a> .

# features of your new product

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Your new machine is equipped with a number of special features that improve the quality of the documents you print.

## Special Features

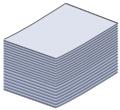
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### Print with excellent quality and speed



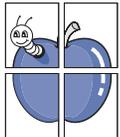
- You can print with a resolution of up to 9600x600 dpi effective output.
- Your machine prints A4-sized paper at up to 33 ppm and letter-sized paper at up to 35 ppm.
- For duplex printing, your machine prints A4-sized paper at up to 15 ipm and letter-sized paper at up to 16 ipm.

### Handle many different types of printable material



- The multi-purpose tray supports letterhead, envelopes, labels, custom-sized media, postcards, and heavy paper. The multi-purpose tray holds up to 100 sheets of plain paper.
- The 500-sheet tray 1 and 500-sheet optional trays support plain paper in various sizes. You can install up to 2 additional trays.

### Create professional documents (See "Using advanced print features" on page 49.)



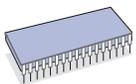
- Print Watermarks. You can customize your documents with words, such as "Confidential".
- Print Posters. The text and pictures of each page of your document are magnified and printed across the sheet of paper and can then be taped together to form a poster.
- You can use preprinted forms and letterhead with plain paper.

### Save time and money (See "Using advanced print features" on page 49.)



- To save paper, you can print multiple pages on one single sheet of paper.
- This machine automatically conserves electricity by substantially reducing power consumption when not in use.
- To save paper, you can print on both sides of the paper (double-sided printing).

### Expand your machine's capacity



- This machine has an extra memory slot for adding more memory. (See "Available supplies" on page 83.)

### Print in various environments



- You can print with Windows operating systems as well as Linux, Macintosh and UNIX systems.
- Your machine is equipped with a USB interface and a network interface.

## Features by Model

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The machine is designed to support all of your document needs from printing to more advanced networking solutions for your business. Features by model include:

Features	CLP-775 Series
USB 2.0	●
Hard Disk	○
Network Interface 802.11 b/g/n wireless LAN <sup>a</sup>	○
Network Interface Ethernet 10/100/1000 Base TX wired LAN	●
Duplex (2-sided) printing	●
IEEE1284 Parallel Connector <sup>b</sup>	○
Memory module	○

a. Depending on your country, wireless LAN cards may not be available. Contact your local Samsung dealer or the retailer where you bought your printer

b. If you use the parallel port, you cannot use the USB cable.

( ●: Included, ○: Optional)

# introduction

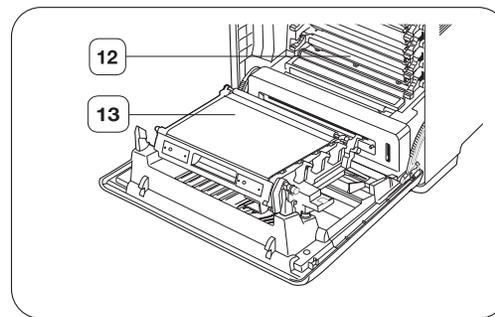
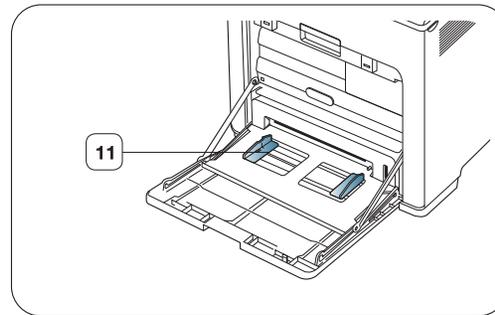
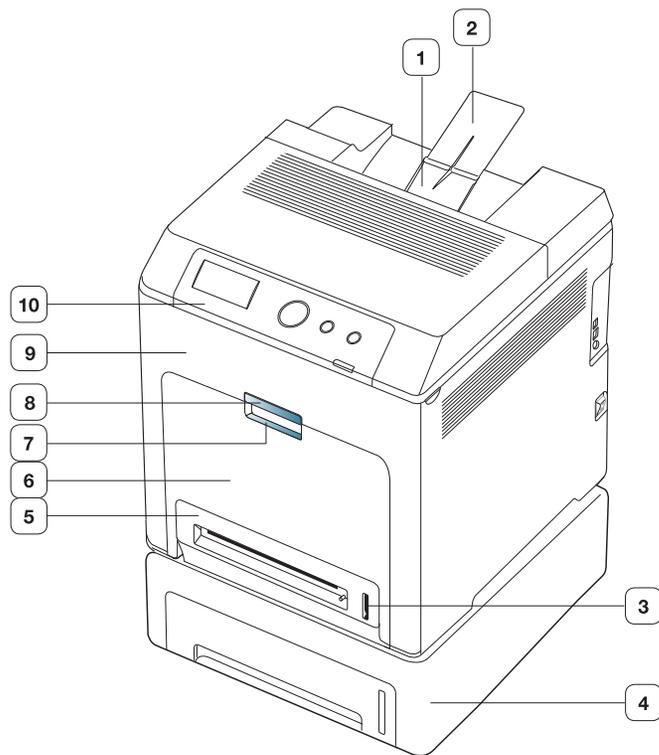
These are the main components of your machine:

**This chapter includes:**

- Machine overview
- Control panel overview
- Understanding the control panel
- Turning on the machine

## Machine overview

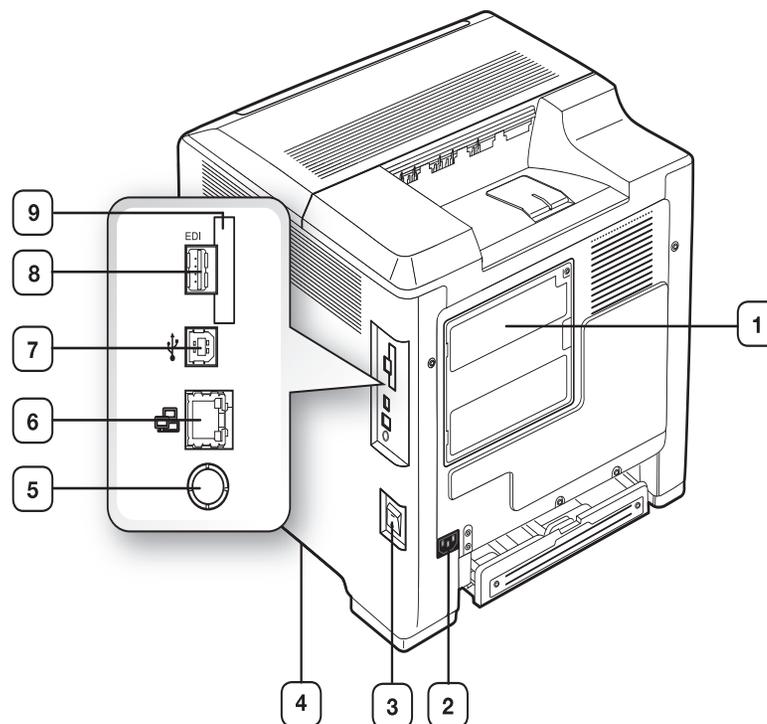
### Front view



1	Output tray	8	Front cover handle
2	Output support	9	Front cover
3	Paper level indicator	10	Control panel
4	Optional tray <sup>a</sup>	11	Paper width guides on a multi-purpose tray
5	Tray 1	12	Toner cartridge
6	Multi-purpose tray	13	Paper transfer belt
7	Multi-purpose tray handle		

a. This is an optional feature.

## Rear view

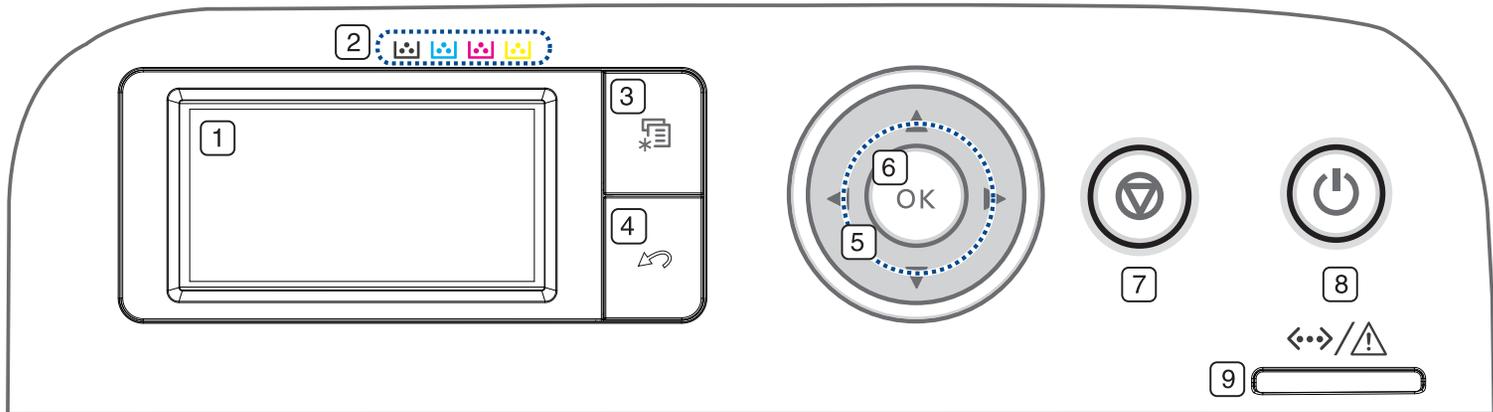


1	Control board cover	6	Network port
2	Power receptacle	7	USB port
3	Power-switch	8	External device interface (EDI) <sup>a</sup>
4	Handle	9	IEEE 802.11 b/g/n Wireless LAN <sup>b</sup>
5	IEEE1284 Parallel Connector <sup>b</sup>		

a. External device interface for Samsung and third party solutions.

b. This is an optional feature.

## Control panel overview



1	Display	Shows the current status and prompts during an operation.
2	Toner colors	Show the status of each toner cartridge. (See "Understanding the control panel" on page 21.)
3	☰ (Menu)	Enters menu mode and scrolls through the available menus. (See "Accessing the Menu" on page 56.)
4	↶ (Back)	Sends you back to the upper menu level.
5	Arrow	Scroll through the options available in the selected menu, and increase or decrease values.
6	OK	Confirms the selection on the screen.
7	⏹ (Stop)	Stops an operation at any time. The pop-up window appears on the screen showing the current job that the user can stop or resume.
8	⏻ (Power)	You can also turn the power on and off with this button. (See "Buttons" on page 21.)
9	⏪/⏩/⚠ (Status LED)	Shows the status of your machine. (See "Understanding the control panel" on page 21.)

## Understanding the control panel

### Status LED

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

Status	Description
<b>Off</b>	<ul style="list-style-type: none"><li>The machine is off-line.</li><li>The machine is in power saver mode. When data is received, or any button is pressed, it switches to on-line automatically.</li></ul>
<b>Green</b>	<b>Blinking</b> <ul style="list-style-type: none"><li>When the LED blinks slowly, the machine is receiving data from the computer.</li><li>When the LED blinks rapidly, the machine is printing data.</li></ul>
	<b>On</b> <p>The machine is on-line and can be used.</p>
<b>Red</b>	<b>Blinking</b> <ul style="list-style-type: none"><li>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.</li><li>Small amount of toner is left in the cartridge. The estimated cartridge life<sup>a</sup> 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 68.)</li></ul>
	<b>On</b> <ul style="list-style-type: none"><li>A toner cartridge has almost reached its estimated cartridge life<sup>a</sup>. It is recommended to replace the toner cartridge. (See "Replacing the toner cartridge" on page 84.)</li><li>A paper jam has occurred. (See "Clearing paper jams" on page 69.)</li><li>The cover is opened. Close the cover.</li><li>There is no paper in the tray. Load paper in the tray.</li><li>The machine has stopped due to a major error. Check the display message. (See "Understanding display messages" on page 73.)</li></ul>

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. The number of pages may be affected by operating environment, printing interval, media type, and media size. Some amount of toner may remain in the cartridge even when red LED is on and the printer stops printing.

 Check the message on the display. Follow the instructions in the message or refer to troubleshooting part. (See "Understanding display messages" on page 73.). If the problem persists, call for service.

### Buttons

 (Menu button)

When you want to know the machine status and set your machine to use an advanced feature press  (menu button). (See "Accessing the Menu" on page 56.)

 (Stop button)

By pressing the  (stop button), you can:

Function	Description
<b>Cancel print job</b>	Press  (stop button) during printing.

 (Power button)

When you want to turn the power off, press this button until to turn the power off. This button can also be used to turn the machine on.

Status	Description
<b>Off</b>	<ul style="list-style-type: none"><li>The machine is in ready mode.</li><li>The machine's power is off.</li></ul>
<b>On</b>	The machine is in power save mode.

### Turning on the machine

1. Plug in the power cord.
2. Turn the power-switch on.

 If you want to turn the power off, press this button until to turn the power off.

# getting started

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

## This chapter includes:

- Setting up the hardware
- Supplied software

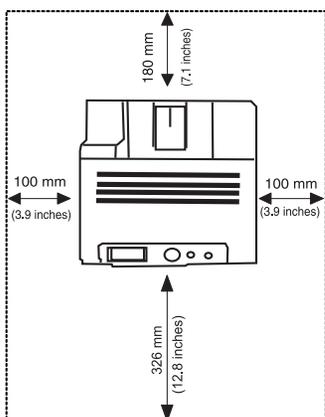
## Setting up the hardware

This section shows the steps to set up the hardware, as is explained in the Quick Install Guide. Make sure you read the Quick Install Guide first and follow the steps below:

### 1. Select a stable location.

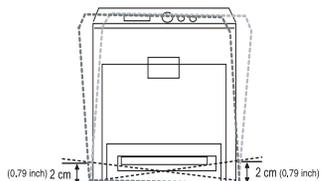
Select a level, stable place with adequate space for air circulation. Allow extra space to open covers and trays.

The area should be well ventilated and away from direct sunlight or sources of heat, cold, and humidity. Do not set the machine close to the edge of your desk or table.



Printing is suitable for altitudes under 1,000 m (3,281 ft). Refer to the altitude setting to optimize your printing. (See "Altitude adjustment" on page 40.)

Place the machine on a flat, stable surface so that there is no incline greater than 2 mm (0.08 inch). Otherwise, printing quality may be affected.



2. Unpack the machine and check all the enclosed items.
3. Remove tape holding the machine securely.
4. Install the toner cartridge.
5. Load paper. (See "Loading paper in the tray" on page 43.)
6. Make sure that all cables are connected to the machine.
7. Turn the machine on.

- System requirements
- Installing the driver locally

 This equipment will be inoperable when mains power fails.

## Supplied software

After you have set up your machine and connected it to your computer, you must install the printer software. If you are a Windows or Macintosh OS, install the software from the supplied CD and if you are a Linux OS user or UNIX OS user, download the software from the Samsung website ([www.samsung.com/printer](http://www.samsung.com/printer)) and install.

 Machine software are occasionally updated due to release of new operating system and etc. If needed, download the latest version from the Samsung website. ([www.samsung.com/printer](http://www.samsung.com/printer))

OS	Contents
<b>Windows</b>	<ul style="list-style-type: none"><li>• <b>Printer driver:</b> Use this driver to take full advantage of your machine's features.</li><li>• <b>PostScript printer driver:</b> Use the PostScript driver to print documents with complex fonts and graphics in the PS language. (PostScript printer description file is included.)</li><li>• <b>Samsung Easy Printer Manager:</b> Samsung Easy Printer Manager combines device settings as well as printing environments, settings/actions and launching. All of these features provide a gateway to conveniently use your Samsung machine.</li><li>• <b>Samsung Printing Status:</b> This program allows you to monitor the machine's status and alerts you when an error occurs during printing.</li><li>• <b>Direct Printing Utility:</b> This program allows you to print PDF files directly.</li><li>• <b>SetIP:</b> Use this program to set your machine's TCP/IP addresses.</li></ul>
<b>Macintosh</b>	<ul style="list-style-type: none"><li>• <b>PostScript printer driver:</b> Use this driver to run your machine from a Macintosh computer and print documents. (PostScript printer description file is included.)</li><li>• <b>Smart Panel:</b> This program allows you to monitor the machine's status and alerts you when an error occurs during printing.</li><li>• <b>SetIP:</b> Use this program to set your machine's TCP/IP addresses.</li></ul>

OS	Contents
<b>Linux</b>	<ul style="list-style-type: none"> <li>• <b>Unified Linux Driver:</b> Use this driver to take full advantage of your machine's features.</li> <li>• <b>Printer Description (PPD) file:</b> Use this file to run your machine from a Linux computer and print documents.</li> <li>• <b>Smart Panel:</b> This program allows you to monitor the machine's status and alerts you when an error occurs during printing.</li> <li>• <b>SetIP:</b> Use this program to set your machine's TCP/IP addresses.</li> </ul>
<b>UNIX</b>	<ul style="list-style-type: none"> <li>• <b>UNIX PrinterDriver:</b> Use this driver to print documents from the UNIX system.</li> </ul>

## System requirements

### Microsoft® Windows®

Operating system	Requirement (recommended)		
	CPU	RAM	free HDD space
<b>Windows® 2000</b>	Intel® Pentium® II 400 MHz (Pentium III 933 MHz)	64 MB (128 MB)	600 MB
<b>Windows® XP</b>	Intel® Pentium® III 933 MHz (Pentium IV 1 GHz)	128 MB (256 MB)	1.5 GB
<b>Windows Server® 2003</b>	Intel® Pentium® III 933 MHz (Pentium IV 1 GHz)	128 MB (512 MB)	1.25 GB to 2 GB
<b>Windows Server® 2008</b>	Intel® Pentium® IV 1 GHz (Pentium IV 2 GHz)	512 MB (2 GB)	10 GB
<b>Windows Vista®</b>	Intel® Pentium® IV 3 GHz	512 MB (1 GB)	15 GB
<b>Windows® 7</b>	Intel® Pentium® IV 1 GHz 32-bit or 64-bit processor or higher	1 GB (2 GB)	16 GB
	<ul style="list-style-type: none"> <li>• Support for DirectX® 9 graphics with 128 MB memory (to enable the Aero theme).</li> <li>• DVD-R/W Drive</li> </ul>		
<b>Windows Server® 2008 R2</b>	Intel® Pentium® IV 1 GHz (x86) or 1.4 GHz (x64) processors (2 GHz or faster)	512 MB (2 GB)	10 GB

-  Internet Explorer 6.0 or higher is the minimum requirement for all Windows operating systems.
- Users who have administrator rights can install the software.
- **Windows Terminal Services** is compatible with your machine.
- For Windows 2000, Services Pack 4 or higher is required.

## Macintosh

Operating system	Requirements (Recommended)		
	CPU	RAM	Free HDD space
<b>Mac OS X 10.3 ~ 10.4</b>	<ul style="list-style-type: none"> <li>• Intel® processors</li> <li>• PowerPC G4/ G5</li> </ul>	<ul style="list-style-type: none"> <li>• 128 MB for a powerPC based Mac (512 MB)</li> <li>• 512 MB for an Intel-based Mac (1 GB)</li> </ul>	1 GB
<b>Mac OS X 10.5</b>	<ul style="list-style-type: none"> <li>• Intel® processors</li> <li>• 867 MHz or faster Power PC G4/ G5</li> </ul>	512 MB (1 GB)	1 GB
<b>Mac OS X 10.6</b>	<ul style="list-style-type: none"> <li>• Intel® processors</li> </ul>	1 GB (2 GB)	1 GB

## Linux

Items	Requirements
<b>Operating system</b>	RedHat® Enterprise Linux WS 4, 5 (32/64 bit) Fedora 5, 6, 7, 8, 9, 10, 11, 12, 13 (32/ 64 bit) SuSE Linux 10.1 (32 bit) OpenSuSE® 10.2, 10.3, 11.0, 11.1, 11.2 (32/64 bit) Mandriva 2007, 2008, 2009, 2009.1, 2010 (32/64 bit) Ubuntu 6.06, 6.10, 7.04, 7.10, 8.04, 8.10, 9.04, 9.10, 10.04 (32/64 bit) SuSE Linux Enterprise Desktop 10, 11 (32/64 bit) Debian 4.0, 5.0 (32/64 bit)
<b>CPU</b>	Pentium IV 2.4GHz (Intel Core™2)
<b>RAM</b>	512 MB (1 GB)
<b>Free HDD space</b>	1 GB (2 GB)

## Unix

Items	Requirements
<b>Operating system</b>	Sun Solaris 9, 10 (x86, SPARC) HP-UX 11.0, 11i v1, 11i v2, 11i v3 (PA-RISC, Itanium) IBM AIX 5.1, 5.2, 5.3, 5.4
<b>Free HDD space</b>	Up to 100 MB

## Installing the driver locally

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 wired network connected machine's driver" on page 28.)

-  If you are a Macintosh, Linux, or Unix OS user, refer to the Advanced guide.
- Selecting **Advanced Installation > Custom Installation** allows

you to choose which programs to install.

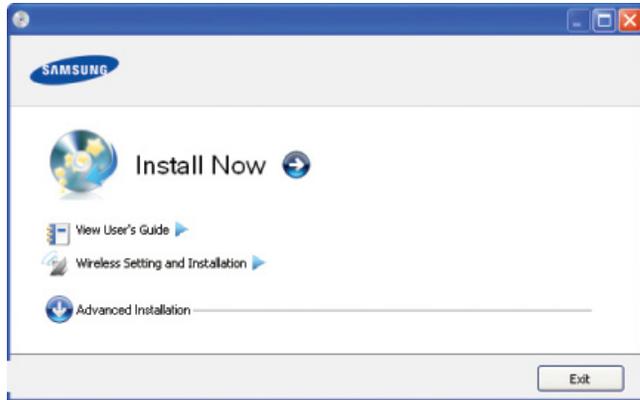
- Only use a USB cable no longer than 3 meters (118 inches).

## Windows

1. Make sure that the machine is connected to your computer and powered on.

 If the “**Found New Hardware Wizard**” appears during the installation procedure, click **Cancel** to close the window.

2. Insert the supplied software CD into your CD-ROM drive.  
The software CD should automatically run and an installation window will appear.
3. Select **Install Now**.



4. Read **License Agreement** and select **I accept the terms of License Agreement**. Then, click **Next**.
5. Follow the instructions in the installation window.

 If the printer driver does not work properly, follow the steps below to uninstall and reinstall the driver.

- a) Make sure that the machine is connected to your computer and powered on.
- b) From the **Start** menu, select **Programs** or **All Programs** > **Samsung Printers** > **your printer driver name** > **Uninstall**.
- c) Select the necessary option and follow the instructions in the window.
- d) After uninstalling the printer driver, reinstall it (see "Installing the driver locally" on page 23, "Installing wired network connected machine's driver" on page 28).

## Macintosh

1. Make sure that the machine is connected to your computer and powered on.
2. Insert the supplied software CD into your CD-ROM drive.
3. Double-click the CD-ROM icon that appears on your Macintosh desktop.
4. Double-click the **MAC\_Installer** folder.
5. Double-click the **Installer OS X** icon.
6. Enter the password and click **OK**.
7. The Samsung Installer window opens. Click **Continue**.
8. Read the license agreement and click **Continue**.
9. Click **Agree** to agree to the license agreement.
10. Select **Easy Install** and click **Install**. **Easy Install** is recommended for most users. All components necessary for machine operations will be installed.  
If you select **Custom Install**, you can choose individual components to

install.

11. When the message which warns that all applications will close on your computer appears, click **Continue**.
12. Select **Typical installation for a local printer** and then click **OK**.

 If you select **Typical installation for a network printer** during the machine driver installation, the SetIP program automatically runs. If the machine has already configured network information, close the SetIP program. Go to the next step.

13. After the installation is finished, click **Quit**.
14. Open the **Applications** folder > **Utilities** > **Print Setup Utility**.
  - For Mac OS X 10.5~10.6, open the **Applications** folder > **System Preferences** and click **Print & Fax**.
15. Click **Add** on the **Printer List**.
  - For Mac OS X 10.5~10.6, click the “+” icon; a display window will pop up.
16. For Mac OS X 10.3, select the **USB** tab.
  - For Mac OS X 10.4, click **Default Browser** and find the USB connection.
  - For Mac OS X 10.5~10.6, click **Default** and find the USB connection.
17. For Mac OS X 10.3, if Auto Select does not work properly, select **Samsung** in **Printer Model** and your machine name in **Model Name**.
  - For Mac OS X 10.4, if Auto Select does not work properly, select **Samsung** in **Print Using** and your machine name in **Model**.
  - For Mac OS X 10.5~10.6, if Auto Select does not work properly, select **Select a driver to use...** and your machine name in **Print Using**.

Your machine appears on the **Printer List**, and is set as the default machine.

18. Click **Add**.

 If the printer driver does not work properly, uninstall the driver and reinstall it.

Follow steps below to uninstall the driver for Macintosh.

- a) Make sure that the machine is connected to your computer and powered on.
- b) Insert the supplied software CD into your CD-ROM drive.
- c) Double-click CD-ROM icon that appears on your Macintosh desktop.
- d) Double-click the **MAC\_Installer** folder.
- e) Double-click the **Installer OS X** icon.
- f) Enter the password and click **OK**.
- g) The Samsung Installer window opens. Click **Continue**.
- h) Select **Uninstall** and click **Uninstall**.
- i) When the message which warns that all applications will close on your computer appears, Click **Continue**.
- j) When the uninstall is done, click **Quit**.

## Linux

You need to download the Linux software package from the Samsung website to install the printer software.

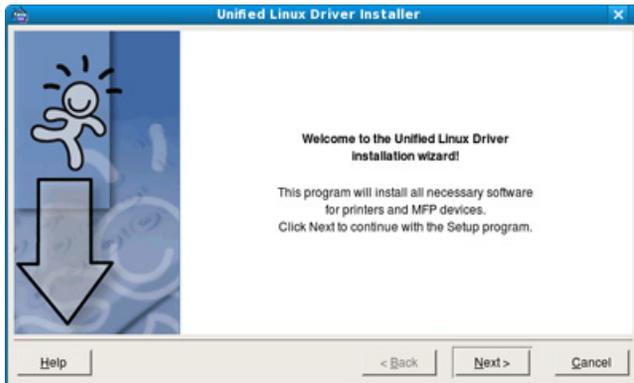
Follow the steps below to install the software.

### Installing the Linux Unified Driver

1. Make sure that the machine is connected to your computer and powered on.
2. When the **Administrator Login** window appears, type in root in the **Login** field and enter the system password.

 You must log in as a super user (root) to install the machine software. If you are not a super user, ask your system administrator.

3. From the Samsung website, download the Unified Linux Driver package to your computer.
4. Right click the **Unified Linux Driver** package and extract the package.
5. Double click **cdroot > autorun**.
6. When the welcome screen appears, click **Next**.



7. When the installation is complete, click **Finish**.

The installation program has added the Unified Driver Configurator desktop icon and the Unified Driver group to the system menu for your convenience. If you have any difficulties, consult the on screen help that is available through your system menu or can otherwise be called from the driver package Windows applications, such as **Unified Driver Configurator** or **Image Manager**.

### Installing the SmartPanel

1. Make sure that the machine is connected to your computer and powered on.
2. When the **Administrator Login** window appears, type in root in the **Login** field and enter the system password.

 You must log in as a super user (root) to install the machine software. If you are not a super user, ask your system administrator.

3. From the Samsung website, download the **Smart Panel** package to your computer.
4. Right click the Smart Panel package and extract the package.
5. Double click **cdroot > Linux > smartpanel > install.sh**.

### Installing the Printer Settings Utility

1. Make sure that the machine is connected to your computer and powered on.
2. When the **Administrator Login** window appears, type in root in the **Login** field and enter the system password.

 You must log in as a super user (root) to install the machine software. If you are not a super user, ask your system administrator.

3. From the Samsung website, download the Printer Setting Utility package to your computer.
4. Right click the **Printer Settings Utility** package and extract the package.
5. Double click **cdroot > Linux > psu > install.sh**.

 If the printer driver does not work properly, uninstall the driver and reinstall it again.

Follow the steps below to uninstall the driver for Linux.

- a) Make sure that the machine is connected to your computer and powered on.
- b) When the **Administrator Login** window appears, type in “root” in the **Login** field and enter the system password.

You must log in as a super user (root) to uninstall the printer driver. If you are not a super user, ask your system administrator.

- c) Click the icon at the bottom of the desktop. When the Terminal screen appears, type in:  

```
[root@localhost root]#cd /opt/Samsung/mfp/uninstall/  
[root@localhost uninstall]#./uninstall.sh
```
- d) Click **Uninstall**.
- e) Click **Next**.
- f) Click **Finish**.

# network setup

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

## This chapter includes:

- Network environment
- Introducing useful network programs
- Using a wired network

- ✍ • If you are using wired network environment, see "Using a wired network" on page 26.
- If you are using wireless network environment, see "Wireless network setup" on page 32.

## Network environment

You need to set up the network protocols on the machine to use it as your network machine. You can set up the basic network settings through the machine's control panel.

The following table shows the network environments supported by the machine:

Item	Requirements
<b>Network interface</b>	<ul style="list-style-type: none"><li>• Ethernet 10/100/1000 Base-TX</li><li>• 802.11 b/g/n Wireless LAN (Optional)</li></ul>
<b>Network operating system</b>	<ul style="list-style-type: none"><li>• Windows 2000/XP/2003/2008/Vista/7/2008 Server R2</li><li>• Various Linux OS</li><li>• Mac OS X 10.3 ~ 10.6</li><li>• UNIX</li></ul>
<b>Network protocols</b>	<ul style="list-style-type: none"><li>• TCP/IPv4</li><li>• DHCP, BOOTP</li><li>• DNS, WINS, Bonjour, SLP, UPnP</li><li>• Standard TCP/IP Printing(RAW), LPR, IPP</li><li>• SNMPv 1/2/3, HTTP(S), Telnet, SMTP, IPsec</li><li>• TCP/IPv6 (DHCP, DNS, RAW, LPR, SNMPv 1/2/3, HTTP(S), IPsec (See "IPv6 configuration" on page 39.)</li></ul>
<b>Wireless Security</b>	<ul style="list-style-type: none"><li>• Authentication : Open System, Shared Key, WPA Personal, WPA2 Personal (PSK), WPA Enterprise, WPA2 Enterprise</li><li>• Encryption : WEP64, WEP128, TKIP, AES</li></ul>

- Wireless network setup
- IPv6 configuration

## Introducing useful network programs

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

- ✍ Before using the programs below, set the IP address first.

### SyncThru™ Web Service

Web server embedded on your network machine, which allows you to:

- Configure the network parameters necessary for the machine to connect to various network environments.
- Customize machine settings.

(See "Using SyncThru™ Web Service" on page 60.)

### SyncThru™ Web Admin Service

Web-based machine management solution for network administrators. SyncThru™ Web Admin Service provides you with an efficient way of managing network devices and lets you remotely monitor and troubleshoot network machines from any site with corporate internet access. Download this program from <http://solution.samsungprinter.com>.

### SetIP

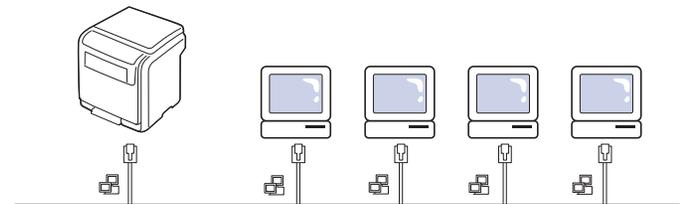
This utility program allows you to select a network interface and manually configure the IP addresses for use with the TCP/IP protocol. (See "Setting IP address" on page 27)

- ✍ TCP/IPv6 is not supported by this program.

## Using a wired network

You must set up the network protocols on your machine to use it on your network. This chapter will show you how this is easily accomplished.

You can use network after connecting network cable to a corresponding port on your machine.



### Printing Network Configuration report

You can print a **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 and troubleshooting problems.

1. Press  on the control panel.
2. Press up/down arrow to highlight **Network** and press **OK**.
3. Press up/down arrow to highlight **Network Configuration** and press **OK**.

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

For example:

- MAC Address : 00:15:99:41:A2:78
- IP Address : 192.0.0.192

## 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.

### IP setting using control panel

1. Connect your machine to the network with a network cable.
2. Turned on the machine.
3. Press  on the control panel.
4. Press up/down arrow to highlight **Network** and press **OK**.
5. Press up/down arrow to highlight **TCP/IP (IPv4)** and press **OK**.
6. Press up/down arrow to highlight **Set IP Address** and press **OK**.
7. Press up/down arrow to highlight **Manual** and press **OK**.
8. The first available menu item, **IP Address** displays.
  - Enter a number between 0 and 255.
9. Use the up/down arrow to enter digits and use the left/right arrow to move between digits. When you finish entering the IP address, press **OK**.
10. Enter other parameters, such as the **Subnet Mask** or **Gateway**, and press **OK**.
11. After entering all parameters, press  to return to ready mode.

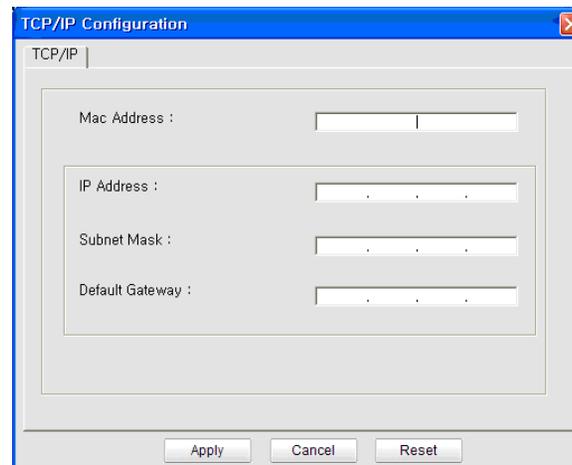
Now go to "Installing wired network connected machine's driver" on page 28.

### IPv4 configuration using SetIP (Windows)

Before using the SetIP program, disable the computer firewall from **Control Panel > Security Center > Windows Firewall**.

1. Install this program from the supplied CD-ROM by double-click **Application > SetIP > Setup.exe**.
2. Follow the instructions in the installation window.
3. Connect your machine to the network with a network cable.
4. Turn on the machine.
5. From the Windows **Start** menu, select **All Programs > Samsung Printers > SetIP > SetIP**.
6. Click the  icon (third from left) in the SetIP window to open the TCP/IP configuration window.

7. Enter the machine's new information into the configuration window as follows. In a corporate intranet, you may need to have this information assigned by a network manager before proceeding.



-  Find the machine's MAC address from the **Network Configuration Report** (see "Printing Network Configuration report" on page 26) and enter it without the colons. For example, 00:15:99:29:51:A8 becomes 0015992951A8.

8. Click **Apply**, and then click **OK**. The machine will automatically print the **Network Configuration Report**. Confirm that all the settings are correct.

### IPv4 configuration using SetIP (Macintosh)

Before using the SetIP program, disable the computer firewall from **System Preferences > Security > Firewall**.

-  The following instructions may vary from your model.
1. Connect your machine to the network with a network cable.
  2. Insert the Installation CD-ROM, and open the disk window, select **MAC\_Installer > MAC\_Printer > SetIP > SetIP.ppplet.html**.
  3. Double-click the file and **Safari** will automatically open, then select **Trust**. The browser will open the **SetIP.ppplet.html** page that shows the printer's name and IP address information.
  4. Click the  icon (third from left) in the SetIP window to open the TCP/IP configuration window.
  5. Enter the machine's new information into the configuration window. In a corporate intranet, you may need to have this information assigned by a network manager before proceeding.
    -  Find the machine's MAC address from the **Network Configuration Report** (see "Printing Network Configuration report" on page 26) and enter it without the colons. For example, 00:15:99:29:51:A8 becomes 0015992951A8.
  6. Select **Apply**, then **OK**, and **OK** again.
  7. Quit **Safari**.

### IPv4 configuration using SetIP (Linux)

Before using the SetIP program, disable the computer firewall from **System Preferences** or **Administrator**.

-  The following instructions may vary from your model or operating systems.

1. Open `/opt/Samsung/mfp/share/utils/`.
2. Double-click the **SetIPApplet.html** file.
3. Click to open the TCP/IP configuration window.
4. Enter the machine's new information into the configuration window. In a corporate intranet, you may need to have this information assigned by a network manager before proceeding.
  -  Find the machine's MAC address from the **Network Configuration Report** (see "Printing Network Configuration report" on page 26) and enter it without the colons. For example, 00:15:99:29:51:A8 becomes 0015992951A8.
5. The machine will automatically print the **Network Configuration Report**.

## Network parameter setting

You can also set up the various network settings through the network administration programs such as **SyncThru™ Web Admin Service** and **SyncThru™ Web Service**.

## Restoring factory default settings

You may need to reset the machine to the factory default settings when machine that you are using is connected to new network environment.

### Restoring factory default settings using control panel

1. Press  on the control panel.
2. Press up/down arrow to highlight **Network** and press **OK**.
3. Press up/down arrow to highlight **Clear Settings** and press **OK**.
4. Turn off and restart machine to apply settings.

### Restoring factory default settings using SyncThru™ Web Service

1. Start a web browser such as Internet Explorer, Safari or Firefox and enter your machine's new IP address in the browser window. For example,

 `http://192.168.1.133/`

2. Click **Go** to access the SyncThru™ Web Service.
3. Click **Login** on the upper right of the SyncThru™ Web Service website.
  - A log-in page appears.
4. Type in the **ID** and **Password** then click **Login** .
  - If it's your first time logging into SyncThru™ Web Service, type in the below default ID and password.
    - **ID: admin**
    - **Password: sec00000**
5. When the **SyncThru™ Web Service** window opens, click **Settings** > **Network Settings** > **Restore Default**.
6. Click **Clear** for network.
7. Turn off and restart machine to apply settings.

## Installing wired network connected machine's driver

You must install the printer driver software for printing. The software includes drivers, applications, and other user friendly programs.

Make sure that the network setup for your machine is completed. All applications should be closed on your computer before beginning installation.

## Windows

1. Make sure that the machine is connected to the network and powered on. Also, your machine's IP address should have been set.
  -  If the "**Found New Hardware Wizard**" appears during the installation procedure, click **Cancel** to close the window.
2. Insert the supplied software CD into your CD-ROM drive. The software CD should automatically run and an installation window will appear.
3. Select **Install Now**.
  -  When you click the **Advanced Installation**, you can use the **Custom Installation** option. The **Custom Installation** allows you to select the machine's connection and choose individual components to install. Follow the instructions on the window.
4. Read **License Agreement**, and select **I accept the terms of the License Agreement**. Then, click **Next**. The program searches for the machine.
  -  If your machine is not found on the network or locally, an error message appears.
    - **Check if you want to install the software without connection of the printer.**
      - Check this option to install this program without a machine connected. In this case, the print a test page window will be skipped, and completes the installation.
    - **Search again**
      - When you press this button, the firewall notice window appears.
        - Turn off the firewall and **Search again**. For Windows operating system, click **Start** > **Control Panel** > **Windows Firewall**, and inactivate this option.
        - Turn off the firewall from the third party's program beside the operating system. Refer to the manual provided by individual programs.
    - **Direct Input**
      - The **Direct Input** allows you to search for a specific machine on the network.
        - **Search by IP address:** Enter the IP address or the host name. Then click **Next**.
          - To verify your machine's IP address, print a network configuration report (see "Printing Network Configuration report" on page 26).
        - **Search by network path:** To find a shared machine (UNC Path), enter the shared name manually or find a shared printer by clicking the **Browse** button. Then click **Next**.
    - **Help**
      - If your machine is not connected to the computer or network, this help button gives detailed information about how to connect the machine.
    - **SNMP Community Name**
      - If your system administrator set the new **SNMP Community Name** on the machine, you can find the machine in the network. Contact your system administrator for new **SNMP Community Name**.
5. The searched machines will be shown on the screen. Select the one you wish to use and click **OK**.
  -  If the driver searched only one machine, the confirmation

window appears.

6. Follow the instructions in the installation window.

### Silent installation Mode

Silent installation mode is an installation method that does not require any user intervention. Once you start the installation, the machine driver and software are automatically installed on your computer. You can start the silent installation by typing `/s` or `/S` in the command window.

### Command-line Parameters

Following table shows commands that can be used in the command window.

 Following command-line are effective and operated when command is used with `/s` or `/S`. But `/h`, `/H` or `/?` are exceptional commands that can be operated solely.

Command-line	Definition	Description
<code>/s</code> or <code>/S</code>	Starts silent installation.	Installs machine drivers without prompting any UIs or user intervention.
<code>/p"&lt;port name&gt;"</code> or <code>/P"&lt;port name&gt;"</code>	 Specifies printer port. Network Port will be created by use of Standard TCP/IP Port monitor. For local port, this port must exist on system before being specified by command.	Printer port name can be specified as IP address, hostname, USB local port name or IEEE1284 port name. For example: <ul style="list-style-type: none"> <li><code>/p"xxx.xxx.xxx.xxx"</code> in where, "xxx.xxx.xxx.xxx" means IP address for network printer.</li> <li><code>/p"USB001"</code>, <code>/P"LPT1:"</code>, <code>/p"hostname"</code></li> <li>When installing the driver silently in Korean, type in <b>Setup.exe /s /L"0x0012"</b> or <b>Setup.exe /s /L"18"</b>.</li> </ul>
<code>/a"&lt;dest_path &gt;"</code> or <code>/A"&lt;dest_path &gt;"</code>	 Specifies destination path for installation. The destination path should be a fully qualified path.	Since machine drivers should be installed on the OS specific location, this command applies to only application software.

Command-line	Definition	Description
<code>/i"&lt;script filename&gt;"</code> or <code>/I"&lt;script filename&gt;"</code>	Specifies customized install script file for custom operation.  The script filename should be a fully qualified filename.	Customized script file can be assigned for customized silent installation. This script file can be created or modified through provided installer customizing utility or by text editor.  This customized script file is prior than default installer setting in setup package but not prior than command-line parameters.
<code>/n"&lt;Printer name&gt;"</code> or <code>/N"&lt;Printer name&gt;"</code>	Specifies printer name. Printer instance shall be created as specified printer name.	With this parameter, you can add printer instances as your wishes.
<code>/nd</code> or <code>/ND</code>	Commands not to set the installed driver as a default machine driver.	It indicates installed machine driver will not be the default machine driver on your system if there are one or more printer drivers installed. If there is no installed machine driver on your system, then this option won't be applied because Windows OS will set installed printer driver as a default machine driver.
<code>/x</code> or <code>/X</code>	Uses existing machine driver files to create printer instance if it is already installed.	This command provides a way to install a printer instance that uses installed printer driver files without installing an additional driver.
<code>/up"&lt;printer name&gt;"</code> or <code>/UP"&lt;printer name&gt;"</code>	Removes only specified printer instance and not the driver files.	This command provides a way to remove only specified printer instance from your system without effecting other printer drivers. It will not remove printer driver files from your system.
<code>/d</code> or <code>/D</code>	Uninstalls all device drivers and applications from your system.	This command will remove all installed device drivers and application software from your system.
<code>/v"&lt;share name&gt;"</code> or <code>/V"&lt;share name&gt;"</code>	Shares installed machine and add other available platform drivers for Point & Print.	It will install all supported Windows OS platform's machine drivers to system and share it with specified <code>&lt;share name&gt;</code> for point and print.

Command-line	Definition	Description
/o or /O	Opens <b>Printers and Faxes</b> folder after installation.	This command will open <b>Printers and Faxes</b> folder after the silent installation.
/f"<log filename>" or /F"<log filename>"	Specifies log filename. The default log file is created in the system temp folder if not specified.	It will create a log file to a specified folder.
/h, /H or /?	Shows Command-line Usage.	

### Language code

Code	Language
0X0009	English
0X0012	Korean
0X0804	Simplified Chinese
0X0404	Traditional Chinese
0x040c	French
0X0007	German
0X0010	Italian
0X000a	Spanish
0X0013	Dutch
0X001D	Swedish
0X0006	Danish
0X000b	Finnish
0X0014	Norwegian
0X0019	Russian
0X0005	Czech
0X000e	Hungarian
0X0008	Greek
0X0816	Standard Portuguese
0X0416	Brazilian Portuguese
0X0015	Polish
0X001F	Turkish
0X0001	Arabic
0X000D	Hebrew
0x0424	Slovenian
0X0418	Romanian
0X0402	Bulgarian
0X041A	Croatian
0X081A	Serbian

Code	Language
0X0422	Ukraine
0X041B	Slovakia
0X0421	Indonesian
0x041E	Thai
0X0429	Farsi

### Macintosh

1. Make sure that the machine is connected to your network and powered on. Also, your machine's IP address should have been set.
  2. Insert the supplied software CD into your CD-ROM drive.
  3. Double-click the CD-ROM icon that appears on your Macintosh desktop.
  4. Double-click the **MAC\_Installer** folder.
  5. Double-click the **Installer** icon.
  6. Enter the network key and click **OK**.
  7. The Samsung Installer window opens. Click **Continue**.
  8. Select **Easy Install** and click **Install**. **Easy Install** is recommended for most users. All components necessary for machine operations will be installed.  
If you select **Custom Install**, you can choose individual components to install.
  9. When the message which warns that all applications will close on your computer appears, click **Continue**.
  10. Select **Typical installation for a network print** and click **OK**.  
 The certificate window appears, click **Trust**. See "Setting IP address" on page 27 to use **SetIP** program.
  11. After the installation is finished, click **Quit**.
  12. Open the **Applications** folder > **Utilities** > **Print Setup Utility**.
    - For Mac OS X 10.5~ 10.6, open the **Applications** folder > **System Preferences** and click **Print & Fax**.
  13. Click **Add** on the **Printer List**.
    - For Mac OS X 10.5~ 10.6, press the "+" icon; a display window will pop up.
  14. For Mac OS X 10.3, select the **IP Printing** tab.
    - For Mac OS X 10.4, click **IP Printer**.
    - For Mac OS X 10.5~ 10.6, click **IP**.
  15. Select **Socket/HP Jet Direct** in **Printer Type**.  
When printing a document containing many pages, printing performance may be enhanced by choosing Socket for **Printer Type** option.
  16. Enter the machine's IP address in the **Printer Address** field.
  17. Enter the queue name in the **Queue Name** field. If you cannot determine the queue name for your machine server, try using the default queue first.
  18. For Mac OS X 10.3, if Auto Select does not work properly, select **Samsung** in **Printer Model** and your machine name in **Model Name**.
    - For Mac OS X 10.4, if Auto Select does not work properly, select **Samsung** in **Print Using** and your machine name in **Model**.
    - For Mac OS X 10.5~ 10.6, if Auto Select does not work properly, choose **Select a driver to use...** and your machine name in **Print Using**.
- Your machine's IP address appears on the **Printer List**, and is set

as the default machine.

#### 19. Click **Add**.

 If the printer driver does not work properly, uninstall the driver and reinstall it.

Follow steps below to uninstall the driver for Macintosh.

- a) Make sure that the machine is connected to your computer and powered on.
- b) Insert the supplied software CD into your CD-ROM drive.
- c) Double-click CD-ROM icon that appears on your Macintosh desktop.
- d) Double-click the **MAC\_Installer** folder.
- e) Double-click the **Installer** icon.
- f) Enter the network key and click **OK**.
- g) The Samsung Installer window opens. Click **Continue**.
- h) Select **Uninstall** and click **Uninstall**.
- i) When the message which warns that all applications will close on your computer appears, click **Continue**.
- j) When the uninstall is done, click **Quit**.

## Linux

### Install Linux Driver

1. Make sure that the machine is connected to your network and powered on. Also, your machine's IP address should have been set.
2. From the Samsung website, download the Unified Linux Driver package to your computer.
3. Right click the **Unified Linux Driver** package and extract the package.
4. Double click **cdroot > autorun**.
5. The Samsung Installer window opens. Click **Continue**.
6. The Add printer wizard window opens. Click **Next**.
7. Select Network printer and click **Search** button.
8. The Printer's IP address and model name appears on list field.
9. Select your machine and click **Next**.
10. Input the printer description and Next
11. When the add printer is done, click Finish
12. When the install is done, click Finish

### Add network Printer

1. Double-click the **Unified Driver Configurator**.
2. Click **Add Printer...**
3. The **Add printer wizard** window opens. Click **Next**.
4. Select **Network printer** and click the **Search** button.
5. The printer's IP address and model name appears on list field.
6. Select your machine and click **Next**.
7. Input the printer description and **Next**
8. When the add printer is done, click **Finish**.

## UNIX

To use UNIX Printer Driver, you have to install the UNIX printer driver package first, then setup the printer. You can download the UNIX Printer Driver package from the Samsung website.

### Installing the UNIX printer driver package

Installation procedure is common for all variants of UNIX OS mentioned.

1. From the Samsung website, download and unpack the UNIX Printer Driver package to your computer.
2. Acquire root privileges.  
**su -**
3. Copy appropriate driver archive to the target UNIX computer.

 See administration guide of your UNIX OS for details.

4. Unpack the UNIX printer driver package.  
For example, on IBM AIX use the following command(without ").  
**cd /tmp**  
**gzip -d < "package name" | tar xf -**  
The "**binaries**" folder consists of **binz**, **install**, **share** files and folders.
5. Copy the "**binaries**" folder to any local folder.
6. Change to the driver's "**binaries**" directory.  
**cd aix\_power/binaries**
7. Run the install script.  
**./install**  
**install** is the installer script file which is used to install or uninstall the UNIX Printer Driver package.  
Use "**chmod 755 install**" command to give the permission to the installer script.
8. Execute the "**./install -c**" command to verify install results.
9. Run '**installprinter**' from the command line. This will bring up the **Add Printer Wizard** window. Setup the printer in this window referring the procedure next.

 On some UNIX OS, for example on Solaris 10 just added printer may not be enabled and/or may not accept jobs. In this case run the following two commands on the root terminal:  
**accept <printer\_name>**  
**enable <printer\_name>**

### Uninstalling the printer driver package

 The uninstalling printer utility should be used to delete the printer installed in the system.

- a) Run "**uninstallprinter**" command from the terminal.  
It will open the **Uninstall Printer Wizard**  
The installed printers are listed in the drop-down list
- b) Select the printer to be deleted.
- c) Click **Delete** to delete the printer from the system.
- d) Execute the "**./install -d**" command to uninstall the whole package.
- e) To verify uninstall results, execute the "**./install -c**" command.

To reinstall it again, use the command "**./install**" to reinstall the binaries.

### Setting up the printer

To add the printer to your UNIX system, run 'installprinter' from the command line. This will bring up the Add Printer Wizard window. Setup the printer in this window according to the following steps:

1. Type the name of the printer.
2. Select appropriate printer model from model list.
3. Enter any description corresponding to the type of the printer in the **Type** field. This is optional.
4. Specify any printer description in the **Description** field. This is optional.
5. Specify printer location in the **Location** field.

6. Type the IP address or DNS name of the printer in the **Device** textbox for network-connected printers. On IBM AIX with **jetdirect Queue type** only DNS name is possible, numeric IP address is not allowed.
7. **Queue type** shows the connection as **lpd** or **jetdirect** in the corresponding list box. Additionally **usb** type is available on Sun Solaris OS.
8. Select **Copies** to set the number of copies.
9. Check the **Collate** option to receive copies already sorted.
10. Check the **Reverse Order** option to receive copies in the reverse order.
11. Check the **Make Default** option to set this printer as default.
12. Click **OK** to add the printer.

## Wireless network setup

 Make sure your machine supports a wireless network. Wireless network may not be available depending on the model.

## Getting started

### Understanding your network type

Typically, you can only have one connection between your computer and the machine at a time.

	<p><b>Infrastructure mode</b></p> <p>This is an environment generally used for homes and SOHOs (Small Office/ Home Office). This mode uses an access point to communicate with the wireless machine.</p>
	<p><b>Ad hoc mode</b></p> <p>This mode does not use an access point. The wireless computer and wireless machine communicates directly.</p>

### Wireless network name and network key

Wireless networks require higher security, so when an access point is first set up, a network name (SSID), the type of security used, and a Network Key are created for the network. Locate this information before proceeding with the machine installation.

## Choosing the installation type

You can install a wireless network from the machine's control panel or the computer.

### From the control panel

You can configure wireless parameters with the control panel.

- See "Using the WLAN" on page 32.

### From the computer

**From the computer, we recommend using a USB cable with the program provided in the supplied software CD.**

See "Setup using Windows" on page 32.

- **With a USB cable:** You can simply set up a wireless network using the program on the supplied software CD. Only Windows and

Macintosh operating systems are supported (see "Setup using Windows" on page 32 or "Setup using Macintosh" on page 35).

 You can also install a wireless network in Samsung Easy Printer Manager (**Device Settings**) or Printer Settings Utility with a USB cable after installing the driver (Windows and Macintosh operating systems are supported).

- **With a network cable:** You can set up a wireless network using the SyncThru™ Web Service program (see "Using a network cable" on page 37).

## Using the WLAN

 Some models may not support this feature.

Before starting, you will need to know the network name (SSID) of your wireless network and the network key if it is encrypted. This information was set when the access point (or wireless router) was installed. If you do not know about your wireless environment, please ask the person who set up your network.

 After completing the wireless network connection, you need to install a machine driver to print from an application (see "Installing wired network connected machine's driver" on page 28).

1. Press the Press  on on the control panel.
2. Press **Network > Wireless > WLAN Settings**.
3. Press the **OK** to select the setup method you want.
  - **Wizard (recommended):** In this mode the setup is automatic. Machine will display a list of available network to choose. After a network is chosen then printer will prompt for the corresponding security Key.
  - **Custom:** In this mode users can give their own SSID or edit SSID, choose the security manually and apply the settings.

## Setup using Windows

 Shortcut to **Wireless Setting** program without CD: If you have installed the printer driver once, you can access the **Wireless Setting** program without CD. From the Start menu, select **Programs** or **All Programs > Samsung Printers > your printer driver name > Wireless Setting Program**.

### Access point via USB cable

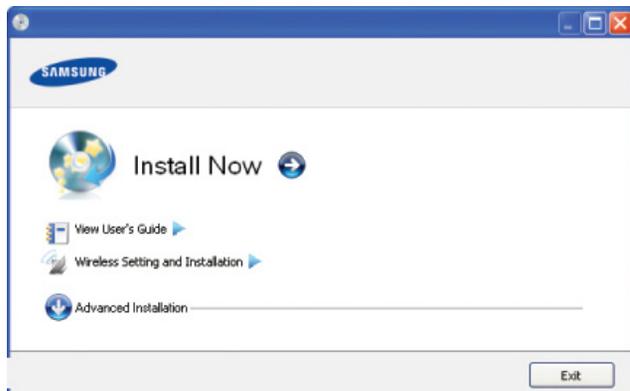
#### Items to prepare

- Access point
- Network-connected computer
- Software CD that was provided with your machine
- The machine installed with a wireless network interface
- USB cable

#### Creating the infrastructure network

1. Check whether the USB cable is connected to the machine.
2. Turn on your computer, access point, and machine.
3. Insert the supplied software CD into your CD-ROM drive.

4. Select the **Wireless Setting and Installation** option.



- **Install Now:** If you have already set up the wireless network, click this button to install the machine's driver to use the wireless network machine. If you have not set up the wireless network, click the **Wireless Setting and Installation** button to set up the wireless network before you click this button.
  - **Wireless Setting and Installation:** Configure the wireless network settings of your machine with a USB cable then install the machine driver. This is only for users who have not set up the wireless connection before.
5. Read the **License Agreement**, and select **I accept the terms of the License Agreement**. Then, click **Next**.
6. The software searches the wireless network.
7. After searching, the window shows the wireless network devices. Select the name (SSID) of the access point you are using and click **Next**.

If the search has failed, you may check if the USB cable is properly connected between the computer and machine, and follow the instructions on the window.

If you cannot find the network name you want to choose, or if you want to set the wireless configuration manually, click **Advanced Setting**.

- **Enter the wireless Network Name:** Enter the SSID of access point you want (SSID is case-sensitive).
- **Operation Mode:** Select **Infrastructure**.
- **Authentication:** Select an authentication type.
  - Open System:** Authentication is not used, and encryption may or may not be used, depending on the need for data security.
  - Shared Key:** Authentication is used. A device that has a proper WEP key can access the network.
  - WPA Personal or WPA2 Personal:** Select this option to authenticate the print server based on WPA Pre-Shared Key. This uses a shared secret key (generally called Pre-Shared Key pass phrase) which is manually configured on the access point and each of its clients.
- **Encryption:** Select the encryption (None, WEP64, WEP128, TKIP, AES, TKIP AES).
- **Network Key:** Enter the encryption network key value.
- **Confirm Network Key:** Confirm the encryption network key value.
- **WEP Key Index:** If you are using WEP Encryption, select the appropriate **WEP Key Index**.

The wireless network security window appears when the access point has security settings.

The wireless network security window appears. The window may differ according to its security mode: WEP, or WPA.

- **WEP**

Select **Open System** or **Shared Key** for the authentication and enter the WEP security key. Click **Next**.

WEP (Wired Equivalent Privacy) is a security protocol preventing unauthorized access to your wireless network. WEP encrypts the data portion of each packet exchanged on a wireless network using a 64-bit or 128-bit WEP encryption key.
- **WPA**

Enter the WPA shared key and click **Next**.

WPA authorizes and identifies users based on a secret key that changes automatically at regular intervals. WPA also uses TKIP (Temporal Key Integrity Protocol) and AES (Advanced Encryption Standard) for data encryption.

8. The window shows the wireless network settings and checks if the settings are correct. Click **Next**.
- For the DHCP method

If the IP address assignment method is DHCP, check if DHCP is shown in the window. If it shows Static, click **Change TCP/IP** to change the assignment method to DHCP.
  - For the Static method

If the IP address assignment method is Static, check if Static is shown in the window. If it shows DHCP, click **Change TCP/IP** to enter the IP address and other network configuration values for the machine. Before entering the IP address for the machine, you must know the computer's network configuration information. If the computer is set to DHCP, you must contact the network administrator to get the static IP address.

For example:

If the computer's network information is as shown below:

    - IP address: 169.254.133.42
    - Subnet Mask: 255.255.0.0

Then, the machine's network information should be as follows:

    - IP address: 169.254.133.43
    - Subnet Mask: 255.255.0.0 (Use the computer's subnet mask.)
    - Gateway: 169.254.133.1
9. When the wireless network setting is completed, disconnect the USB cable between the computer and machine. Click **Next**.
10. The **Wireless Network Setting Complete** window appears. Select **Yes** if you accept the current settings and continue the setup procedure. Select **No** if you want to return to the beginning screen. Then, click **Next**.
11. Click **Next** when the **Confirm Printer Connection** window appears.
12. Select the components to be installed. Click **Next**.
13. After selecting the components, you can also change the machine name, set the machine to be shared on the network, set the machine as the default machine, and change the port name of each machine. Click **Next**.
14. After the installation is finished, a window asking you to print a test page appears. If you want to print a test page, click **Print a test page**. Otherwise, just click **Next** and go to step 16.

15. If the test page prints out correctly, click **Yes**.

If not, click **No** to reprint it.

16. To register as a user of the machine in order to receive information from Samsung, click **On-line Registration**.

17. Click **Finish**.

### Ad hoc via USB cable

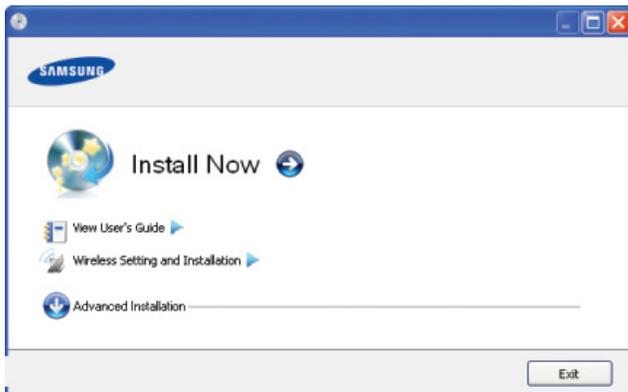
If you do not have an access point (AP), you may still connect the machine wirelessly to your computer by setting up an ad-hoc wireless network by following the simple steps below.

#### Items to prepare

- Network-connected computer
- Software CD that was provided with your machine
- The machine installed with a wireless network interface
- USB cable

#### Creating the ad hoc network in Windows

1. Check whether the USB cable is connected to the machine.
2. Turn on your computer and the wireless network machine.
3. Insert the supplied software CD into your CD-ROM drive.
4. Select the **Wireless Setting and Installation** option.



- **Install Now:** If you have already set up the wireless network, click this button to install the machine's driver to use the wireless network machine. If you have not set up the wireless network, click the **Wireless Setting and Installation** button to set up the wireless network before you click this button.
- **Wireless Setting and Installation:** Configure the wireless network settings of your machine with a USB cable then install the machine driver. This is only for users who have not set up the wireless connection before.

5. Read the **License Agreement**, and select **I accept the terms of the License Agreement**. Then, click **Next**.

6. The software searches the wireless network.



If the software has failed to search the network, check if the USB cable is connected properly between the computer and machine, and follow the instruction in the window.

7. After searching the wireless networks, a list of wireless networks your machine has searched appears.

If you want to use the Samsung default ad hoc setting, select the last wireless network on the list, **Network Name(SSID)** is **portthru** and **Signal** is **Printer Self Network**.

Then, click **Next**.

If you want to use other ad hoc settings, select another wireless

network from the list.



If you want to change ad hoc settings click the **Advanced Setting** button.

- **Enter the wireless Network Name:** Enter the SSID name you want (SSID is case-sensitive).
- **Operation Mode:** Select ad hoc.
- **Channel:** Select the channel. (**Auto Setting** or 2412 MHz to 2467 MHz).
- **Authentication:** Select an authentication type.
  - Open System:** Authentication is not used, and encryption may or may not be used, depending on the need for data security.
  - Shared Key:** Authentication is used. A device that has a proper WEP key can access the network.
- **Encryption:** Select the encryption (None, WEP64, WEP128).
- **Network Key:** Enter the encryption network key value.
- **Confirm Network Key:** Confirm the encryption network key value.
- **WEP Key Index:** If you are using WEP Encryption, select the appropriate **WEP Key Index**.

The wireless network security window appears when the ad hoc network has security setting.

The wireless network security window appears. Select **Open System** or **Shared Key** for the authentication and click **Next**.

- WEP (Wired Equivalent Privacy) is a security protocol preventing unauthorized access to your wireless network. WEP encrypts the data portion of each packet exchanged on a wireless network using a 64-bit or 128-bit WEP encryption key.

8. The window showing the wireless network setting appears. Check the settings and click **Next**.



Before entering the IP address for the machine, you must know the computer's network configuration information. If the computer's network configuration is set to DHCP, the wireless network setting should also be DHCP. Likewise, if the computer's network configuration is set to Static, the wireless network setting should also be Static.

If your computer is set to DHCP and you want to use the Static wireless network setting, you must contact the network administrator to get the static IP address.

#### • For the DHCP method

If the IP address assignment method is DHCP, check if DHCP is shown in the **Wireless Network Setting Confirm** window. If it shows Static, click **Change TCP/IP** to change the assignment method to **Receive IP address automatically (DHCP)**.

#### • For the Static method

If the IP address assignment method is Static, check if Static is shown in the **Wireless Network Setting Confirm** window. If it shows DHCP, click **Change TCP/IP** to enter the IP address and other network configuration values for the machine.

For example:

If the computer's network information is as shown follows:

- IP address: 169.254.133.42
- Subnet Mask: 255.255.0.0

Then, the machine's network information should be as

below:

- IP address: 169.254.133.43
- Subnet Mask: 255.255.0.0 (Use the computer's subnet mask.)
- Gateway: 169.254.133.1

9. When the wireless network settings are completed, disconnect the USB cable between the computer and machine. Click **Next**.

 If the **Change PC Network Setting** window appears, follow the steps in the window.

Click **Next** if you are finished with the computer's wireless network settings.

If you set the computer's wireless network on DHCP, it will take several minutes to receive the IP address.

10. The **Wireless Network Setting Complete** window appears. Select **Yes** if you accept the current settings and continue the setup procedure. Select **No** if you want to return to the beginning screen. Then, click **Next**.
11. Click **Next** when the **Confirm Printer Connection** window appears.
12. Select the components to be installed. Click **Next**.
13. After selecting the components, you can also change the machine name, set the machine to be shared on the network, set the machine as the default machine, and change the port name of each machine. Click **Next**.
14. After the installation is finished, a window asking you to print a test page appears. If you want to print a test page, click **Print a test page**. Otherwise, just click **Next** and go to step 16.
15. If the test page prints out correctly, click **Yes**. If not, click **No** to reprint it.
16. To register as a user of the machine in order to receive information from Samsung, click **On-line Registration**.
17. Click **Finish**.

## Setup using Macintosh

### Items to prepare

- Access point
- Network-connected computer
- Software CD that was provided with your machine
- The machine installed with a wireless network interface
- USB cable

### Access point via USB cable

1. Check whether the USB cable is connected to the machine.
2. Turn on your computer, access point, and machine.
3. Insert the supplied software CD into your CD-ROM drive.
4. Double-click the CD-ROM icon that appears on your Macintosh desktop.
5. Double-click the **MAC\_Installer** folder.
6. Double-click the **Installer OS X** icon.
7. Enter the password and click **OK**.
8. Click **Continue**.
9. Read the license agreement and click **Continue**.
10. Click **Agree** to agree to the license agreement.
11. Click **Continue**.

12. Select **Easy Install** and click **Install**. **Easy Install** is recommended for most users. All components necessary for machine operations will be installed.

If you select **Custom Install**, you can choose which individual operations will be installed.

13. Select the **Wireless Setting and Installation** option.

14. The software searches the wireless network.

 If the search has failed, you may check if the USB cable is connected between the computer and machine properly, and follow the instructions in the window.

15. After searching, the window shows the wireless network devices. Select the name (SSID) of the access point you are using and click **Next**.

 When you set the wireless configuration manually, click **Advanced Setting**.

- **Enter the wireless Network Name:** Enter the SSID of the access point you want with (SSID is case-sensitive).
- **Operation Mode:** Select **Infrastructure**.
- **Authentication:** Select an authentication type.  
**Open System:** Authentication is not used, and encryption may or may not be used, depending on the need for data security.  
**Shared Key:** Authentication is used. A device that has a proper WEP key can access the network.  
**WPA Personal or WPA2 Personal:** Select this option to authenticate the print server based on WPA Pre-Shared Key. This uses a shared secret key (generally called Pre-Shared Key pass phrase) that is manually configured on the access point and each of its clients.
- **Encryption:** Select the encryption. (None, WEP64, WEP128, TKIP, AES, TKIP, AES)
- **Network Key:** Enter the encryption network key value.
- **Confirm Network Key:** Confirm the encryption network key value.
- **WEP Key Index:** If you are using WEP Encryption, select the appropriate **WEP Key Index**.

The wireless network security window appears when the access point has security setting.

The wireless network security window appears. The window may differ according to its security mode: WEP or WPA.

- **WEP**

Select **Open System** or **Shared Key** for the authentication and enter the WEP security key. Click **Next**.

WEP (Wired Equivalent Privacy) is a security protocol preventing unauthorized access to your wireless network. WEP encrypts the data portion of each packet exchanged on a wireless network using a 64-bit or 128-bit WEP encryption key.

- **WPA**

Enter the WPA shared key and click **Next**.

WPA authorizes and identifies users based on a secret key that changes automatically at regular intervals. WPA also uses TKIP (Temporal Key Integrity Protocol) and AES (Advanced Encryption Standard) for data encryption.

16. The window shows the wireless network settings and check if settings are right. Click **Next**.

- **For the DHCP method**

If the IP address assignment method is DHCP, check if DHCP is shown in the window. If it shows Static, click **Change TCP/IP** to change the assignment method to DHCP.

- **For the Static method**

If the IP address assignment method is Static, check if Static is shown in the window. If it shows DHCP, click **Change TCP/IP** to enter the IP address and other network configuration values for the machine. Before entering the IP address for the machine, you must know the computer's network configuration information. If the computer is set to DHCP, you must contact the network administrator to get the static IP address.

For example:

If the computer's network information is as shown follows:

- IP address: 169.254.133.42
- Subnet Mask: 255.255.0.0

Then, the machine's network information should be as follows:

- IP address: 169.254.133.43
- Subnet Mask: 255.255.0.0 (Use the computer's subnet mask.)
- Gateway: 169.254.133.1

17. The wireless network connects according to the network configuration.

18. When the wireless network settings are completed, disconnect the USB cable between the computer and machine.

19. Follow the instructions on the screen to complete the installation. After the installation is finished, click **Quit** or **Restart**.

## Ad hoc via USB cable

If you do not have an access point (AP), you may still connect the machine wirelessly to your computer by setting up an ad hoc wireless network by following these simple directions.

### Items to prepare

- Network-connected computer
- Software CD that provided with your machine
- The machine installed with a wireless network interface
- USB cable

### Creating the ad hoc network in Macintosh

1. Check whether the USB cable is connected to the machine.
2. Turn on your computer and machine.
3. Insert the supplied software CD into your CD-ROM drive.
4. Double-click the CD-ROM icon that appears on your Macintosh desktop.
5. Double-click the **MAC\_Installer** folder.
6. Double-click the **Installer OS X** icon.
7. Enter the password and click **OK**.
8. Click **Continue**.
9. Read the license agreement and click **Continue**.
10. Click **Agree** to agree to the license agreement.
11. Select **Easy Install** and click **Install**. **Easy Install** is recommended for most users. All components necessary for machine operations will be installed.  
If you select **Custom Install**, you can choose individual operations will be installed.
12. Click **Wireless Setting and Installation**.
13. The software searches the wireless network devices.



If the search has failed, check if the USB cable is connected between the computer and machine properly, and follow the instructions in the window.

14. After searching the wireless networks, a list of wireless networks your machine has searched appears.

If you want to use the Samsung default ad hoc setting, select the last wireless network on the list, which **Network Name(SSID)** is **portthru** and **Signal** is **Printer Self Network**.

Then, click **Next**.

If you want to use other ad hoc settings, select another wireless network from the list.



If you want to change ad hoc settings click the **Advanced Setting** button.

- **Enter the wireless Network Name:** Enter the SSID name you want (SSID is case-sensitive).
- **Operation Mode:** Select ad hoc.
- **Channel:** Select the channel (**Auto Setting** or 2412 MHz to 2467 MHz).
- **Authentication:** Select an authentication type.  
**Open System:** Authentication is not used, and encryption may or may not be used, depending on the need for data security.  
**Shared Key:** Authentication is used. A device that has a proper WEP key can access the network.
- **Encryption:** Select the encryption (None, WEP64, WEP128).
- **Network Key:** Enter the encryption network key value.
- **Confirm Network Key:** Confirm the encryption network key value.
- **WEP Key Index:** If you are using WEP Encryption, select the appropriate **WEP Key Index**.



The wireless network security window appears when the ad hoc network has security setting.

The wireless network security window appears. Select **Open System** or **Shared Key** for the authentication and click **Next**.

- WEP (Wired Equivalent Privacy) is a security protocol preventing unauthorized access to your wireless network. WEP encrypts the data portion of each packet exchanged on a wireless network using a 64-bit or 128-bit WEP encryption key.

15. The window showing the wireless network settings appears. Check the settings and click **Next**.



Before entering the IP address for the machine, you must know the computer's network configuration information. If the computer's network configuration is set to DHCP, the wireless network setting should also be DHCP. Likewise, if the computer's network configuration is set to Static, the wireless network setting should also be Static.

If your computer is set to DHCP and you want to use Static wireless network setting, you must contact the network administrator to get the static IP address.

- **For the DHCP method**

If the IP address assignment method is DHCP, check if DHCP is shown in the **Wireless Network Setting Confirm** window. If it shows Static, click **Change TCP/IP** to change the assignment method to **Receive IP address automatically (DHCP)**.

- **For the Static method**

If the IP address assignment method is Static, check if Static is shown in the **Wireless Network Setting Confirm** window. If it shows DHCP, click **Change TCP/IP** to enter the IP address and other network configuration values for the machine.

For example:

If the computer's network information is as shown follows:

- IP address: 169.254.133.42
- Subnet Mask: 255.255.0.0

Then, the machine's network information should be as below:

- IP address: 169.254.133.43
- Subnet Mask: 255.255.0.0 (Use the computer's subnet mask.)
- Gateway: 169.254.133.1

16. The wireless network connects according to the network configuration.
17. When the wireless network setting is completed, disconnect the USB cable between the computer and machine.
18. Follow the instructions on the screen to complete the installation. After the installation is finished, click **Quit** or **Restart**.

## Using a network cable

Your machine is a network compatible machine. To enable your machine to work with your network, you will need to perform some configuration procedures.

-  After completing the wireless network connection, you need to install a machine driver to print from an application (See "Installing wired network connected machine's driver" on page 28).
- See your network administrator, or the person that set up your wireless network, for information about your network configuration.

## Items to prepare

- Access point
- Network-connected computer
- Software CD that was provided with your machine
- The machine installed with a wireless network interface
- Network cable

## Printing a network configuration report

You can identify the network settings of your machine by printing a network configuration report.

See "Printing Network Configuration report" on page 26.

## IP setting using SetIP Program (Windows)

This program is used to manually set the network IP address of your machine using its MAC address to communicate with the machine. The MAC address is the hardware serial number of the network interface and can be found in the **Network Configuration Report**.

See "Setting IP address" on page 27.

## Configuring the machine's wireless network

Before starting you will need to know the network name (SSID) of your wireless network and the network key if it is encrypted. This information was set when the access point (or wireless router) was installed. If you do not know about your wireless environment, please ask the person who set up your network.

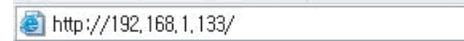
To configure wireless parameters, you can use **SyncThru™ Web Service**.

## Using SyncThru™ Web Service

Before starting wireless parameter configuration, check the cable connection status.

1. Check whether or not the network cable is connected to the machine. If not, connect the machine with a standard network cable.
2. Start a web browser such as Internet Explorer, Safari or Firefox and enter your machine's new IP address in the browser window.

For example,



3. Click **Login** on the upper right of the SyncThru™ Web Service website.
4. Type in the **ID** and **Password** then click **Login**.
  - **ID:** admin
  - **Password:** sec00000
5. When the **SyncThru™ Web Service** window opens, click **Network Settings**.
6. Click **Wireless > Wizard**.

 **Wizard** will help you setup the wireless network configuration. However, if you want to set the wireless network directly, select **Custom**.

7. Select the one **Network Name(SSID)** in the list.
  - **SSID:** SSID (Service Set Identifier) is a name that identifies a wireless network, access points, and wireless devices attempting to connect to a specific wireless network must use the same SSID. The SSID is case-sensitive.
  - **Operation Mode:** **Operation Mode** refers to the type of wireless connections (See "Wireless network name and network key" on page 32).
    - **Ad-hoc:** Allows wireless devices to communicate directly with each other in a peer-to-peer environment.
    - **Infrastructure:** Allows wireless devices to communicate with each other through an access point.

 If your network's **Operation Mode** is **Infrastructure**, select the SSID of the access point. If the **Operation Mode** is **Ad-hoc**, select the machine's SSID. Note that "portthru" is the default SSID of your machine.

8. Click **Next**.

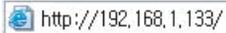
If the wireless security setting window appears, enter the registered password (network key) and click **Next**.
9. The confirmation window appears, please check your wireless setup. If the setup is right, click **Apply**.

 Disconnect the network cable (standard or network). Your machine should then start communicating wirelessly with the network. In case of Ad-hoc mode, you can use a wireless LAN and wired LAN simultaneously.

## Turning the Wi-Fi network on/off

1. Check whether the network cable is connected to the machine. If not, connect the machine with a standard network cable.
2. Start a web browser such as Internet Explorer, Safari or Firefox and enter your machine's new IP address in the browser window.

For example,



3. Click **Login** on the upper right of the SyncThru™ Web Service website.
4. Type in the **ID** and **Password** then click **Login**.
  - **ID: admin**
  - **Password: sec00000**
5. When the **SyncThru™ Web Service** window opens, click **Network Settings**.
6. Click **Wireless > Custom**.  
You can also turn the Wi-Fi network on/off.

## Troubleshooting

### Problems during setup or driver installation

#### Printers Not Found

- Your machine may not be turned on. Turn on your computer and the machine.
- USB cable is not connected between your computer and machine. Connect machine to your computer using the USB cable.
- The machine does not support a wireless network. Check the machine's user's guide included on the software CD supplied with your machine and prepare a wireless network machine.

#### Connecting Failure - Not Found SSID

- The machine is unable to search the network name (SSID) you have selected or entered. Check the network name (SSID) on your access point and try connecting again.
- Your access point is not turned on. Turn on your access point.

#### Connecting Failure - Invalid Security

- You configured security incorrectly. Check the configured security on your access point and machine.

#### Connecting Failure - General Connection Error

- Your computer is not receiving a signal from your machine. Check the USB cable and your machine's power.

#### Connecting Failure - Connected Wired Network

- Your machine is connected with a wired network cable. Remove the wired network cable from your machine.

#### PC Connection Error

- The configured network address is unable to connect between your computer and machine.
  - For a DHCP network environment  
The receives the IP address automatically (DHCP) when computer is configured to DHCP.
  - For a Static network environment  
The machine uses the static address when the computer is configured to static address.  
For example:  
If the computer's network information is as shown below:
    - IP address: 169.254.133.42
    - Subnet Mask: 255.255.0.0Then, the machine's network information should be as below:
    - IP address: 169.254.133.**43**
    - Subnet Mask: 255.255.0.0 (Use the computer's subnet mask.)

- Gateway: 169.254.133.1

### Other problems

If problems occur while using the machine on a network, check the following:



For information on the access point (or wireless router), refer to its own user's guide.

- Your computer, access point (or wireless router), or machine may not be turned on.
- Check the wireless reception around the machine. If the router is far from the machine or there is an obstacle, you might have difficulty receiving the signal.
- Cycle the power for the access point (or wireless router), machine, and computer. Sometimes cycling the power can recover network communication.
- Check whether firewall software (V3 or Norton) is blocking the communication.

If the computer and the machine are connected on the same network and it cannot be found when searching, firewall software might be blocking the communication. Refer to the user's guide for the software to turn it off and try searching for the machine again.

- Check whether the machine's IP address is allocated correctly. You can check the IP address by printing the network configuration report.
- Check whether the access point (or wireless router) has a configured security (password). If it has a password, refer to the access point (or wireless router) administrator.
- Check the machine's IP address. Reinstall the machine driver and change the settings to connect to the machine on the network. Due to the characteristics of DHCP, the allocated IP address could change if the machine is not used for a long time or if the access point has been reset.
- Check the wireless environment. You might not be able to connect to the network in the infrastructure environment where you need to type in a user's information before connecting to access point (or wireless router).
- This machine only supports IEEE 802.11 b/g/n and Wi-Fi. Other wireless communication types (e.g., Bluetooth) are not supported.
- When using the ad hoc mode, in operating systems such as Windows Vista, you might need to set the wireless connection setting every time you use the wireless machine.
- You cannot use Infrastructure mode and Ad hoc mode at the same time for Samsung wireless network machines.
- The machine is within the range of the wireless network.
- The machine is located away from obstacles that could block the wireless signal.  
Remove any large metal objects between the access point (or wireless router) and the machine.  
Make sure the machine and wireless access point (or wireless router) are not separated by poles, walls, or support columns containing metal or concrete.
- The machine is located away from other electronic devices that may interfere with the wireless signal.  
Many devices can interfere with the wireless signal, including a microwave oven and some Bluetooth devices.

## IPv6 configuration

 **IPv6** is supported properly only in Windows Vista or higher.

### Activating IPv6

1. Connect your machine to the network with a network cable.
2. Turned on the machine.
3. Press  on the control panel.
4. Press up/down arrow to highlight **Network** and press **OK**.
5. Press up/down arrow to highlight **TCP/IP (IPv6)** and press **OK**.
6. Press up/down arrow to highlight **IPv6 Activate** and press **OK**.
7. Press up/down arrow to highlight **On** and press **OK**.
8. Turn the machine off and turn it on again.
9. Print a **Network Configuration Report** from the machine's control panel that will check IPv6 addresses.

-  1. Press  on the control panel.
2. Press up/down arrow to highlight **Network** and press **OK**.
  3. Press up/down arrow to highlight **Network Configuration** and press **OK**.

### Using IPv6

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

1. Connect your machine to the network with a network cable.
2. Turn on the machine.
3. Print a **Network Configuration Report** that will check IPv6 addresses.
4. Select **Start > Control Panel > Printers and Faxes**.
5. Click **Add a printer** in the left pane of the **Printers and Faxes** windows.
6. Click **Add a network, wireless or Bluetooth printer** in the **Add Printer** windows.
7. The **Add Printer Wizard** window appears. Follow the instructions in the window.

 If the machine does not work in the network environment, activate IPv6.

### Setting IPv6 addresses

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.

### DHCPv6 address configuration (Stateful)

If you have a DHCPv6 server on your network, you can set one of the following options for default dynamic host configuration.

1. Press  on the control panel.
2. Press up/down arrow to highlight **Network** and press **OK**.
3. Press up/down arrow to highlight **TCP/IP (IPv6)** and press **OK**.
4. Press up/down arrow to highlight **DHCPv6 Config** and press **OK**.
5. Press up/down arrow to access the required value.
  - **Routers:** Use DHCPv6 only when requested by a router.

- **DHCPv6 Addresses:** Always use DHCPv6 regardless of router request.
- **DHCPv6 Off:** Never use DHCPv6 regardless of router request.

6. Press **OK**.

### Manual address configuration

1. Start a web browser such as Internet Explorer that supports IPv6 addressing as a URL (See "Connecting SyncThru™ Web Service" on page 39).

 For IPv4, enter the IPv4 address (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 the SyncThru™ Web Service website.  
A log-in page appears.
3. Type in the **ID** and **Password** then click **Login** .  
If it's your first time logging into SyncThru™ Web Service, type in the below default ID and password.

- **ID:** admin
- **Password:** sec00000

4. When the **SyncThru™ Web Service** window opens, click **Settings > Network Settings**.
5. Click **TCP/IPv6**.
6. Enable the **Manual Address** In the **TCP/IPv6** section.

 **IPv6 Protocol** should enable.

7. Select the **Address / Prefix** and click the **Add** button, then the router prefix will automatically be entered into the address field.  
Enter the rest of address. (ex: 3FFE:10:88:194::AAAA. "A" is the hexadecimal 0 through 9, A through F.)
8. Click the **Apply** button.

### Connecting SyncThru™ Web Service

1. Start a web browser such as Internet Explorer that supports IPv6 addressing as a URL .
2. Click **Go** to access the SyncThru™ Web Service.
3. Click **Login** on the upper right of the SyncThru™ Web Service website.  
A log-in page appears.
4. Type in the **ID** and **Password** then click **Login** .  
If it's your first time logging into SyncThru™ Web Service, type in the below default ID and password.

- **ID:** admin
- **Password:** sec00000

5. Select one of the IPv6 addresses (**Link-local Address, Stateless Address, Stateful Address, Manual Address**) from **Network Configuration Report**.
6. Enter the IPv6 addresses. (ex: http://[FE80::215:99FF:FE66:7701])

 Address must be enclosed in '[' brackets.

# basic setup

After installation is complete, you may want to set the machine's default settings. Refer to the next section if you would like to set or change values. This chapter gives you step-by-step instructions for setting up the machine.

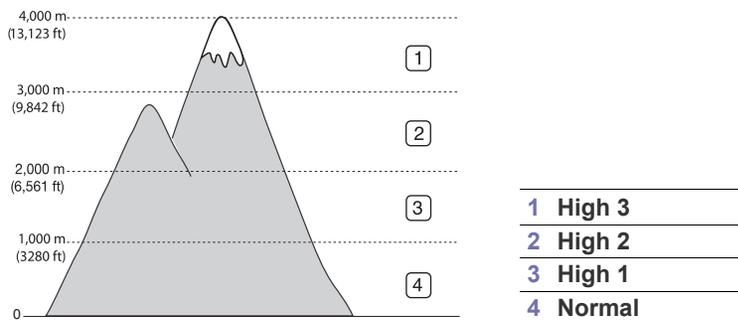
## This chapter includes:

- Altitude adjustment
- Setting the date and time
- Changing the clock mode
- Changing the display language

## Altitude adjustment

The 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 to the best print quality or best quality of print.

Before you set the altitude value, find the altitude where you are using the machine.



- For Windows user, see "Device Settings" on page 62.
- For Macintosh, Linux, or Unix OS user, see "Using Smart Panel (Macintosh and Linux only)" on page 62.

- If your machine is connected to the network, you can set the altitude via SyncThru™ Web Service.
- You can also set the altitude in **System Setup** option on the machine's display.

## Setting the date and time

When you set the time and date, they are used in delay print. They are printed on reports. If, however, they are not correct, you need to change it for the correct time being.

- If the machine's power is cut off, you need to reset the correct time and date once the power has been restored.

1. Press on the control panel.
2. Press up/down arrow to highlight **System Setup** and press **OK**.
3. Press up/down arrow to highlight **Date & Time** and press **OK**.
4. Press up/down arrow to select the date and time you want.
5. press **OK** to save the selection.

- Setting job timeout
- Using power saving feature
- Setting the default tray and paper
- Changing font setting

6. Press to return to ready mode.

- This menu item is available when the optional hard disk is installed.

## Changing the clock mode

You can set your machine to display the current time using either a 12-hour or 24-hour format.

1. Press on the control panel.
2. Press the up/down arrow to highlight **System Setup** and press **OK**.
3. Press the up/down arrow to highlight **Clock Mode** and press **OK**.
4. Press the up/down arrow to select the other mode and press **OK**.
5. Press to return to ready mode.

- This menu item is available when the optional hard disk is installed.

## Changing the display language

To change the language that appears on the display, follow the steps below:

1. Press on the control panel.
2. Press up/down arrow to highlight **System Setup** and press **OK**.
3. Press up/down arrow to highlight **Language** and press **OK**.
4. Press up/down arrow to display the language you want.
5. press **OK** to save the selection.
6. Press to return to ready mode.

## Setting job timeout

When there is no input for a certain period of time, the machine exits the current menu and goes in to the default settings. You can set the amount of time the machine will wait.

1. Press on the control panel.
2. Press up/down arrow to highlight **System Setup** and press **OK**.
3. Press up/down arrow to highlight **Job Timeout** and press **OK**.
4. Press up/down arrow to select the time you want.
5. press **OK** to save the selection.
6. Press to return to ready mode.

## Using power saving feature

When you are not using the machine for a while, use this feature to save power.

1. Press  on the control panel.
2. Press up/down arrow to highlight **System Setup** and press **OK**.
3. Press up/down arrow to highlight **Power Save** and press **OK**.
4. Press up/down arrow to select the time you want.
5. Press **OK** to save the selection.
6. Press  to return to ready mode.

 When printing continuously (over 200 pages), power save mode is extended to about 30 minutes to adjust image.

## Setting the default tray and paper

You can select the tray and paper you would like to keep using for printing job. (See "Paper" on page 57.)

### In the control panel

1. Press  on the control panel.
2. Press up/down arrow to highlight **Paper** and press **OK**.
3. Press up/down arrow to select the paper tray you want press **OK**.
4. Press up/down arrow to highlight **Paper Size** and press **OK**.
5. Press up/down arrow to select the paper size you want.
6. Press **OK** to save the selection.
7. Press up/down arrow to highlight **Paper Type** and press **OK**.
8. Press up/down arrow to select the paper type you want.
9. Press **OK** to save the selection.
10. Press .
11. Press up/down arrow to highlight **Paper Source** and press **OK**.
12. Press up/down arrow to select the paper tray you want.
13. Press **OK** to save the selection.
14. Press  to return to ready mode.

### In the computer

#### Windows

1. Click the Windows **Start** menu.
2. For Windows 2000, select **Settings > Printers**.
  - For Windows XP/2003, select **Printers and Faxes**.
  - For Windows 2008/Vista, select **Control Panel > Hardware and Sound > Printers**.
  - For Windows 7, select **Control Panel > Hardware and Sound > Devices and Printers**.
  - For Windows Server 2008 R2, select **Control Panel > Hardware > Devices and Printers**.
3. Right-click your machine.
4. For Windows XP/2003/2008/Vista, press **Printing Preferences**. For Windows 7 and Windows Server 2008 R2, from context menus, select the **Printing Preferences**.

 If **Printing Preferences** item has ► mark, you can select other printer drivers connected with selected printer.

5. Click **Paper** tab.
6. Select tray and its options, such as paper size and type.
7. Press **OK**.

#### Macintosh

Macintosh does not support this function. Macintosh users need to change the default setting manually each time they want to print using other settings.

1. Open a Macintosh application and select the file you want to print.
2. Open the **File** menu and click **Print**.
3. Go to **Paper Feed** pane.
4. Set appropriate tray from which you want to print.
5. Go to **Paper** pane.
6. Set paper type to correspond to the paper loaded in the tray from which you want to print.
7. Click **Print** to print.

## Changing font setting

Your machine has preset the font for your region or country.

If you want to change the font or set the font for special condition, such as the DOS environment, you can change the font setting from **Device Settings** or **Emulation** section.

- For Windows user, see "Device Settings" on page 62.
- For Macintosh, Linux, or Unix OS user, see "Using Smart Panel (Macintosh and Linux only)" on page 62.

 Following information shows the proper font list for corresponding languages.

- **Russian:** CP866, ISO 8859/5 Latin Cyrillic
- **Hebrew:** Hebrew 15Q, Hebrew-8, Hebrew-7 (Israel only)
- **Greek:** ISO 8859/7 Latin Greek, PC-8 Latin/Greek
- **Arabic & Farsi:** HP Arabic-8, Windows Arabic, Code Page 864, Farsi, ISO 8859/6 Latin Arabic
- **OCR:** OCR-A, OCR-B

# media and tray

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

## This chapter includes:

- Selecting print media
- Changing the tray size
- Loading paper in the tray

## 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 meet the guidelines for use with your machine.

### Guidelines to 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 92.)
- 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 section and still not produce satisfactory results. This may be the result of 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 specifications in this user's guide and meets your output requirements.

- Using print media that does not meet these specifications may cause problems, requiring repairs. Such repairs are not covered by the warranty or service agreements.
- Using inflammable print media can cause a fire.
- Use designated print media (See "Print media specifications" on page 92).

- The use of inflammable 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 92.)

- Printing on special media
- Setting the paper size and type
- Using the output support

## Media sizes supported in duplex mode

Mode	Size	Type	Source
Duplex printing <sup>a</sup>	Letter, A4, Legal, US Folio, Oficio	Plain, Color, Preprinted, Recycled, Thick <sup>b</sup> , Thin <sup>c</sup>	<ul style="list-style-type: none"><li>• tray 1</li><li>• optional trays</li><li>• multi-purpose tray</li></ul>

a. 60 to 120 g/m<sup>2</sup> (16~32 lb bond) only.

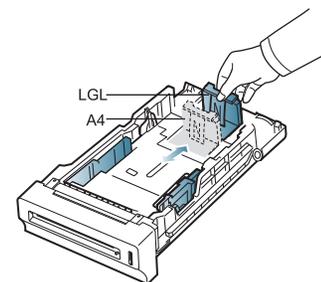
b. If media weight is 120 g/m<sup>2</sup> (32 lb bond), load a paper into the multi-purpose tray one by one.

c. If media weight is 60 g/m<sup>2</sup> (16 lb bond), select the Thin type.

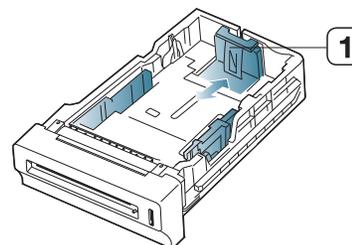
## Changing the tray size

The tray is preset to Letter or A4 size, depending on your country. To change the size, you need to adjust the paper guides.

1. Push the back plate of the tray outwards completely so that it can extend the length of the tray.



2. Squeeze the paper length guide and slide it to the correct position for the paper size you are loading, which is marked at the bottom of the tray.



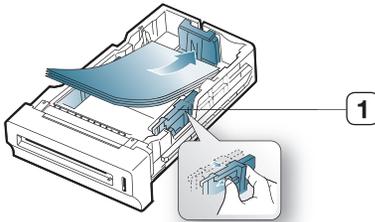
### 1 Paper length guide

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



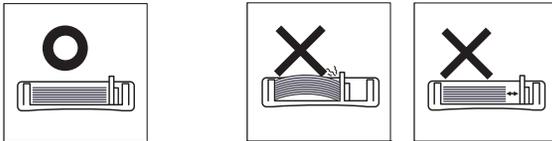
- To keep paper with perforated lines from sticking together when printing, you must fan the sheets before feeding them into the machine.

4. After inserting paper into the tray, squeeze the paper width guides and slide them to the desired paper size marked at the bottom of the tray.



#### 1 Paper width guide

- 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.



## Loading paper in the tray

### Tray 1 / optional trays

Load the print media you use for the majority of your print jobs into tray 1. Tray 1 can hold a maximum of 500 sheets of plain paper.

You can purchase an optional tray and attach it below the standard tray to load an additional 500 sheets of plain paper. (See "Available supplies" on page 83.)

- Using photographic paper or coated paper may cause problems, requiring repairs. Such repairs are not covered by the warranty or service agreements.

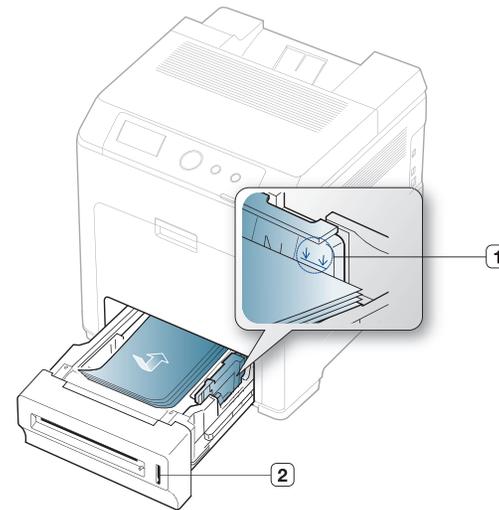
1. Pull out tray. And adjust the tray size to the media size you are loading. (See "Changing the tray size" on page 42.)
2. Flex or fan the edge of the paper stack to separate the pages before loading papers.



- To keep paper with perforated lines from sticking together when printing, you must fan the sheets before feeding them into the

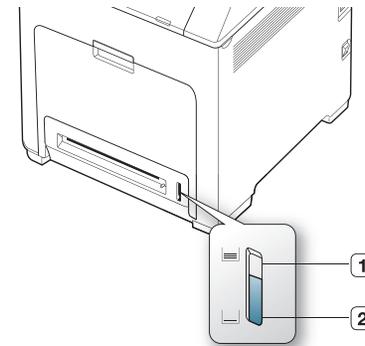
machine.

3. Place paper with the side you want to print facing up.



1 Paper limit mark  
2 Paper level indicator

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



1 Full  
2 Empty

4. When you print a document, set the paper type and size for the tray.

For information about setting the paper type and size on the control panel. (See "Setting the paper size and type" on page 47.)

- If you experience problems with paper feeding, check whether the paper meets the media specification. Then, try placing one sheet at a time in the multi-purpose tray. (See "Print media specifications" on page 92.)
- The settings made from the machine driver override the settings on the control panel.
    - a) To print in application, open an application and start the print menu.
    - b) Open **Printing Preferences**. (See "Opening printing preferences" on page 48.)
    - c) Press the **Paper** tab in **Printing Preferences**, and select an appropriate paper type. For example, if you want to use a label, set the paper type to **Label**.
    - d) Select tray in paper source, then press **OK**.
    - e) Start printing in application.

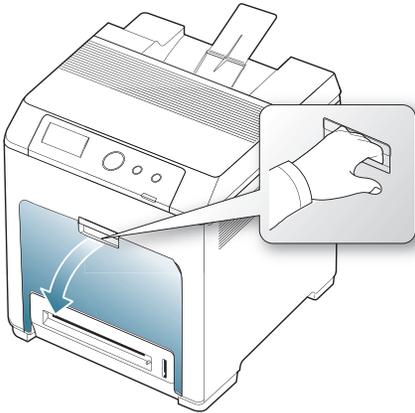
## Multi-purpose tray

The multi-purpose tray can hold special sizes and types of print material, such as postcards, note cards, and envelopes. It is useful for single page printing on letterhead or colored paper.

- Print media should be loaded face down with the top edge going into the multi-purpose tray first and be placed in the center of the tray.

### Tips on using the multi-purpose tray

- Load only one type, size and weight of print media at a time in the multi-purpose tray.
  - To prevent paper jams, do not add paper while printing when there is still paper in the multi-purpose tray. 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 92.)
  - Flatten any curl on postcards, envelopes, and labels before loading them into the multi-purpose tray.
- Hold the handle of multi-purpose tray and pull it down to open.

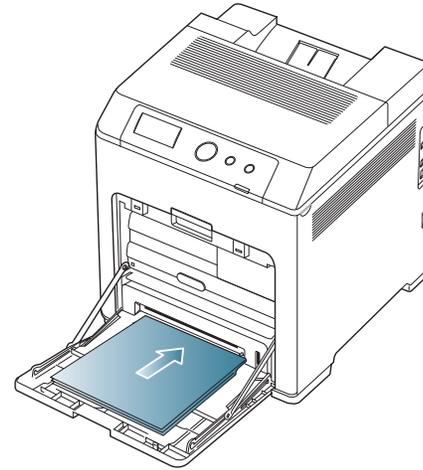


- Flex or fan the edge of the paper stack to separate the pages before loading papers.

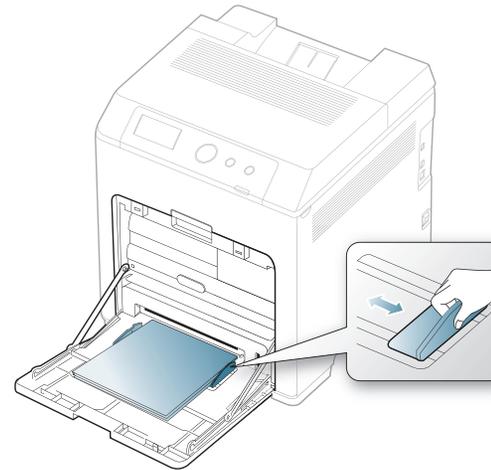


- To keep paper with perforated lines from sticking together when printing, you must fan the sheets before feeding them into the machine.

- Load the paper.



- Squeeze the multi-purpose tray 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 45.)
  - When papers overlap when printing using Multi-purpose tray, open tray 1 and remove overlapping papers then try printing again.
  - When paper does not feed well while printing, push the paper in manually until it starts feeding automatically.
- When you print a document, set the paper type and size for the multi-purpose tray.  
For information about setting the paper type and size on the control panel. (See "Setting the paper size and type" on page 47.)
    - The settings made from the machine driver override the settings on the control panel.
      - To print in application, open an application and start the print menu.
      - Open **Printing Preferences**. (See "Opening printing preferences" on page 48.)
      - Press the **Paper** tab in **Printing Preferences**, and select an appropriate paper type.

For example, if you want to use a label, set the paper type to **Label**.

- d) Select **MP Tray** in paper source, then press **OK**.
- e) Start printing in application.
- f) After printing, close the multi-purpose tray.

## Printing on special media

The table below shows the available special media for each tray.

 When using special media, we recommend you feed one paper at a time. Check the maximum input number of media for each tray. (See "Print media specifications" on page 92.)

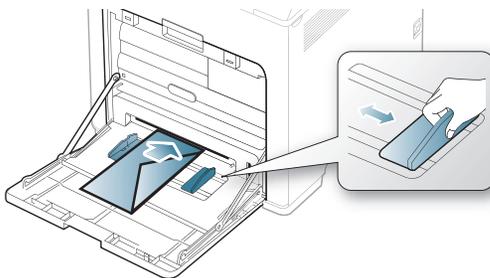
Types	Tray 1	Optional trays	Multi-purpose tray
Plain	•	•	•
Thick	•	•	•
Thicker	•	•	•
Extra Thicker	•	•	•
Thin	•	•	•
Cotton	•	•	•
Color	•	•	•
Preprinted	•	•	•
Recycled	•	•	•
Envelope			•
Transparency			•
Labels			•
CardStock			•
Bond			•
Archive			•

( •: Included, Blank: Not available)

### Envelope

Successful printing on envelopes depends upon the quality of the envelopes.

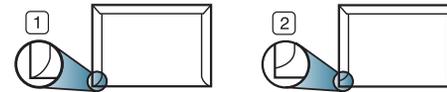
To print an envelope, place it flap side up with the stamp area bottom the top right side.



- When selecting envelopes, consider the following factors:
  - **Weight:** The weight of the envelope paper should not exceed

90 g/m<sup>2</sup> otherwise, jam may occur.

- **Construction:** Prior to printing, envelopes should lie flat with less than 6 mm curl, and should not contain air.
- **Condition:** Envelopes should not be wrinkled, nicked, nor damaged.
- **Temperature:** Use envelopes that are compatible with 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

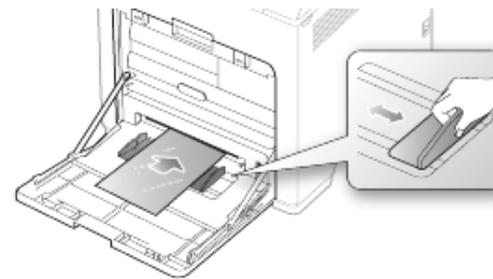
2 Unacceptable

- 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. To view the fusing temperature, check your machine's specification. (See "General specifications" on page 91.) 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.

### Transparency

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

 In case of color printing using transparencies, the picture quality would be lower than mono printing when the printouts are used on the overhead projector.



- Transparencies used in the machine must be able to withstand machine's fusing temperature.
- Place them on a flat surface after removing them from the machine.
- Do not leave unused transparencies in the paper tray for long periods of time. Dust and dirt may accumulate on them, resulting in spotty printing.
- To avoid smudging caused by fingerprints, handle them carefully.
- To avoid fading, do not expose printed transparencies to prolonged sunlight.
- Ensure that transparencies are not wrinkled, curled, or have any torn edges.
- Do not use transparencies that separates from the backing sheet.

- To prevent transparencies from sticking to each other, do not let the printed sheets stack up as they are begin printed out.
- Recommended media: Transparency for color laser printers produced by Xerox, such as 3R 91331(A4) and 3R 2780(Letter), are recommended.

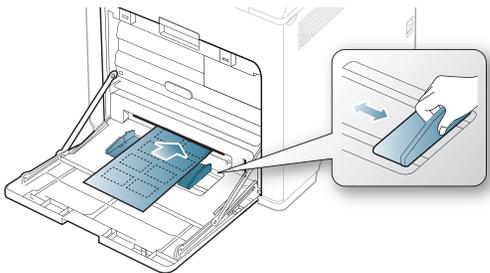
Base type transparency (ex. Xerox 3R3117) results in better image and paper handling quality than paper backed (ex. Xerox 3R3028) or removable stripe (3R3108) ones.



- Transparency with static electricity can cause image quality problems.
- Depending on the selection or storage conditions of the transparency, jam or image scratch might occur.

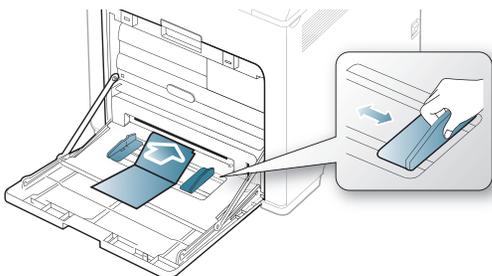
## Labels

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



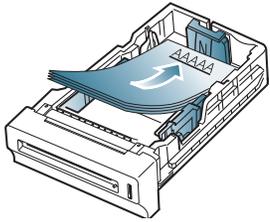
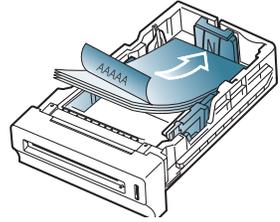
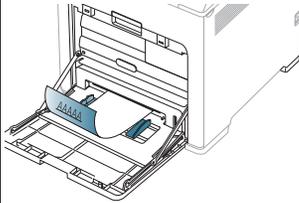
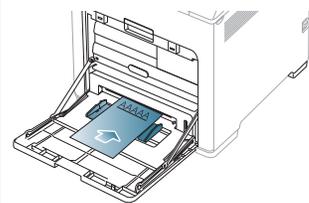
- When selecting labels, consider the following factors:
  - **Adhesives:** The adhesive material should be stable at your machine's fusing temperature. Check your machine's specification to view the fusing temperature. (See "General specifications" on page 91.)
  - **Arrangement:** Only use labels with no exposed backing between them. Labels can peel off sheets that have spaces between the labels, causing serious jams.
  - **Curl:** Prior to printing, labels must lie flat with no more than 13 mm 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



- Do not print on media smaller than 76 mm (3 inches) wide or 127 mm (5 inches) long.
- In the software application, set margins at least 6.4 mm (0.25 inches) away from the edges of the material.

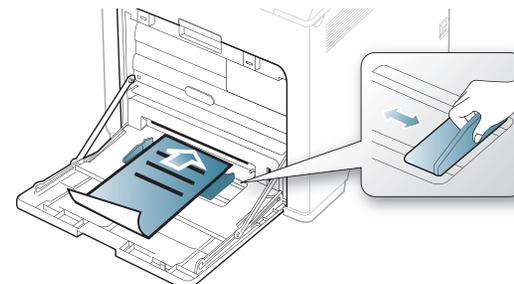
## Letterhead / Preprinted paper

	Single-sided	double-sided
<b>Tray1/Optional trays</b>	Face up 	Face down 
<b>Multi-purpose tray</b>	Face down 	Face up 

- Letterhead/ Preprinted paper 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. Check your machine's specification to view the fusing temperature. (See "General specifications" on page 91.)
- Letterhead/ Preprinted paper ink must be non-flammable and should not adversely affect machine rollers.
- Forms and letterhead should be sealed in a moisture-proof wrapping to prevent changes during storage.
- Before you load letterhead/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.

## Used paper

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



- Used paper 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. Check your machine's specification to view the fusing temperature. (See "General specifications" on page 91.)

- Used paper ink must be non-flammable and should not adversely affect machine rollers.
- Before you load used paper, verify that the ink on the paper is dry. During the fusing process, wet ink can come off used paper, reducing print quality.

## Photo

- Make sure not to use the inkjet photo paper with this machine. It could cause damage to the machine.

## Glossy

 Load one paper to the multi-purpose tray at a time, glossy side facing down.

- Recommended media: Glossy paper (Letter) for this machine by **HP Brochure Paper** (Product: Q6611A) only.
- Recommended media: Glossy paper (A4) for this machine by **HP Superior Paper 160 glossy** (Product: Q6616A).

## Setting the paper size and type

After loading paper in the paper tray, set the paper size and type using the control panel. For computer printing, select the paper size and type in the application program, select the **Paper** tab in the **Printing Preferences**. (See "Opening printing preferences" on page 48.)

 The settings made from the machine driver override the settings on the control panel.

1. Press  on the control panel.
2. Press up/down arrow to highlight **Paper** and press **OK**.
3. Press up/down arrow to select the paper tray you want press **OK**.
4. Press up/down arrow to highlight **Paper Size** and press **OK**.
5. Press up/down arrow to select the paper size you want.
6. Press **OK** to save the selection.
7. Press up/down arrow to highlight **Paper Type** and press **OK**.
8. Press up/down arrow to select the paper type you want.
9. Press **OK** to save the selection.
10. Press .
11. Press up/down arrow to highlight **Paper Source** and press **OK**.
12. Press up/down arrow to select the paper tray you want.
13. Press **OK** to save the selection.
14. Press  to return to ready mode.

 If you want to use special-sized paper-such as a billing paper, select **Custom** in the **Paper** tab in the **Printing Preferences**. (See "Opening printing preferences" on page 48.)

## Using the output support

 The surface of the output tray may become hot if you print a large number of pages at once. Make sure that you do not touch the surface, and do not allow children near it.

The printed pages stack on the output support, and the output support will help the printed pages to align. Unfold the output support.



# printing

This chapter explains common printing tasks.

**This chapter includes:**

- Basic printing
- Changing the default print settings
- Setting your machine as a default machine
- Using advanced print features

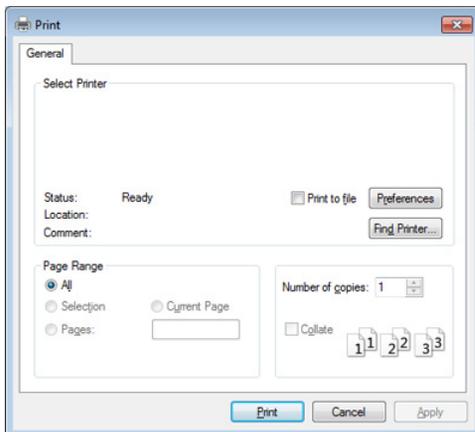
 The procedures in this chapter are mainly based on Windows 7.

## Basic printing

### Printing

The following **Printing Preferences** window is for Notepad in Windows 7.

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 48).

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:

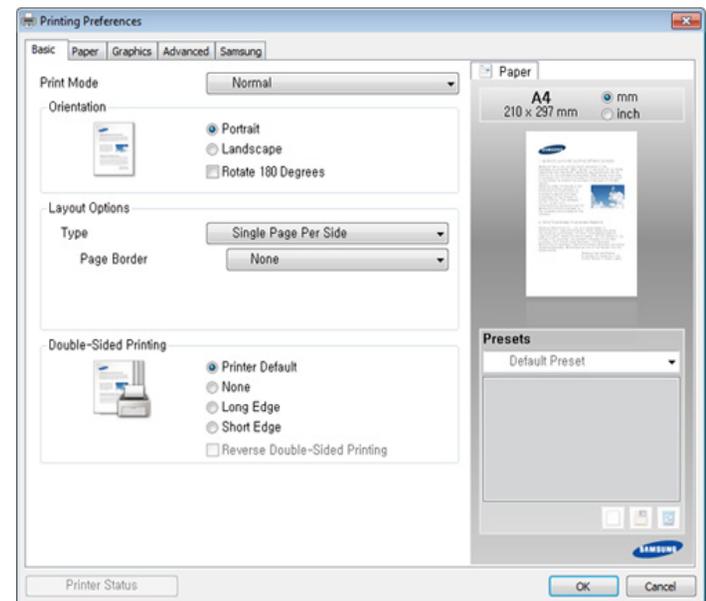
- You can access this window by simply double-clicking the machine icon () in the Windows task bar.
- You can also cancel the current job by pressing  on the control panel.

- Using Direct Printing Utility (Windows only)
- Macintosh printing
- Linux printing
- Unix printing

### Opening printing preferences

-  • The **Printing Preferences** window that appears in this user's guide may differ depending on the machine in use. However, the composition of the **Printing Preferences** window is similar.
- When you select an option in **Printing Preferences**, you may see a warning mark, , or . An exclamation mark () means you can select that certain option but it is not recommended, and () 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.
3. Select your machine from the **Select Printer**.
4. Click **Properties** or **Preferences**.



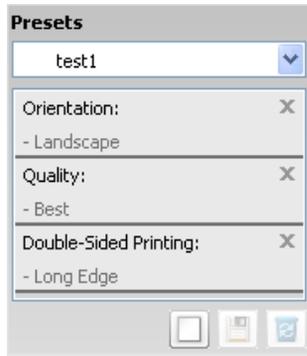
 You can check the machine's current status using the **Printer Status** button.

### Using a favorite setting

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

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

1. Change the settings as needed on each tab.
2. Enter a name for the item in the **Presets** input box.



3. Click  (**Add**). When you save **Presets**, all current driver settings are saved.

 Select more options and click  (**Update**), settings will be added to the Presets you made. To use a saved setting, select it from the **Presets** drop-down list. The machine is now set to print according to the settings you have selected. To delete saved settings, select it from the **Presets** drop-down list and click  (**Delete**).

You can also restore the printer driver's default settings by selecting **Default Preset** from the **Presets** drop-down list.

## Using help

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

## Changing the default print settings

1. Click the Windows **Start** menu.
  - For Windows Server 2000, select **Settings > Printers**.
  - For Windows XP/Server 2003, select **Printer and Faxes**.
  - For Windows Server 2008/Vista, select **Control Panel > Hardware and Sound > Printers**.
  - For Windows 7, select **Control Panel > Devices and Printers**.
  - For Windows Server 2008 R2, select **Control Panel > Hardware > Devices and Printers**.

2. Right-click on your machine.

3. For Windows XP/Server 2003/Server 2008/Vista, select **Printing Preferences**.

For Windows 7 or Windows Server 2008 R2, from context menus, select **Printing preferences**.

 If **Printing preferences** has a ►, you can select other printer drivers connected to the selected printer.

4. Change the settings on each tab.
5. Click **OK**.

 If you want to change the settings for each print job, change it in **Printing Preferences**.

## Setting your machine as a default machine

1. Click the Windows **Start** menu.
  - For Windows Server 2000, select **Settings > Printers**.

- For Windows XP/Server 2003, select **Printer and Faxes**.
- For Windows Server 2008/Vista, select **Control Panel > Hardware and Sound > Printers**.
- For Windows 7, select **Control Panel > Devices and Printers**.
- For Windows Server 2008 R2, select **Control Panel > Hardware > Devices and Printers**.

2. Select your machine.

3. Right-click your machine and select **Set as Default Printer**.

 For Windows 7 or Windows Server 2008 R2, if **Set as default printer** has a ►, you can select other printer drivers connected to the selected printer.

## Using advanced print features

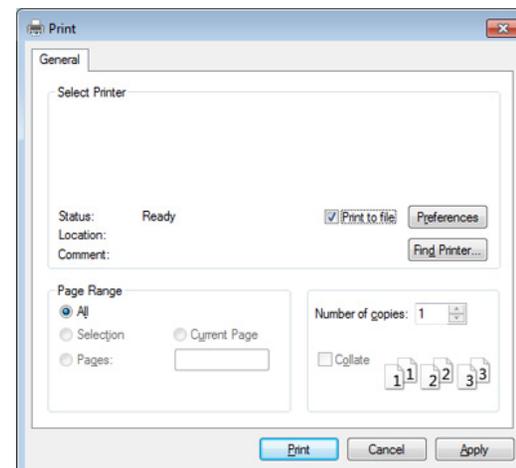
 **XPS printer driver:** used to print XPS file format.

- The XPS printer driver can be installed only on Windows Vista OS or higher.
- You can install the XPS printer driver when you insert the software CD into your CD-ROM drive. When the installation window appears, select **Advanced Installation > Custom Installation**. You can select the XPS printer driver in the **Select Software and Utilities to Install** window.
- Install optional memory when an XPS job does not print because the printer is out of memory.

## Printing to a file (PRN)

You will sometimes need to save the print data as a file.

1. Check the **Print to file** box in the **Print** window.



2. Click **Print**.

3. Type in the destination path and the file name, and then click **OK**. For example, **c:\Temp\file name**.

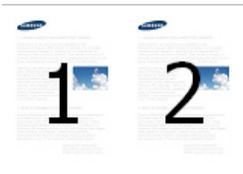
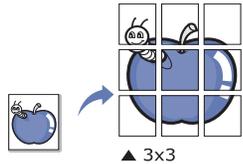
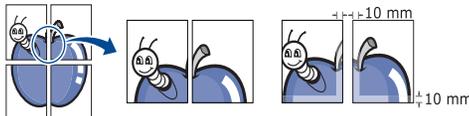
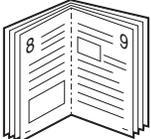
 If you type in only the file name, the file is automatically saved in **My Documents**, **Documents and Settings**, or **Users**. The saved folder may differ, depending on your operating system or the application you are using.

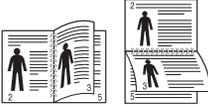
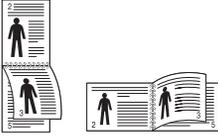
## Understanding special printer features

You can use advanced printing features when using your machine.

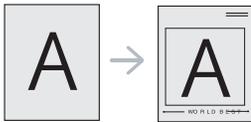
To take advantage of the printer features provided by your printer driver, click **Properties** or **Preferences** in the application's **Print** window to change the print settings. The machine name, that appears in the printer properties window may differ depending on the machine in use.

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

Item	Description
<p><b>Multiple Pages per Side</b></p> 	<p>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.</p>
<p><b>Poster Printing</b></p>  <p>▲ 3x3</p>	<p>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.</p> <p>Select the <b>Poster Overlap</b> value. Specify <b>Poster Overlap</b> in millimeters or inches by selecting the radio button on the upper right of <b>Basic</b> tab to make it easier to paste the sheets together.</p> 
<p><b>Booklet Printing</b></p> 	<p>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.</p> <p>If you want to make a booklet, you need to print on Letter, Legal, A4, US Folio, or Oficio sized print media.</p> <p> The <b>Booklet Printing</b> option is not available for all paper sizes. Select the available paper <b>Size</b> option under the <b>Paper</b> tab to see what paper sizes are available.</p> <p>If you select an unavailable paper size, this option can be automatically canceled. Select only available paper (paper without  or  mark).</p>

Item	Description
<p><b>Double-sided Printing</b></p>	<p>Print on both sides of a sheet of paper (duplex). Before printing, decide how you want your document oriented.</p> <p> • You can use this feature with Letter, Legal, A4, US Folio or Oficio sized paper</p> <p>• If your machine does not have a duplex unit, you should complete the printing job manually. The machine prints every other page of the document first. After that, a message appears on your computer.</p> <p>• <b>Skip Blank Pages</b> feature does not work when you select the duplex option.</p>
<p><b>Double-sided Printing (Option)</b></p>	<p>• <b>Printer Default:</b> If you select this option, this feature is determined by the settings you have selected on the control panel of the machine. This option is available only when you use the PCL/XPS printer driver.</p> <p>• <b>None:</b> Disables this feature.</p> <p>• <b>Long Edge:</b> This option is the conventional layout used in bookbinding.</p>  <p>• <b>Short Edge:</b> This option is the conventional layout used in calendars.</p>  <p>• <b>Reverse Double-Sided Printing:</b> Check this option to reverse the print order when duplex printing.</p>
<p><b>Paper Options</b></p> 	<p>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.</p>
<p><b>Watermark</b></p> 	<p>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 <b>"DRAFT"</b> or <b>"CONFIDENTIAL"</b> printed diagonally across the first page or all pages of a document.</p>

Item	Description
<b>Watermark (Creating a watermark)</b>	<ol style="list-style-type: none"> <li>1 To change the print settings from your software application, access <b>Printing Preferences</b>.</li> <li>2 Click the <b>Advanced</b> tab, select <b>Edit</b> from the <b>Watermark</b> drop-down list. The <b>Edit Watermarks</b> window appears.</li> <li>3 Enter a text message in the <b>Watermark Message</b> box. You can enter up to 256 characters. The message displays in the preview window.</li> </ol>
<b>Watermark (Editing a watermark)</b>	<ol style="list-style-type: none"> <li>1 To change the print settings from your software application, access <b>Printing Preferences</b>.</li> <li>2 Click the <b>Advanced</b> tab, select <b>Edit</b> from the <b>Watermark</b> drop-down list. The <b>Edit Watermarks</b> window appears.</li> <li>3 Select the watermark you want to edit from the <b>Current Watermarks</b> list and change the watermark message and options.</li> <li>4 Click <b>Update</b> to save the changes.</li> <li>5 Click <b>OK</b> or <b>Print</b> until you exit the <b>Print</b> window.</li> </ol>
<b>Watermark (Deleting a watermark)</b>	<ol style="list-style-type: none"> <li>1 To change the print settings from your software application, access <b>Printing Preferences</b>.</li> <li>2 Click the <b>Advanced</b> tab, select <b>Edit</b> from the <b>Watermark</b> drop-down list. The <b>Edit Watermarks</b> window appears.</li> <li>3 Select the watermark you want to delete from the <b>Current Watermarks</b> list and click <b>Delete</b>.</li> <li>4 Click <b>OK</b> or <b>Print</b> until you exit the <b>Print</b> window.</li> </ol>

Item	Description
<b>Overlay</b> 	<p>This option is available only when you use the PCL printer driver.</p> <p>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.</p> <p>To use a page overlay, you must create a new page overlay containing your logo or image.</p> <ul style="list-style-type: none"> <li>• The overlay document size must be the same as the document you print with the overlay. Do not create an overlay with a watermark.</li> <li>• The resolution of the overlay document must be the same as that of the document you will print with the overlay.</li> </ul>
<b>Overlay (Creating a new page overlay)</b>	<ol style="list-style-type: none"> <li>1 To save the document as an overlay, access <b>Printing Preferences</b>.</li> <li>2 Click the <b>Advanced</b> tab, and select <b>Edit</b> from the <b>Text</b> drop-down list. <b>Edit Overlay</b> window appears.</li> <li>3 In the <b>Edit Overlay</b> window, click <b>Create</b>.</li> <li>4 In the <b>Save As</b> window, type a name up to eight characters in the <b>File name</b> box. Select the destination path, if necessary (The default is <b>C:\Formover</b>).</li> <li>5 Click <b>Save</b>. The name appears on the <b>Overlay List</b>.</li> <li>6 Click <b>OK</b> or <b>Print</b> until you exit the <b>Print</b> window.</li> </ol> <p>The file is not printed. Instead, it is stored on your computer hard disk drive.</p>

Item	Description
<b>Overlay</b> (Using a page overlay)	<ol style="list-style-type: none"> <li>1 Click the <b>Advanced</b> tab.</li> <li>2 Select the desired overlay from the <b>Text</b> drop-down list.</li> <li>3 If the overlay file you want does not appear in the <b>Text</b> drop-down list, select <b>Edit...</b> from the list and click <b>Load</b>. Select the overlay file you want to use.</li> </ol> <p>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 <b>Open</b> window.</p> <p>After you select the file, click <b>Open</b>. The file appears in the <b>Overlay List</b> box and is available for printing. Select the overlay from the <b>Overlay List</b> box.</p> <ol style="list-style-type: none"> <li>4 If necessary, check <b>Confirm Page Overlay When Printing</b> box. If this box is checked, a message window appears each time you submit a document for printing, asking you to confirm printing an overlay on your document.</li> </ol> <p>If this box is not checked and an overlay has been selected, the overlay automatically prints with your document.</p> <ol style="list-style-type: none"> <li>5 Click <b>OK</b> or <b>Print</b> until you exit the <b>Print</b> window.</li> </ol>
<b>Overlay</b> (Deleting a page overlay)	<ol style="list-style-type: none"> <li>1 In the <b>Printing Preferences</b> window, click the <b>Advanced</b> tab.</li> <li>2 Select <b>Edit</b> in the <b>Text</b> drop down list.</li> <li>3 Select the overlay you want to delete from the <b>Overlay List</b> box.</li> <li>4 Click <b>Delete</b>.</li> <li>5 When a confirming message window appears, click <b>Yes</b>.</li> <li>6 Click <b>OK</b> or <b>Print</b> until you exit the <b>Print</b> window. You can delete page overlays that you no longer use.</li> </ol>

Item	Description
<b>Print Mode</b>	 <ul style="list-style-type: none"> <li>• This feature is available only if you have installed the optional hard disk.</li> <li>• Some menus may not appear on the display depending on options or models. If so, it is not applicable to your machine.</li> <li>• You can see the print job list you set in the printer driver's <b>Print Mode</b> in the <b>Job Management</b> menu.</li> <li>• <b>Print Mode:</b> The default <b>Print Mode</b> is <b>Normal</b>, which is for printing without saving the printing file in the memory. <ul style="list-style-type: none"> <li>- <b>Normal:</b> This mode prints without storing your document in the optional memory.</li> <li>- <b>Proof:</b> 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.</li> <li>- <b>Confidential:</b> This mode is used for printing confidential documents. You need to enter a password to print.</li> <li>- <b>Store:</b> Select this setting to save a document in the hard disk without printing.</li> <li>- <b>Store and Print:</b> This mode is used when printing and storing document at the same time.</li> <li>- <b>Spool:</b> This option can be useful when handling large amounts of data. If you select this setting, the printer spools the document into the hard disk and then prints it from the hard disk queue, decreasing the computer's work load.</li> <li>- <b>Print Schedule:</b> Select this setting to print the document at a specified time.</li> </ul> </li> <li>• <b>User ID:</b> This option is used when you need to find a saved file using the control panel.</li> <li>• <b>Job Name:</b> This option is used when you need to find a saved file using the control panel.</li> </ul>

## Using Direct Printing Utility (Windows only)

### What is Direct Printing Utility?

Direct Printing Utility is a program that sends PDF files directly to your machine to print without having to opening the file.

To install this program, select **Advanced Installation > Custom Installation** and put a check mark in this program when you install the printer driver.



- For some models, a hard disk drive (HDD) should be installed or memory inserted to properly run utilities. Otherwise, they should be installed.
- You cannot print PDF files that are restricted. Deactivate the

printing restriction feature and retry printing.

- You cannot print PDF files that are restricted by a password. Deactivate the password feature, and retry printing.
- Whether or not a PDF file can be printed using the Direct Printing Utility program depends on how the PDF file was created.
- The Direct Printing Utility program supports PDF version 1.7 and below. For higher versions, you must open the file to print it.

## Printing

There are several ways you can print using the Direct Printing Utility.

1. From the **Start** menu select **Programs** or **All Programs > Samsung Printers > Direct Printing Utility > Direct Printing Utility**. The Direct Printing Utility window appears.
2. Select your machine from the **Select Printer** drop-down list and click **Browse**.
3. Select the file you wish to print and click **Open**. The file is added in the **Select Files** section.
4. Customize the machine settings for your needs.
5. Click **Print**. The selected PDF file is sent to the machine.

## Using the right-click menu

1. Right-click on the PDF file to print and select **Direct Printing**. The Direct Printing Utility window appears with the PDF file is added.
2. Select the machine to use.
3. Customize the machine settings.
4. Click **Print**. The selected PDF file is sent to the machine.

## Macintosh printing



Some features may not be available depending on models or options. It means that the features are not supported.

## Printing a document

When you print with a Macintosh, you need to check the printer driver settings in each application you use. Follow the steps below to print from a Macintosh:

1. Open the document to print.
2. Open the **File** menu and click **Page Setup (Document Setup** in some applications).
3. Choose your paper size, orientation, scaling, other options, and make sure that your machine is selected. Click **OK**.
4. Open the **File** menu and click **Print**.
5. Choose the number of copies and indicate which pages to print.
6. Click **Print**.

## Changing printer settings

You can use advanced printing features when using your machine.

Open an application and select **Print** from the **File** menu. The machine name, which appears in the printer properties window, may differ depending on the machine in use. Except for the name, the composition of the printer properties window is similar to the following.

## Printing multiple pages on one sheet

You can print more than one page on a single sheet of paper. This feature provides a cost-effective way to print draft copies.

1. Open an application, and select **Print** from the **File** menu.
2. Select **Layout** from the drop-down list under **Orientation**. In the **Pages per Sheet** drop-down list, select the number of pages you want to print on one sheet of paper.
3. Select the other options to use.
4. Click **Print**.

The machine prints the selected number of pages to print on one sheet of paper.

## Printing on both sides of the paper



Some features may not be available depending on models or options. It means that the features are not supported.

Before printing in the duplex mode, decide on which edge you will be binding your finished document. The binding options are, as follows:

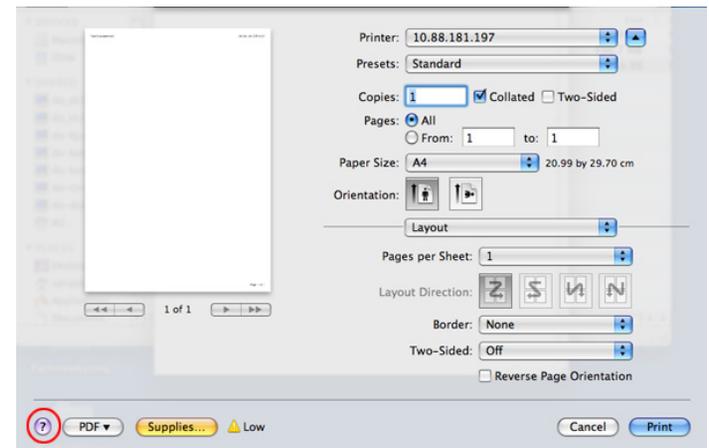
- **Long-Edge Binding:** This option is the conventional layout used in book binding.
  - **Short-Edge Binding:** This option is the type often used with calendars.
1. From your Macintosh application, select **Print** from the **File** menu.
  2. Select **Layout** from the drop-down list under **Orientation**.
  3. Select a binding orientation from the **Two-Sided** option.
  4. Select the other options to use.
  5. Click **Print** and the machine prints on both sides of the paper.



If you print more than 2 copies, the first copy and the second copy might print on the same sheet of paper. Avoid printing on both sides of paper when you are printing more than 1 copy.

## Using help

Click the question mark on the bottom-left corner of the window and click on the topic you want to know about. A pop-up window appears with information about that option's feature, which is provided from the driver.



## Linux printing



Some features may not be available depending on models or options. It means that the features are not supported.

## Printing from applications

There are a lot of Linux applications that allow you to print using Common UNIX Printing System (CUPS). You can print on your machine from any such application.

1. Open an application, and select **Print** from the **File** menu
2. Select **Print** directly using `lpr`.
3. In the LPR GUI window, select the model name of your machine from the printer list and click **Properties**.
4. Change the print job properties using the following four tabs displayed at the top of the window.
  - **General:** Changes the paper size, the paper type, and the orientation of the documents. It enables the duplex feature, adds start and end banners, and changes the number of pages per sheet.
    -  Automatic/manual duplex printing may not be available depending on models. You can alternatively use the `lpr` printing system or other applications for odd-even printing.
  - **Text:** Specifies the page margins and set the text options, such as spacing or columns.
  - **Graphics:** Sets image options that are used when printing image files, such as color options, image size, or image position.
  - **Advanced:** Sets the print resolution, paper source, and destination.
5. Click **Apply** to apply the changes and close the **Properties** window.
6. Click **OK** in the **LPR GUI** window to start printing.
7. The Printing window appears, allowing you to monitor the status of your print job.
  - To abort the current job, click **Cancel**.

## Printing files

You can print many different types of files on your machine using the standard CUPS, directly from the command line interface. The CUPS `lpr` utility allows you to do that, but the driver's package replaces the standard `lpr` tool by a much more user-friendly LPR GUI program.

To print any document file:

1. Enter `lpr <file_name>` from the Linux shell command line and press Enter. The **LPR GUI** window appears.
  - When you type only `lpr` and press **Enter**, the **Select file(s) to print** window appears first. Just select any files you want to print and click **Open**.
2. In the **LPR GUI** window, select your machine from the list, and change the print job properties.
3. Click **OK** to start printing.

## Configuring Printer Properties

Using the **Printer Properties** window provided by the **Printers configuration**, you can change the various properties for your machine as a printer.

1. Open the **Unified Driver Configurator**.
  - If necessary, switch to **Printers configuration**.
2. Select your machine on the available printers list and click **Properties**.
3. The **Printer Properties** window appears.
  - The following five tabs display at the top of the window:
    - **General:** Allows you to change the printer location and name. The name entered in this tab displays on the printer list in **Printers configuration**.
    - **Connection:** Allows you to view or select another port. If you change the machine port from USB to parallel or vice versa while in use, you must re-configure the machine port in this tab.
    - **Driver:** Allows you to view or select another machine driver. By clicking **Options**, you can set the default device options.
    - **Jobs:** Shows the list of print jobs. Click **Cancel job** to cancel the selected job and select the **Show completed jobs** check box to see

previous jobs on the job list.

- **Classes:** Shows the class that your machine is in. Click **Add to Class** to add your machine to a specific class or click **Remove from Class** to remove the machine from the selected class.
4. Click **OK** to apply the changes and close the **Printer Properties** window.

## Unix printing

 Some features may not be available depending on models or options. It means that the features are not supported.

## Proceeding the print job

After installing the printer, choose any of the image, text, PS or HPGL files to print.

1. Execute "`printui <file_name_to_print>`" command.
  - For example, if you are printing "`document1`"

```
printui document1
```

This will open the UNIX Printer Driver **Print Job Manager** in which the user can select various print options.
2. Select a printer that has been already added.
3. Select the printing options from the window such as **Page Selection**.
4. Select how many copies are needed in **Number of Copies**.
  -  To take advantage of the printer features provided by your printer driver, press **Properties** (see "Changing printer settings" on page 53).
5. Press **OK** to start the print job.

## Changing the machine settings

The UNIX printer driver **Print Job Manager** in which the user can select various print options in printer **Properties**.

The following hot keys may also be used: "H" for **Help**, "O" for **OK**, "A" for **Apply**, and "C" for **Cancel**.

### General tab

- **Paper Size:** Set the paper size as A4, Letter, or other paper sizes, according to your requirements.
- **Paper Type:** Choose the type of the paper. Options available in the list box are **Printer Default**, **Plain**, and **Thick**.
- **Paper Source:** Select from which tray the paper is used. By default, it is **Auto Selection**.
- **Orientation:** Select the direction in which information is printed on a page.
- **Duplex:** Print on both sides of paper to save paper.

 Automatic/manual duplex printing may not be available depending on models. You can alternatively use the `lpr` printing system or other applications for odd-even printing.

- **Multiple pages:** Print several pages on one side of the paper.
- **Page Border:** Choose any of the border styles (e.g., **Single-line hairline**, **Double-line hairline**)

### Image tab

In this tab, you can change the brightness, resolution, or image position of your document.

### **Text tab**

Set the character margin, line space, or the columns of the actual print output.

### **HPGL/2 tab**

- **Use only black pen:** To print all graphics in black.
- **Fit plot to page:** Fit the entire graphic into a single page.
- **Pen Width:** Change value to increase the thickness of pen lines. By default, it is 1000.

### **Margins tab**

- **Use Margins:** Set the margins for the document. By default, margins are not enabled. The user can change the margin settings by changing the values in the respective fields. Set by default, these values depend on the page size selected.
- **Unit:** Change the units to points, inches, or centimeters.

### **Printer-Specific Settings tab**

Select various options in the **JCL** and **General** frames to customize various settings. These options are specific to the printer and depend on the PPD file.

# machine status and advanced features

This chapter explains how to browse the current status of your machine, and the method of setting for the advanced machine setup. Read this chapter carefully in order to use your machine's diverse features.

## This chapter includes:

- Accessing the Menu
- Information
- Layout
- Paper
- Graphic
- System Setup
- Emulation
- Color
- Network
- Job Management

## Accessing the Menu

1. Press  on the control panel.
2. Press up/down arrow to highlight the desired setting and press **OK**.
3. If the setting item has sub menus, repeat step 2.
4. Press up/down arrow to access the required value.
5. Press **OK** to save the selection.
6. If you want to move to the upper level menus, press .
7. Press  to return to ready mode.

## Information

Option	Description
<b>Menu Map</b>	You can print the menu map which shows the layout and current settings of this machine.
<b>Configuration</b>	You can print a report on the machine's overall configuration.
<b>Supplies Info.</b>	You can print the supply information page.
<b>Demo Page</b>	You can print the demo page whether your machine is printing properly or not.
<b>PCL Font</b>	You can print the PCL font list.
<b>PS Font</b>	You can print the PS font list.
<b>Stored Jobs<sup>a</sup></b>	You can print jobs currently stored in the hard disk.
<b>Completed Jobs<sup>a</sup></b>	You can print the list of completed print jobs.
<b>Usage Counter<sup>a</sup></b>	The usage page contains the total number of pages printed by person or group.
<b>Account</b>	You can print a report on the number of printouts.

a. This menu item is available when the optional hard disk is installed.

## Layout

Item	Description
<b>Orientation</b>	This menu allows you to select the direction in which information is printed on a page.
<b>Common Margin</b>	Set the margins for print materials. The margins you set here will be applied when printing from all trays. <ul style="list-style-type: none"><li>• <b>Simplex:</b> Set the margin of print materials for one-sided printing.</li><li>• <b>Duplex:</b> Set the margins for double-sided printing.</li><li>• <b>Binding:</b> When printing on both sides of paper, side A's margin closest to the binding will be the same as side B's margin closest to the binding. Likewise, the sides' margins farthest from the binding will be the same.</li></ul>
<b>&lt;Tray X&gt;</b>	Set the margins for print materials. The margins you set here will be applied when printing from the tray1 and optional trays. <ul style="list-style-type: none"><li>• <b>Simplex:</b> Set the margin of print materials for one-sided printing.</li><li>• <b>Duplex:</b> Set the margins for double-sided printing.</li></ul>
<b>MP Tray</b>	Set the margins for print materials. The margins you set here will be applied when printing from the multi-purpose tray. <ul style="list-style-type: none"><li>• <b>Simplex:</b> Set the margin of print materials for one-sided printing.</li><li>• <b>Duplex:</b> Set the margins for double-sided printing.</li></ul>
<b>Emulation Margin</b>	When creating an emulation print page which does not include margin information, the machine uses the margin value set here. <ul style="list-style-type: none"><li>• <b>Top Margin:</b> Set the top margin, from 0.0 to 250mm.</li><li>• <b>Left Margin:</b> Set the left margin, from 0.0 to 164mm.</li></ul>

Item	Description
<b>Duplex</b>	To print on both sides of paper, choose the binding edge. <ul style="list-style-type: none"> <li>• <b>Off:</b> Set this option off.</li> <li>• <b>Long Edge:</b> This item is the conventional layout used in bookbinding.</li> <li>• <b>Short Edge:</b> This item is the conventional layout used in calendars.</li> </ul>

## Paper

Option	Description
<b>Copies</b>	You can select the maximum amount of copies.
<b>MP Tray [Tray&lt;x&gt;]</b>	<ul style="list-style-type: none"> <li>• <b>Paper Size:</b> You can select the default paper size.</li> <li>• <b>Paper Type:</b> You can select the default paper type for the print media.</li> </ul>
<b>Paper Source</b>	You can select the tray to process the print job. If you select <b>Auto</b> , your machine supplies the paper from the multi-purpose tray first, than the tray 1, and tray 2 for the last. So if any tray is empty, then the machine try to search the paper from the next available tray.
<b>Auto Tray Switch</b>	<p>This is the option to set if the machine is to continue printing or not when any tray becomes empty. For example, if both tray 1 and tray 2 are filled with the same size paper, the machine automatically prints from tray 2 after the tray 1 runs out of paper.</p> <p> This option does not appear if you selected <b>Auto</b> for <b>Paper Source</b>.</p>
<b>Tray Confirm</b>	<p>Allows you to select the tray and paper for a printing job. <b>Tray Confirm</b> activates the window asking whether you set the paper size and type for the tray that was just opened.</p> <ul style="list-style-type: none"> <li>• With this option <b>On</b> and both tray1 and tray2 are filled with letter size paper, the machine automatically prints from tray2 after tray1 is empty.</li> </ul>

## Graphic

Option	Description
<b>Resolution</b>	<p>You can select the default resolution. If the resolution is high, the clarity of the printouts is sharper, but the print time may take longer.</p> <ul style="list-style-type: none"> <li>• <b>600dpi-Normal:</b> If your print jobs are mostly text, select this option for the highest quality output.</li> <li>• <b>1200dpi-Best:</b> Select this option when your job contains bitmapped images, such as scanned photos or certain business graphics, that will benefit from enhanced line screening.</li> </ul>
<b>Edge Enhance</b>	It allows user to enhance sharpness of text and graphics for improving readability.
<b>Trapping</b>	It reduces the white gap caused by misalignment of color channels in color printing mode. Also black text will be overprinted on other colors.
<b>Clear Text</b>	Select this option to print texts darker than on a normal document.
<b>Screen</b>	<p>This option affect the resolution and clarity of your color output.</p> <ul style="list-style-type: none"> <li>• <b>Normal:</b> This mode will generate printouts with smooth tone over the entire page.</li> <li>• <b>Enhanced:</b> This mode will generate printouts with sharp texts and smooth graphic/photo objects in the page.</li> <li>• <b>Detailed:</b> This mode will generate printouts with sharp details over the entire page.</li> </ul>

## System Setup

Option	Description
<b>Date &amp; Time<sup>a</sup></b>	You can set the date and time. (See "Setting the date and time" on page 40.)
<b>Clock Mode<sup>a</sup></b>	You can set your machine to display the current time using either a 12-hour or 24-hour format. (See "Changing the clock mode" on page 40.)
<b>Form Menu<sup>a</sup></b>	<ul style="list-style-type: none"> <li>• <b>Off:</b> Prints in normal mode.</li> <li>• <b>Single Form:</b> Prints all page using the first form.</li> <li>• <b>Double Form:</b> Prints the front page using the first form and the back page using the second form.</li> </ul>

Option	Description
<b>Select Form<sup>a</sup></b>	Form overlay is images stored in the printer hard disk drive (HDD) as a special file format that can be printed in layers on any document. (See "Form file" on page 89.)  <ul style="list-style-type: none"> <li>• <b>Select Form</b> is not displayed when <b>Form Menu</b> is set as <b>Off</b>.</li> <li>• <b>2nd Form</b> is displayed when <b>Form Menu</b> is set as <b>Double Form</b>.</li> </ul>
<b>Language</b>	Allows you to change the language that appears on the display. (See "Changing the display language" on page 40.)
<b>Power Save</b>	Reduce energy consumption by setting power saving features. (See "Using power saving feature" on page 41.)
<b>Wakeup Event</b>	You can set the condition to wake up from power-save mode. Set the item on. <ul style="list-style-type: none"> <li>• <b>Button Press:</b> When you press power button, the machine wake up from the power save mode.</li> <li>• <b>Printer:</b> When you open or close the paper tray, the machine wake up from the power save mode.</li> </ul>
<b>Auto Continue</b>	This item determines whether or not the machine continues printing when it detects paper that is not matched to your paper setting. <ul style="list-style-type: none"> <li>• <b>Off:</b> If a paper mismatch occurs, the message remains on the display and the machine remains off-line until you insert the correct paper.</li> <li>• <b>On:</b> If the paper is mismatched, an error message displays. The machine goes off-line for 30 seconds then automatically clears the message and continues printing.</li> </ul>
<b>Altitude Adjustment</b>	Print quality is affected by atmospheric pressure. The atmospheric pressure is determined by the height of the machine above sea level. This feature lets you adjust the altitude in a height district. The higher the altitude, the higher the adjustment, the highest being <b>High 3</b> . (See "Altitude adjustment" on page 40.)
<b>Auto CR</b>	This option allows you to append the required carriage return to each line feed, which is useful to the Unix user or DOS user.
<b>Job Timeout</b>	You can set the amount of time a single print job is active before it must print. The machine handles incoming data as a single job, if it comes in within the specified time. When an error occurs while processing data from the computer and the data flow stops, the machine waits the specified amount of time and then cancels printing if data flow does not resume.
<b>Maintenance</b>	This menu allows you to maintain consumables within the machine and check supplies' life. You can clean fuser components.

Option	Description
<b>Clear Settings</b>	This menu item allows you to restore the printer's factory default settings.
<b>Spooling<sup>a</sup></b>	To spool documents in HDD for the network printing, select <b>On</b> .

a. This menu item is available when the optional hard disk is installed.

## Emulation

Option	Description
<b>Emulation Type</b>	The machine language defines how the computer communicates with the machine. If you select <b>Auto</b> , your machine can change the machine language automatically.
<b>Setup</b>	You can set the detailed settings for the emulation type you selected.

## Color

Option	Description
<b>Custom Color</b>	This menu allows you to adjust contrast, color by color. <ul style="list-style-type: none"> <li>• <b>Default:</b> Optimizes colors automatically.</li> <li>• <b>Manual Adjust:</b> Allows you to manually adjust the color contrast for each cartridge. It is recommended to use the <b>Default</b> setting for best color quality.</li> </ul>
<b>Auto Color Reg.</b>	You can adjust the position of color texts or graphics to match the position of the printed colors to those on your screen.  If you have moved the machine, it is strongly recommended to operate this menu manually.
<b>Density Calibration</b>	You can manually calibrate the toner density of machine for the best possible color print quality.
<b>Density Control</b>	The machine automatically calibrates the toner density of machine for the best possible color print quality. If you select <b>Off</b> , the machine is calibrated by the factory default toner density.

## Network

Option	Description
<b>Ethernet Speed</b>	Configure the network transmission speed.

Option	Description
<b>TCP/IP (IPv4)</b>	Select appropriate protocol and configure parameters to use the network environment.  There are lots of parameters to be set; therefore, if you are not sure, leave as is, or consult the network administrator.
<b>TCP/IP (IPv6)</b>	Selects this option to use the network environment through IPv6. (See "IPv6 configuration" on page 39.)
<b>Wireless<sup>a</sup></b>	Configure the wireless network environments. (See "Wireless network setup" on page 32.)
<b>Clear Settings</b>	Reverts the network settings to the default values.
<b>Network Configuration</b>	You can print the network configuration report.
<b>Net. Activate</b>	You can set to use Ethernet on or off.
<b>Http Activate</b>	You can set to use SyncThru™ Web Service or not. If you set this option to "off", users cannot access SyncThru™ Web Service.

a. This menu only appears when an optional wireless network interface has been installed.

## Job Management

This menu item is available when the optional hard disk is installed. (See "Printing with the optional hard disk" on page 88.)

# management tools

This chapter introduces management tools provided to help you make full use of your machine.

**This chapter includes:**

- Samsung AnyWeb Print
- Using SyncThru™ Web Service
- Using Samsung Easy Printer Manager (Windows only)

## Samsung AnyWeb Print

This tool helps you screen-capture, preview, scrap, and print Windows Internet Explorer pages more easily, than when you use an ordinary program. Click **Start > All programs > Samsung Printers > Samsung AnyWeb Print > Download the latest version** to link to the website where the tool is available for download.

## Using SyncThru™ Web Service

- Internet Explorer 6.0 or higher is the minimum requirement for SyncThru™ Web Service.
- SyncThru™ Web Service explanation in this user's guide may differ from your machine depending on its options or models.
- Network model only.

## Accessing SyncThru™ Web Service

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 SyncThru™ Web Service

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

1. Click **Login** on the upper right of the SyncThru™ Web Service website.
2. Type in the **ID** and **Password** then click **Login**.
  - **ID:** admin
  - **Password:** sec00000

## SyncThru™ Web Service 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

- Using Samsung Printer Status (Windows only)
- Using Smart Panel (Macintosh and Linux only)
- Using the Unified Linux Driver Configurator

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 and font reports.

### 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 HTTPs, IPSec, IPv4/IPv6 filtering, and 802.1x.

### 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 Samsung website or download drivers by selecting the **Link** menu.

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

## E-mail notification setup

You can receive emails about your machine's status by setting this option. By setting information such as IP address, host name, e-mail address and SMTP server information, the machine status (toner cartridge shortage or machine error) will be sent to a certain person's e-mail automatically. This option may be used more frequently by a machine administrator.

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 **Settings** tab, select **Machine Settings > E-mail Notification**.

- If you have not configured outgoing server environment, go to **Settings > Network Settings > Outgoing Mail Server(SMTP)** to configure network environment before setting e-mail notification.

4. Select **Enable** check box to use the **E-mail Notification**.
5. Click **Add** button to add e-mail notification user.  
Set the recipient name and e-mail address(es) with notification items you want to receive an alert for.
6. Click **Apply**.

 If the firewall is activated, the e-mail may not be sent successfully. In that case, contact the a network administrator.

## Setting the system administrator's information

This setting is necessary for using the e-mail notification option.

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, location, and email address.
5. Click **Apply**.

## Using Samsung Easy Printer Manager (Windows only)

Samsung Easy Printer Manager is a Windows-based application that combines Samsung machine settings into one location. Samsung Easy Printer Manager combines device settings as well as printing environments, settings/actions and launching. All of these features provide a gateway to conveniently use your Samsung machine. Samsung Easy Printer Manager provides two different user interfaces for the user to choose from: the basic user interface and the advanced user interface. Switching between the two interfaces is easy: just click a button.

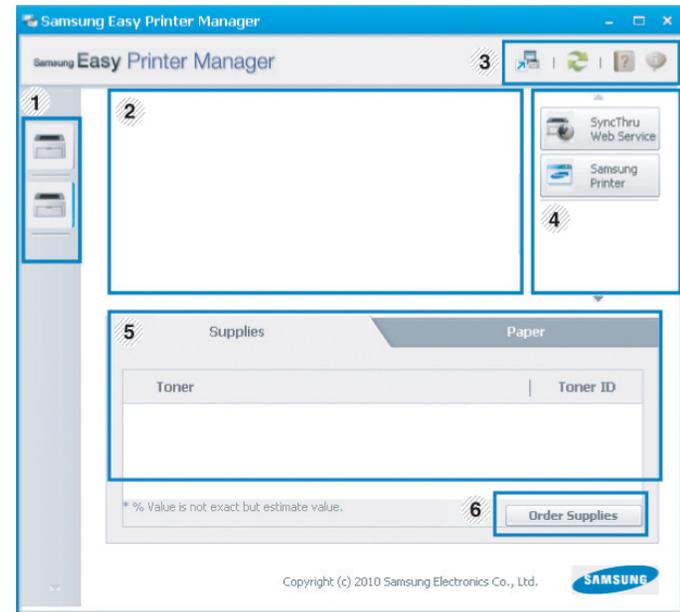
 Internet Explorer 6.0 or higher is the minimum requirement for Samsung Easy Printer Manager.

## Understanding Samsung Easy Printer Manager

To open the program:

Select **Start > Programs** or **All Programs > Samsung Printers > Samsung Easy Printer Manager > Samsung Easy Printer Manager**.

The Samsung Easy Printer Manager interface is comprised of various basic sections as described in the table that follows:



 1	<b>Printer List</b>	The printer list displays the installed printer icons on your computer.
 2	<b>Printer Information</b>	This area gives you general information about your machine. You can check information, such as the machine's model name, IP address (or Port name), and machine status.  <b>User's Guide button:</b> This button opens <b>Troubleshooting Guide</b> when an error occurs. You can directly open the necessary section in the user's guide.
 3	<b>Application information</b>	Includes links for changing to the advanced settings, preference, help, and about.  The  button is used to change the user interface to the advanced settings user interface.
 4	<b>Quick links</b>	Displays <b>Quick links</b> to machine specific functions. This section also includes links to applications in the advanced settings.
 5	<b>Contents Area</b>	Displays information about the selected machine, remaining toner level, and paper. The information will vary based on the machine selected. Some machines do not have this feature.
 6	<b>Order Supplies</b>	Click on the <b>Order</b> button from the supply ordering window. You can order replacement toner cartridge(s) from online.

 Click the **Help** () button from the upper-right corner of the window

and click on any option you want to know about.

## Advanced settings user interface overview

The advanced user interface is intended to be used by the person responsible for managing the network and machines.

### Device Settings

You can configure various machine settings such as machine setup, paper, layout, emulation, network, and print information.

### Alert Settings

This menu includes settings related to error alerting.

- **Printer Alert:** Provides settings related to when alerts will be received.
- **Email Alert:** Provides options relating to receiving alerts via email.
- **History Alert:** Provides a history of device and toner related alerts.

### Job Accounting

Provides querying of quota information of the specified job accounting user. This quota information can be created and applied to devices by job accounting software such as SyncThru™ or CounThru™ admin software.

## Using Samsung Printer Status (Windows only)

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

- The Samsung 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.

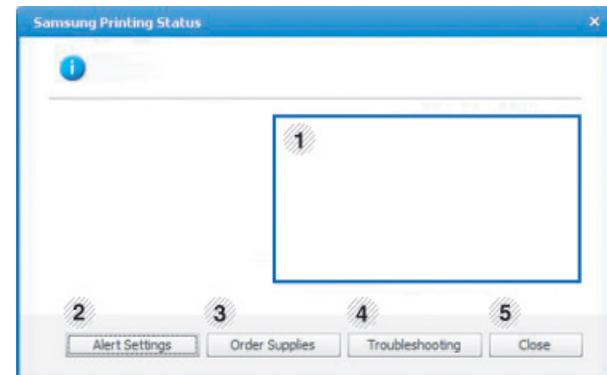
## Samsung Printer Status overview

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

You can also launch Samsung Printer Status manually. Go to the **Printing Preferences**, click the **Basic** tab > **Printer Status** button.

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.



	<b>Toner Level</b>	You can view the level 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.
	<b>Alert Settings</b>	Select the settings you want from the options window.
	<b>Order Supplies</b>	You can order replacement toner cartridge(s) from online.
	<b>Troubleshooting</b>	You can directly open the troubleshooting section in the user's guide.
	<b>Close</b>	Close the window.

## Using Smart Panel (Macintosh and Linux only)

Smart Panel is a program that monitors and informs you of the machine's status, and allows you to customize the machine's settings. For Macintosh, Smart Panel is installed automatically when you install the machine software. For Linux, you can download Smart Panel from the Samsung website.

- The Smart Panel 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.

## Smart Panel overview

If an error occurs while operating, you can check the error from the Smart Panel. You can also launch Smart Panel manually.

Macintosh		Click this icon the Smart Panel icon on the menu bar.
Linux		Double-click the Smart Panel icon in the Notification Area.



<b>1</b>	<b>Toner Level</b>	You can view the level 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.
<b>2</b>	<b>Buy Now</b>	You can order replacement toner cartridge(s) from online.
<b>3</b>	<b>User's Guide</b>	You can view the online User's Guide.  This button opens the <b>Troubleshooting Guide</b> when an error occurs. You can directly open the troubleshooting section in the user's guide.
<b>4</b>	<b>Printer Setting</b>	You can configure various machine settings in the Printer Settings Utility window. Some machines do not have this feature.  If you connect your machine to a network, the SyncThru™ Web Service window appears instead of the Printer Settings Utility.

## Changing Smart Panel 's settings

Right-click in Linux or in Mac OS X click on the Smart Panel icon and select **Options**. Select the settings you want from the **Options** window.

## Using the Unified Linux Driver Configurator

Unified Driver Configurator is a tool primarily intended for configuring machine devices. You need to install Unified Linux Driver to use Unified Driver Configurator (See "Linux" on page 23).

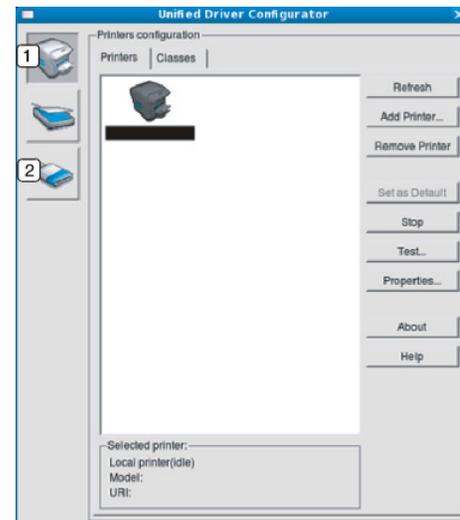
After the driver is installed on your Linux system, the Unified Driver Configurator icon will automatically be created on your desktop.

## Opening the Unified Driver Configurator

1. Double-click the **Unified Driver Configurator** on the desktop.  
You can also click the startup menu icon and select **Samsung Unified**

## Driver > Unified Driver Configurator.

2. Click each button on the left to switch to the corresponding configuration window.



- 1 **Printers configuration**
- 2 **Ports configuration**

 To use the on screen help, click **Help**.

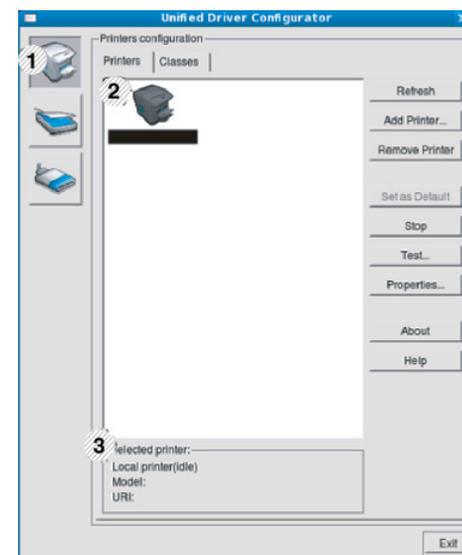
3. After changing the configurations, click **Exit** to close the Unified Driver Configurator.

## Printers configuration

**Printers configuration** has the two tabs: **Printers** and **Classes**.

### Printers Tab

View the current system's printer configuration by clicking on the machine icon button on the left side of the Unified Driver Configurator window.



- 1 Switches to **Printers configuration**.
- 2 Shows all of the installed machine.

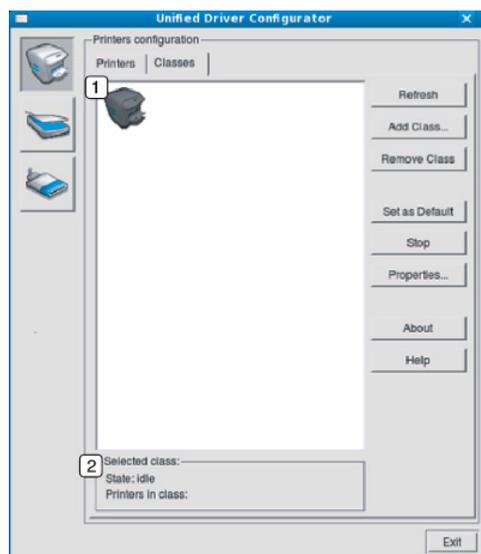
3 Shows the status, model name and URI of your machine.

The printer control buttons are, as follows:

- **Refresh:** Renews the available machines list.
- **Add Printer:** Allows you to add a new machines.
- **Remove Printer:** Removes the selected machine.
- **Set as Default:** Sets the current selected machine as a default machine.
- **Stop/Start:** Stops/starts the machine.
- **Test:** Allows you to print a test page to ensure the machine is working properly.
- **Properties:** Allows you to view and change the printer properties.

## Classes Tab

The Classes tab shows a list of available machine classes.



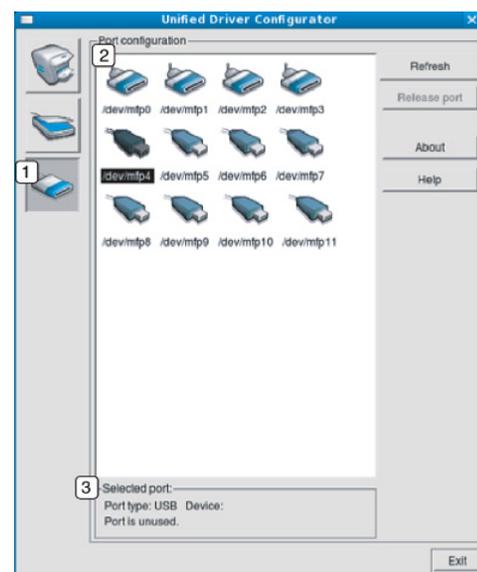
1 Shows all of the machine classes.

2 Shows the status of the class and the number of machines in the class.

- **Refresh:** Renews the classes list.
- **Add Class:** Allows you to add a new machine class.
- **Remove Class:** Removes the selected machine class.

## Ports configuration

In this window, you can view the list of available ports, check the status of each port and release a port that is stalled in a busy state when its owner has terminated the job for any reason.



1 Switches to **Ports configuration**.

2 Shows all of the available ports.

3 Shows the port type, device connected to the port, and status

- **Refresh:** Renews the available ports list.
- **Release port:** Releases the selected port.

# maintenance

This chapter provides information for maintaining your machine and the toner cartridge.

## This chapter includes:

- Printing a machine report
- Monitoring the supplies life
- Cleaning a fuser belt
- Using Toner Low Alert
- Cleaning a machine
- Storing the Toner cartridge
- Tips for Moving & storing your machine

## Printing a machine report

You can print the machine's information.

1. Press  on the control panel.
2. Press up/down arrow to highlight **Information** and press **OK**.
3. Press up/down arrow to highlight **Configuration** and press **OK**.
4. The display shows **Print?**, then press **OK** to print the configuration report.

## Monitoring the supplies life

To view the supply life indicators, follow the steps below:

1. Press  on the control panel.
2. Press up/down arrow to highlight **System Setup** and press **OK**.
3. Press up/down arrow to highlight **Maintenance** and press **OK**.
4. Press up/down arrow to highlight **Supplies Info.** and press **OK**.
5. The display shows options as you press up/down arrow.

## Cleaning a fuser belt

If you are experiencing blurred, faded, or smeared printouts, you can clear the problem by printing a cleaning sheet, provided by your printer.

You can Print:

1. Press  on the control panel.
2. Press up/down arrow to highlight **System Setup** and press **OK**.
3. Press up/down arrow to highlight **Maintenance** and press **OK**.
4. Press up/down arrow to highlight **Clean Fuser** and press **OK**.  
Your machine automatically picks up a sheet of paper from the tray and prints out a cleaning sheet with dust or toner particles on it.

## Using Toner Low Alert

If toner in the cartridge has run out, a message informing user to change the toner cartridge appears. You can set the option for this message to appear or not.

1. Press  on the control panel.
2. Press up/down arrow to highlight **System Setup** and press **OK**.
3. Press up/down arrow to highlight **Maintenance** and press **OK**.
4. Press up/down arrow to highlight **Toner Low Alert** and press **OK**.

## Cleaning a 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 the best printing condition and use your machine longer.



- Cleaning the cabinet of the machine with cleaning materials containing large amounts of alcohol, solvent, 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 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.

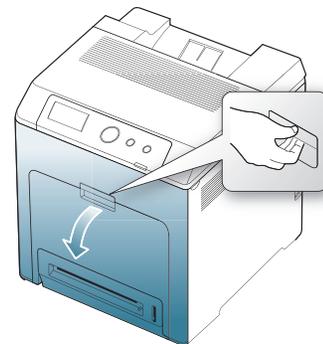
## Cleaning the outside

Clean the machine cabinet 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.

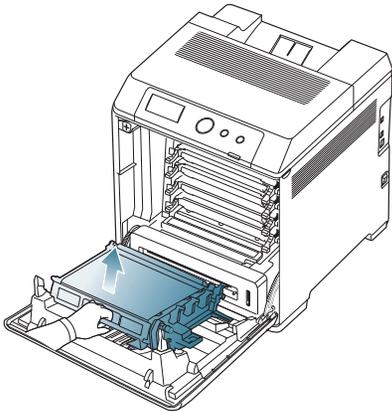
1. Turn the machine off and unplug the power cord. Wait for the machine to cool down.
2. Using the handle, completely open the front cover.



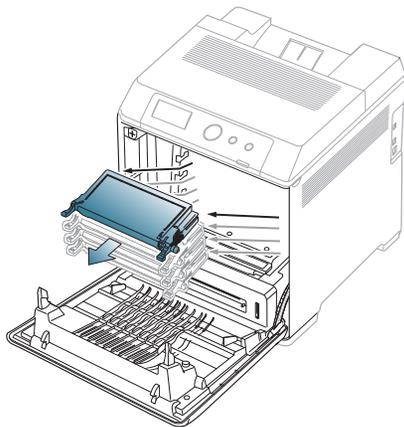
- Do not touch the green surface, the OPC drum or the front of the print cartridge, with your hands or any other material. Use the handle on each cartridge in order to avoid touching this area.
- Be careful not to scratch the surface of the paper transfer belt.
- If you leave the front cover open for more than a few minutes,

the OPC drum can be exposed to light. This will cause damage to the OPC drum. Cover the OPC drum of the print cartridge with the clean paper to avoid damaging it from the light while you clean the inside.

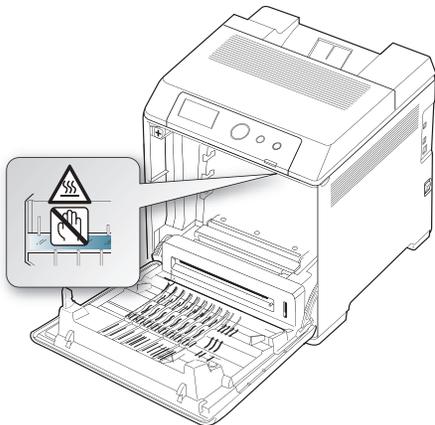
3. Press the green release handle to release the paper transfer belt. Holding the handle on the paper transfer belt, lift it out of the machine.



4. Grasp the handles on the print cartridge and pull to remove all the cartridge from the machine.



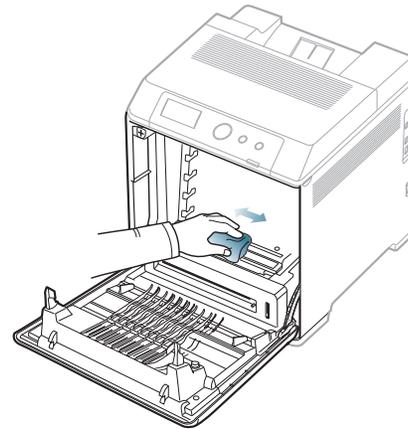
-  If you open the front cover, be careful not to touch the underneath the control panel (the lower part of the fuser unit). The temperature of the fuser unit might be high and could damage your skin.



-  When you open the front cover and work inside the machine, it is highly recommend that you remove the paper transfer belt first. Because the work you do could contaminate the paper transfer

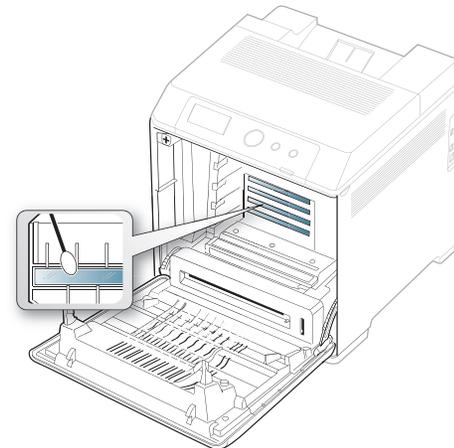
belt.

5. With a dry, lint-free cloth, wipe away any dust and spilled toner from the toner cartridge area.

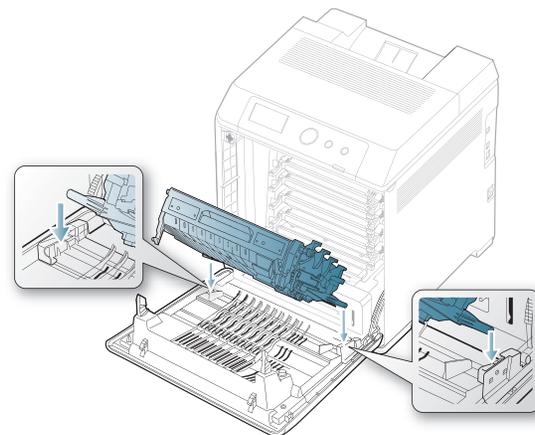


-  If toner gets on your clothing, wipe it off with a dry cloth and wash it in cold water. Hot water sets toner into fabric.

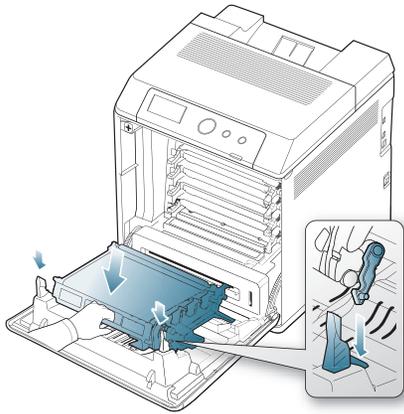
6. Locate the long strip of glass (LSU) inside the top of the cartridge compartment and gently swab the glass to see if dirt turns the white cotton black.



7. Slide the toner cartridge back into the machine.
8. Holding the handle on the paper transfer belt, align it with the slots on the inside of the front cover.



9. Lower the paper transfer belt until it is parallel with the front cover and firmly seated.



10. Close the front cover. Ensure that the cover is securely closed.

 If the front cover is not completely closed, the machine will not operate.

11. Plug in the power cord and turn the machine on.

## Storing the Toner cartridge

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

Store this cartridge in the same environment as the printer it will be used in; this should be in controlled office temperature and humidity conditions. The toner cartridge should remain in its original, 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, always 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 they were installed in the machine.
- Do not store consumables in;
  - 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 photosensitive 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.

## Use of non-Samsung and refilled toner cartridge

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

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

## 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-out number may vary depending on the print density of the pages you print on, operating environment, printing interval, media type, and/or media size. For example, if you print a lot of graphics, the consumption of the toner is high and you may need to change the cartridge more often.

## Tips for Moving & storing your machine

- When moving the machine, do not tilt or turn it upside down. Otherwise, the inside of the machine may be contaminated by toner, which can cause damage to the machine or bad print quality.
- When moving the machine, make sure at least two people are holding the machine securely.

# troubleshooting

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 this User's Guide or the problem persists, call for service.

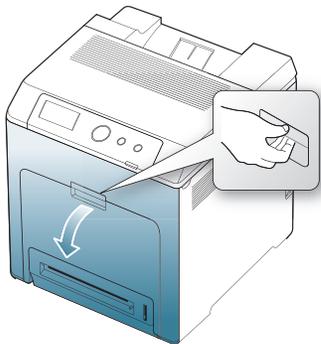
## This chapter includes:

- Redistributing toner
- Tips for avoiding paper jams
- Clearing paper jams

## Redistributing toner

When a toner is low, faded or light areas may appear. It is possible that colored images may be printed with incorrect colors due to flawed mixing of toner colors when the toner level of the colored toner cartridge is low. You can temporarily improve print quality by redistributing the toner.

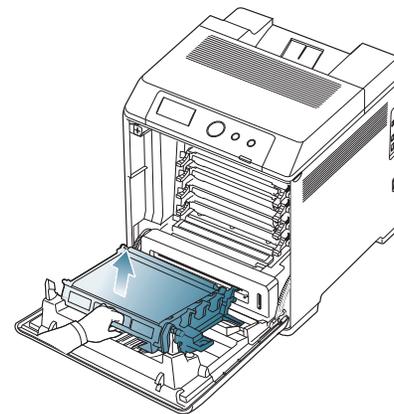
- The toner-related message saying that the toner is low may appear on the display.
1. Using the handle, completely open the front cover.



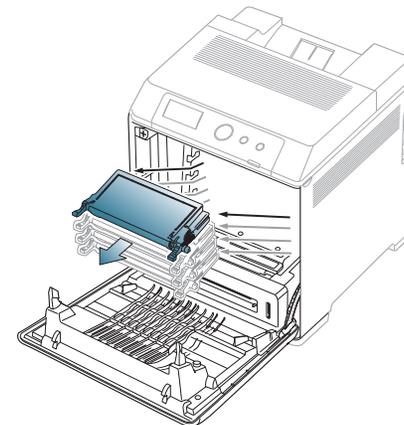
- Do not touch the green surface, the OPC drum or the front of the toner cartridge, with your hands or any other material. Use the handle on each cartridge in order to avoid touching this area.
- Be careful not to scratch the surface of the paper transfer belt.
- If you leave the front cover open for more than a few minutes, the OPC drum can be exposed to light. This will cause damage to the OPC drum. Close the front cover when the installation need to be halted for any reason.

- Understanding display messages
- Solving other problems

2. Press the green release handle to release the paper transfer belt. Holding the handle on the paper transfer belt, lift it out of the machine.

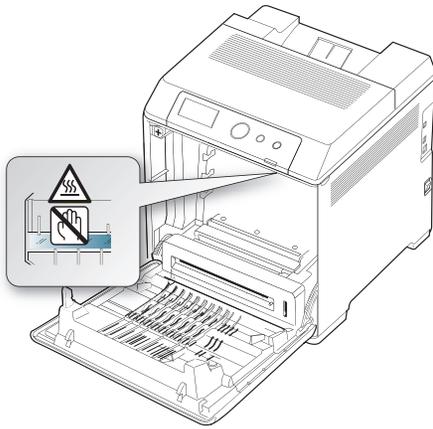


3. Grasp the handles on the toner cartridge and pull the cartridge out.



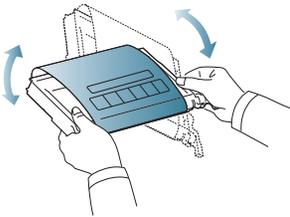
If you open the front cover, be careful not to touch the underneath the control panel (the lower part of the fuser unit). The temperature

of the fuser unit might be high and could damage your skin.



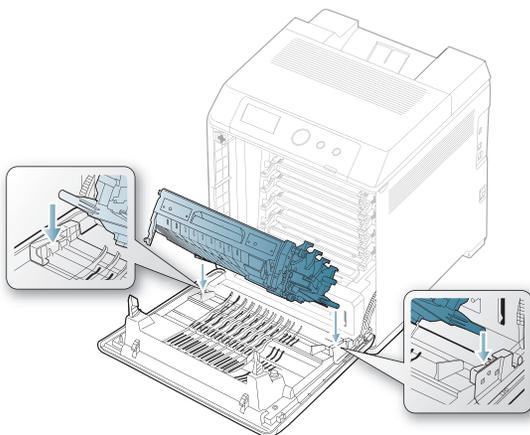
When you open the front cover and work inside the machine, it is highly recommend that you remove the paper transfer belt first. Because the work you do could contaminate the paper transfer belt.

4. Holding both handles on the toner cartridge, thoroughly rock it from side to side to redistribute the toner.

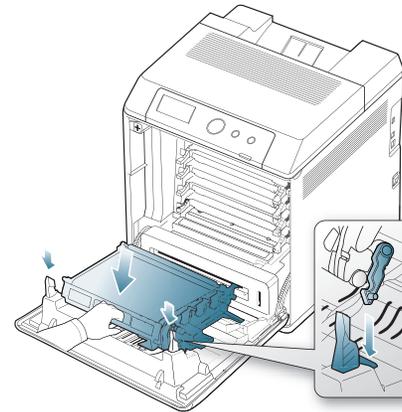


If toner gets on your clothing, wipe it off with a dry cloth and wash clothing in cold water. Hot water sets toner into fabric.

5. Slide the toner cartridge back into the machine.
6. Holding the handle on the paper transfer belt, align it with the slots on the inside of the front cover.



7. Lower the paper transfer belt until it is parallel with the front cover and firmly seated.

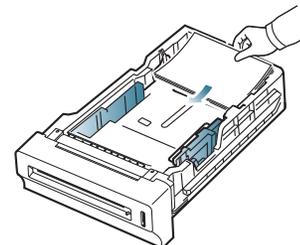


8. Close the front cover. Ensure that the cover is securely closed.  
 If the front cover is not completely closed, the machine will not operate.

## Tips for avoiding paper jams

By selecting the correct media types, most paper jams can be avoided. When a paper jam occurs, refer to the next guidelines.

- Ensure that the adjustable guides are positioned correctly. (See "Loading paper in the tray" on page 43.)  
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 "Setting the paper size and type" on page 47.)
- Ensure that the recommended side of the print media is facing up in the tray, or facing down in the multi-purpose tray.
- If paper jams occur frequently when you print on A5/B5-sized paper: Load the paper into the tray with the long edge facing the front of the tray.



If load the paper this way, printing both sides of the paper (duplex) is not supported.

In the **Printing Preferences** window, set the page orientation to be rotated 180 degrees. (See "Opening printing preferences" on page 48.)

## Clearing paper jams

When a paper jam occurs, a warning message appears on the display.

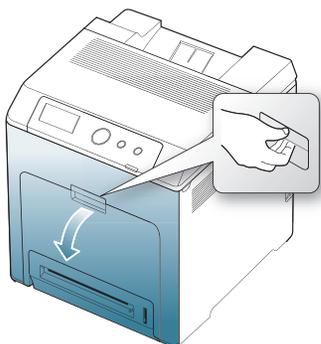
 To avoid tearing the paper, pull the jammed paper out slowly and gently. Follow the instructions in the following sections to clear the jam.

## In tray 1

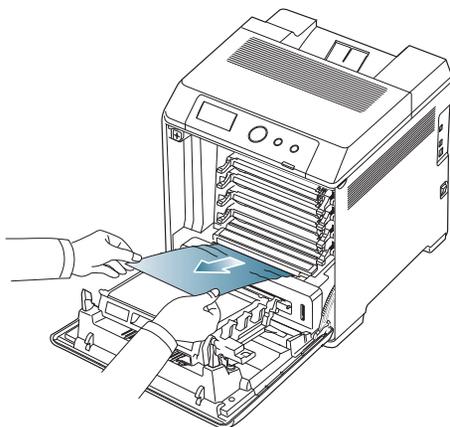
 Click this link to open an animation about clearing a jam.

If paper is jammed in the paper feed area, follow the next steps to release the jammed paper.

1. Using the handle, completely open the front cover.



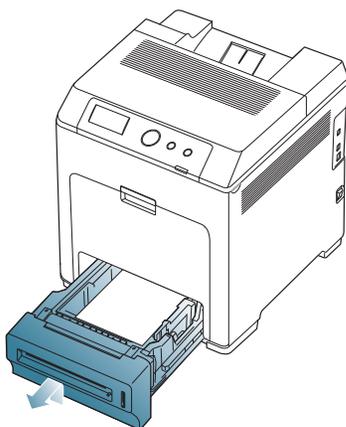
2. Carefully remove the paper by pulling in the direction as shown below.



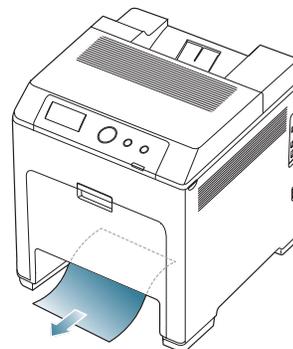
3. Close the front cover.

 If the front cover is not completely closed, the machine will not operate.

4. Pull out tray 1.



5. Remove the jammed paper by gently pulling it straight out as shown below.



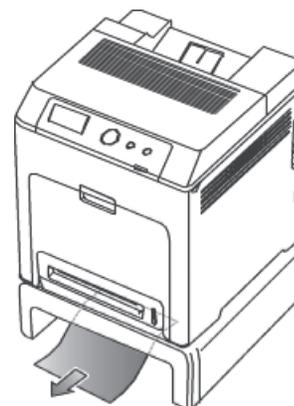
6. Insert tray 1 back into the machine until it snaps into place. Printing automatically resumes.

## In optional trays

 Click this link to open an animation about clearing a jam.

 This part explains the method of removing the jammed paper in the optional tray 2. Please refer to the next method for other optional trays, since the method is same as the optional tray 3.

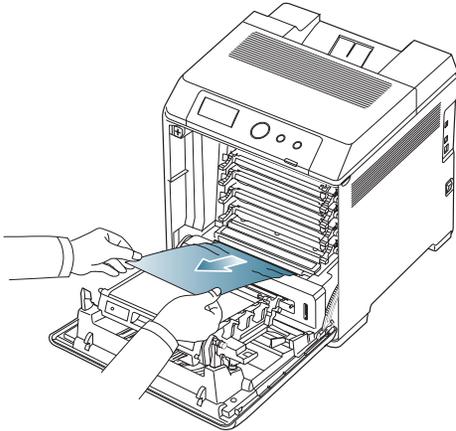
1. Pull out optional tray 2 open.
2. Remove the jammed paper from the machine.



If the paper does not move when you pull or if you do not see the paper in this area, stop and go to the next step.

3. Open the front cover.

4. Pull the jammed paper out in the direction shown. To avoid tearing the paper, pull it out gently and slowly.



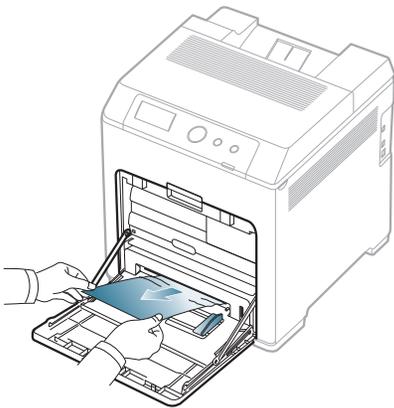
5. Close the front cover and insert the trays back into the machine. Printing automatically resumes.

 If the front cover is not completely closed, the machine will not operate.

### In the multi-purpose tray

-  Click this link to open an animation about clearing a jam.
-  When you print using the multi-purpose tray and the machine detects that there is either no paper or that the paper has been improperly loaded, follow the next steps to release the jammed paper.

1. If the paper is not feeding properly, pull the paper out of the machine.



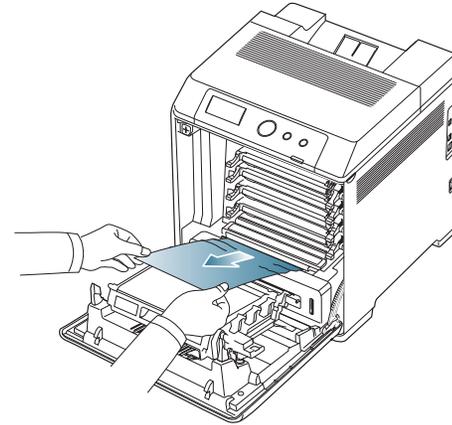
If you do not see the jammed paper or if there is any resistance when you pull, stop and go to step 3.

2. Open and close the front cover to resume printing.

 If the front cover is not completely closed, the machine will not operate.

3. Using the handle, completely open the front cover.

4. Remove the jammed paper by pulling in the direction shown. To avoid tearing the paper, pull it out gently and slowly.



-  Do not touch the green surface, the OPC drum or the front of the toner cartridge, with your hands or any other material. Use the handle on each cartridge in order to avoid touching this area.
- Be careful not to scratch the surface of the paper transfer belt.
- If you leave the front cover open for more than a few minutes, the OPC drum can be exposed to light. This will cause damage to the OPC drum. Close the front cover when the installation need to be halted for any reason.

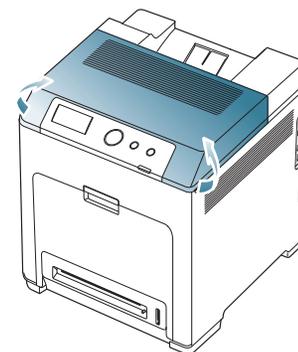
5. Close the front cover to resume printing.

 If the front cover is not completely closed, the machine will not operate.

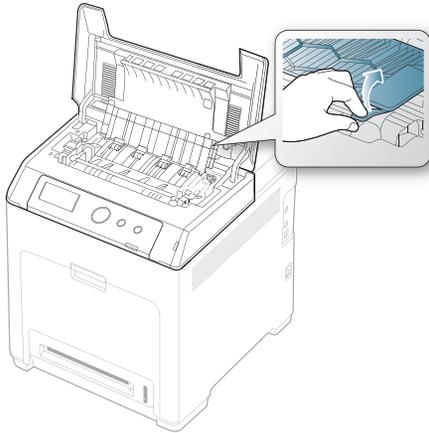
### In the fuser unit area

-  Click this link to open an animation about clearing a jam.
-  The fuser area is hot. Take care when removing paper from the machine.

1. Open the top cover.

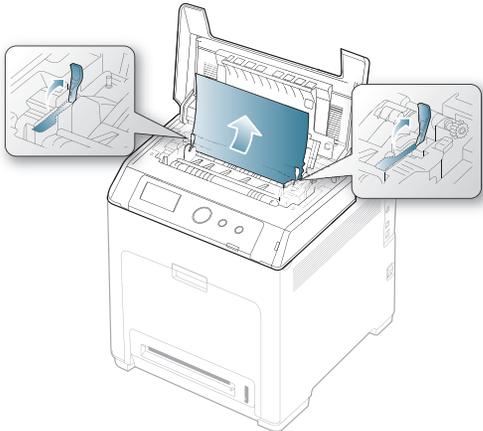


2. Open the inner cover using the handle on it.



**!** Do not touch the fuser inside the inner cover. It is hot and could cause burns! The fuser's operating temperature is 180°C (356°F). Take care when removing paper from the machine.

3. Pull up the paper jam lever to loose the fusing part of the fuser unit and carefully take the jammed paper out of the machine.



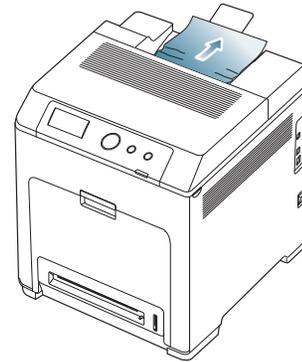
4. Press down the paper jam lever to fasten the fusing part.
5. Close the inner cover.
6. After removing the jammed paper, check for paper which may be jammed in other parts of the machine.
7. Close the top cover. Ensure that the cover is securely closed.

**!** If the top cover is not completely closed, the machine will not operate.

### In exit area

-  Click this link to open an animation about clearing a jam.

1. Open and close the front cover. The jammed paper is automatically ejected from the machine.
2. Gently pull the paper out of the output tray.



If you do not see the jammed paper or if there is any resistance when you pull, stop and see "In the fuser unit area" on page 71.

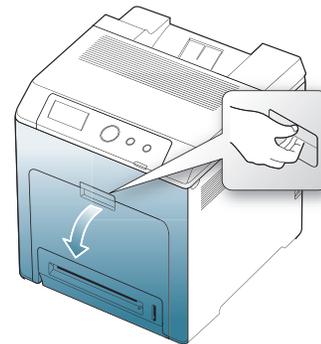
3. Open and close the front cover to resume printing.

**!** If the front cover is not completely closed, the machine will not operate.

### In the duplex unit area

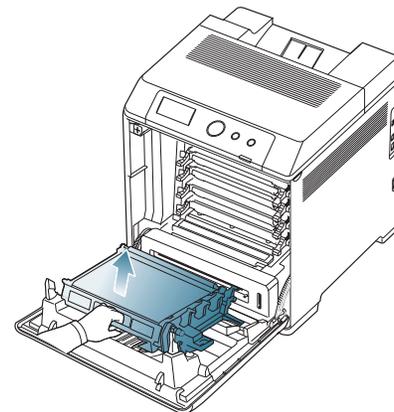
-  Click this link to open an animation about clearing a jam.

1. Using the handle, completely open the front cover.

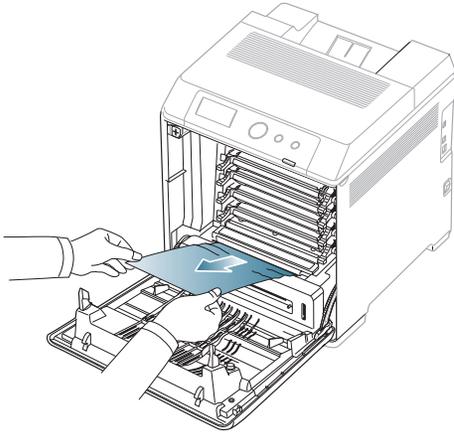


**!** Be careful not to scratch the surface of the paper transfer belt.

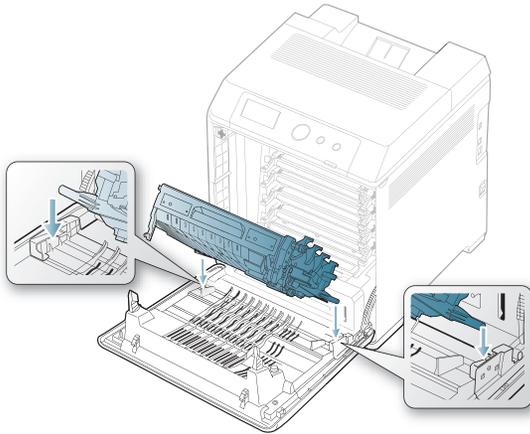
2. Press the green release handle to release the paper transfer belt. Holding the handle on the paper transfer belt, lift it out of the machine.



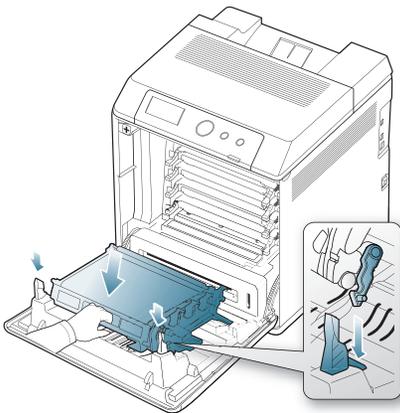
3. Remove the jammed paper by pulling in the direction shown. To avoid tearing the paper, pull it out gently and slowly.



4. Holding the handle on the paper transfer belt, align it with the slots on the inside of the front cover.



5. Lower the paper transfer belt until it is parallel with the front cover and firmly seated.



6. Close the front cover to resume printing.



If the front cover is not completely closed, the machine will not operate.

## Understanding display messages

Messages appear on the control panel display to indicate the machine's status or errors. Some error messages are shown with graphics to help you troubleshoot problem.

### Checking display messages

1. When errors occur, **Check Status** appears on the display and press **OK**.
2. Check the display message to see what kind of error has occurred. If several messages appear, press the up/down arrow to highlight the message you want solve.
3. Press **OK** on the control panel.  
Refer to the tables below to understand the messages' and their meaning, and solve the problem, if necessary.



- If **Check Status** still appears, repeat above steps.
- If a message is not in the table, reboot the power and try the printing job again. If the problem persists, call for service.
- When you call for service, provide the service representative with the contents of display message.
- Some messages may not appear in the display depending on options or models.
- [aaa] indicates the error code. When you contact the service center, this error code help to handle the problem.
- [ccc] indicates the part of the each toner cartridge.
- [xxx] indicates the media type.
- [yyy] indicates the tray.
- [zzz] indicates the paper size.

Message	Meaning	Suggested solutions
<b>[ccc] toner cart. error Error: [aaa] Open/close door</b>	The toner cartridge is wrong installed.	Open and close the front cover. If the problem persists, call for service.
<b>Prepare new [ccc] toner Prepare new [ccc] toner cartridge</b>	Small amount of toner is left in the cartridge. The estimated cartridge life 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 68.)
<b>Replace new [ccc] toner Replace with new [ccc] toner cartridge</b>	A toner cartridge has almost reached its estimated cartridge life.	<p>You can choose <b>Stop</b> or <b>Continue</b> as shown on the control panel. If you select <b>Stop</b>, the printer stops printing and you cannot print any more without changing the cartridge. If you select <b>Continue</b>, the printer keeps printing but the printing quality cannot be guaranteed.</p> <p>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 84.)</p> <p> Samsung does not recommend using non-genuine Samsung toner cartridge such as refilled or remanufactured. Samsung cannot guarantee non-genuine Samsung toner cartridge's quality. Service or repair required as a result of using non-genuine Samsung toner cartridges will not be covered under the machine warranty.</p>

Message	Meaning	Suggested solutions
<b>Replace new [ccc] toner End of life. Replace with new [ccc] toner cartridge</b>	<p>A toner cartridge has reached its estimated cartridge life. The printer stops printing.</p> <p> 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. The number of pages may be affected by operating environment, printing interval, media type, and media size. Some amount of toner may remain in the cartridge even when <b>Replace new [ccc] toner</b> appears and the printer stops printing.</p>	Replace the toner cartridge. (See "Replacing the toner cartridge" on page 84.)
<b>[ccc] toner Not Compatible [ccc] toner cartridge is not compatible. Check guide</b>	The toner cartridge you have installed is not for your machine.	Install a Samsung-genuine toner cartridge, designed for your machine.
<b>[ccc] toner not Installed [ccc] toner cartridge is not installed. Install toner</b>	The toner cartridge is not installed or the CRUM (Consumer Replaceable Unit Monitor) in the cartridge is not properly connected.	Reinstall the toner cartridge two or three times. If the problem persists, the toner cartridge is not being detected. Call for service.
<b>Door is open or Check Transfer belt</b>	The front cover or the top cover is not securely latched.	Close the cover until it locks into place.
<b>Fan error Error: [aaa] Turn off then on</b>	There is a problem in the machine.	Turn the machine off and turn it on again. If the problem persists, call for service.
<b>Fuser error Error: [aaa] Turn off then on</b>	There is a problem in the machine.	Turn the machine off and turn it on again. If the problem persists, call for service.

Message	Meaning	Suggested solutions
<b>Prepare Fuser unit</b> <b>Prepare new fuser unit</b>	The life of the fuser unit will expired soon.	Call for service.
<b>Replace Fuser unit</b> <b>Replace with new fuser unit</b>	The life of the fuser unit has expired.	Call for service.
<b>Fuser unit Not Installed</b> <b>Fuser unit is not installed.</b> <b>Install it</b>	The fuser unit is not installed.	Call for service.
<b>Jam bottom of duplex</b>	Paper has jammed during duplex printing.	Clear the jam. (See "In the duplex unit area" on page 72.)
<b>Jam top of duplex</b>		
<b>Jam inside machine</b>	Paper has jammed in cartridge area.	Clear the jam. (See "In the fuser unit area" on page 71.)
<b>Jam in exit area</b>	Paper has jammed in exit area.	Clear the jam. (See "In exit area" on page 72.)
<b>Error: [aaa]</b> <b>LSU Unit Failure: [aaa]</b> <b>Turn off then on</b>	There is a problem in the machine.	Turn the machine off and turn it on again. If the problem persists, call for service.
<b>Not proper room temp</b> <b>Not proper room temperature.</b> <b>Change room temperature</b>	The machine is in a room with improper room temperature.	Move the machine to a room with proper room temperature. (See "General specifications" on page 91.)
<b>Error: [aaa]</b> <b>Actuator Motor Failure: [aaa]</b> <b>Call for service</b>	There is a problem in the machine.	Turn the machine off and turn it on again. If the problem persists, call for service.
<b>Output bin Full</b> <b>Output bin Full.</b> <b>Remove printed paper</b>	The document output tray is full.	Once the paper is removed from the document output tray, the printer resumes printing.
<b>Paper Empty in MP</b> <b>Paper is empty in MP tray.</b> <b>Load paper</b>	There is no paper in the multi-purpose tray.	Load paper in the multi-purpose tray. (See "Multi-purpose tray" on page 44.)
<b>Paper Empty in tray[yyy]</b> <b>Paper is empty in tray[yyy].</b> <b>Load paper</b>	There is no paper in the tray.	Load paper in the tray. (See "Tray 1 / optional trays" on page 43.)
<b>Paper Jam in MPT</b>	Paper has jammed in the multi-purpose tray area.	Clear the jam. (See "In the multi-purpose tray" on page 71.)
<b>Paper Jam in tray 1</b>	Paper has jammed in the tray1 area.	Clear the jam. (See "In tray 1" on page 70.)

Message	Meaning	Suggested solutions
<b>Paper Jam in tray 2</b>	Paper has jammed in the tray2 area.	Clear the jam. (See "In optional trays" on page 70.)
<b>Paper Jam in tray 3</b>	Paper has jammed in the tray3 area.	Clear the jam. (See "In optional trays" on page 70.)
<b>Paper mismatch MPT</b> <b>Load [zzz] [xxx]</b> <b>Continue  Cancel </b>	There is no corresponding paper in the corresponding multi-purpose tray.	Load corresponding paper in the corresponding multi-purpose tray. (See "Multi-purpose tray" on page 44.)
<b>Paper mismatch tray[yyy]</b> <b>Load [zzz] [xxx]</b> <b>Continue  Cancel </b>	There is no corresponding paper in the corresponding tray.	Load corresponding paper in the corresponding tray. (See "Tray 1 / optional trays" on page 43.)
<b>Replace retard roller</b> <b>Replace with new Tray[yyy] retard roller</b>	The life of the tray Retard roller has expired.	Call for service.
<b>Replace dust cleaning</b> <b>Replace with new dust cleaning kit</b>	The life of the Dust Cleaning Kit has expired.	Call for service.
<b>Replace [ccc] toner</b> <b>Replace with New [ccc] Toner</b>	The toner cartridge has reached the end of its lifespan.	Replace the toner cartridge with a Samsung-genuine toner cartridge. (See "Replacing the toner cartridge" on page 84.)
<b>Self Diagnostics mode...</b>	The engine in your printer is checking some problems detected.	Please wait a few minutes.
<b>Sensor Failure [aaa]</b> <b>Turn off then on</b>	There is a problem in the sensor signal.	Turn the machine off and turn it on again. If the problem persists, call for service.
<b>System error</b> <b>Error: [aaa]</b> <b>Turn off then on</b>	There is a problem in the machine.	Turn the machine off and turn it on again. If the problem persists, call for service.
<b>Prepare TR. belt</b> <b>Prepare new Paper transfer belt unit</b>	The life of the transfer belt will expired soon.	Order the transfer belt with a new one.

Message	Meaning	Suggested solutions
<b>Replace TR. belt End of life, Replace with new Paper transfer belt unit</b>	The life of the transfer belt has expired.	Replace the paper transfer belt with a new one. Install a Samsung-genuine transfer belt. (See "Replacing the paper transfer belt" on page 85.)
<b>Tray[yyy] cassette Out Tray[yyy] cassette is pulled out. Insert it properly</b>	The tray is not properly closed.	To close the tray, lower the rear edge, align it with the slot, and slide it into the printer.
<b>Tray[yyy] has a problem Communication problem occurred with tray[yyy]</b>	The machine cannot communicate the optional trays.	Reinstall the optional trays. If the problem persists, call for service.
<b>Tray[yyy] Not Installed Tray[yyy] is not installed</b>	The optional trays is not installed.	Reinstall the optional trays. If the problem persists, call for service.
<b>TR. belt Not compatible Paper transfer belt unit is not compatible. Check guide</b>	The transfer belt of the machine is not for your machine.	Install the a Samsung-genuine part designed for your machine. (See "Replacing the paper transfer belt" on page 85.)
<b>Error: [aaa] PTB Unit Failure: [aaa] Install paper transfer belt unit.</b>	The transfer belt is not installed.	Install a Samsung-genuine transfer belt. (See "Replacing the paper transfer belt" on page 85.)

## Solving other problems

The following chart lists some conditions that may occur and the recommended solutions. Follow the suggested solutions until the problem is corrected. If the problem persists, call for service.

## Paper feeding problems

Condition	Suggested solutions
<b>Paper jams during printing.</b>	Clear the paper jam. (See "Clearing paper jams" on page 69.)
<b>Paper sticks together.</b>	<ul style="list-style-type: none"> <li>Check the maximum paper capacity of the tray. (See "Print media specifications" on page 92.)</li> <li>Make sure that you are using the correct type of paper. (See "Print media specifications" on page 92.)</li> <li>Remove paper from the tray and flex or fan the paper.</li> <li>Humid conditions may cause some paper to stick together.</li> </ul>
<b>Multiple sheets of paper do not feed.</b>	Different types of paper may be stacked in the tray. Load paper of only one type, size, and weight.
<b>Paper does not feed into the machine.</b>	<ul style="list-style-type: none"> <li>Remove any obstructions from inside the machine.</li> <li>Paper has not been loaded correctly. Remove paper from the tray and reload it correctly.</li> <li>There is too much paper in the tray. Remove excess paper from the tray.</li> <li>The paper is too thick. Use only paper that meets the specifications required by the machine. (See "Print media specifications" on page 92.)</li> </ul>
<b>The paper keeps jamming.</b>	<ul style="list-style-type: none"> <li>There is too much paper in the tray. Remove excess paper from the tray. If you are printing on special materials, use the multi-purpose tray.</li> <li>An incorrect type of paper is being used. Use only paper that meets the specifications required by the machine. (See "Print media specifications" on page 92.)</li> <li>There may be debris inside the machine. Open the front cover and remove any debris.</li> </ul>
<b>Transparencies stick together in the paper exit.</b>	Use only transparencies specifically designed for laser printers. Remove each transparency as it exits from the machine.
<b>Envelopes skew or fail to feed correctly.</b>	Ensure that the paper guides are against both sides of the envelopes.

## Printing problems

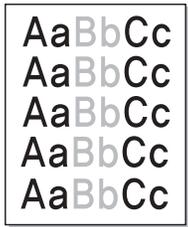
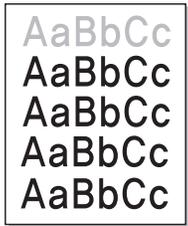
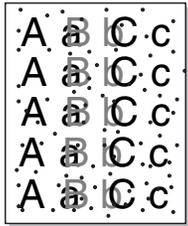
Condition	Possible cause	Suggested solutions
<b>The machine does not print.</b>	The machine is not receiving power.	Check the power cord connections. Check the power switch and the power source.
	The machine is not selected as the default machine.	Select your machine as your default machine in your Windows.
	Check the machine for the following:	
	<ul style="list-style-type: none"> <li>The front cover is not closed. Close the front cover.</li> <li>Paper is jammed. Clear the paper jam. (See "Clearing paper jams" on page 69.)</li> <li>No paper is loaded. Load paper. (See "Loading paper in the tray" on page 43.)</li> <li>The toner cartridge is not installed. Install the toner cartridge.</li> <li>Remove the protection sheet on the paper transfer belt. Refer to Quick Install Guide.</li> <li>Remove the sealing tape from the toner cartridge. Refer to Quick Install Guide.</li> </ul>	
	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.
	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 setting 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 <b>Printing Preferences</b> to ensure that all of the print settings are correct. (See "Opening printing preferences" on page 48.)
	The printer driver may be incorrectly installed.	Repair the machine software. (See "Installing the driver locally" on page 23.)
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.	

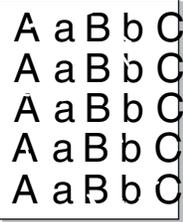
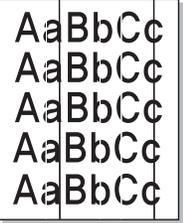
Condition	Possible cause	Suggested solutions
<b>(Continued) The machine does not print.</b>	The document size is so big that the hard disk space of the computer is insufficient to access the print job.	Get more hard disk space and print the document again.
<b>The machine selects print materials from the wrong paper source.</b>	The paper option that was selected in the <b>Printing Preferences</b> may be incorrect.	For many software applications, the paper source selection is found under the <b>Paper</b> tab within the <b>Printing Preferences</b> . Select the correct paper source. See the printer driver help screen. (See "Opening printing preferences" on page 48.)
<b>A print job is extremely slow.</b>	The job may be very complex.	Reduce the complexity of the page or try adjusting the print quality settings.
<b>Half the page is blank.</b>	The page orientation setting may be incorrect.	Change the page orientation in your application. See the printer driver help screen.
	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.
<b>The machine prints, but the text is wrong, garbled, or incomplete.</b>	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 application'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.
	If you are in a DOS environment, the font setting for your machine may be set incorrectly.	Change the language setting. (See "Changing font setting" on page 41.)

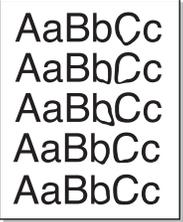
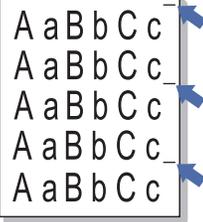
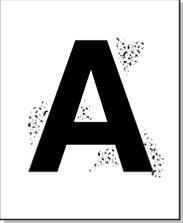
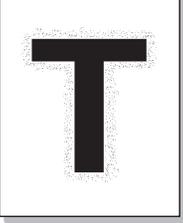
Condition	Possible cause	Suggested solutions
<b>Pages print, but they are blank.</b>	The toner cartridge is defective or out of toner.	Redistribute the toner, if necessary. If necessary, replace the toner cartridge.
	The file may have blank pages.	Check the file to ensure that it does not contain blank pages.
	Some parts, such as the controller or the board, may be defective.	Contact a service representative.
<b>The machine does not print PDF file correctly. Some parts of graphics, text, or illustrations are missing.</b>	Incompatibility between the PDF file and the Acrobat products.	Printing the PDF file as an image may enable the file to print. Turn on <b>Print As Image</b> from the Acrobat printing options.  It will take longer to print when you print a PDF file as an image.
<b>The print quality of photos is not good. Images are not clear.</b>	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.
<b>Before printing, the machine emits vapor near the output tray.</b>	Using damp paper can cause vapor during printing.	This is not a problem. Just keep printing.
<b>The machine does not print special- sized paper, such as billing paper.</b>	Paper size and paper size setting do not match.	Go to the printer properties and click the paper tab. Correct the paper size in the custom option. (See "Opening printing preferences" on page 48.)

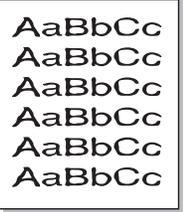
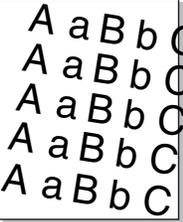
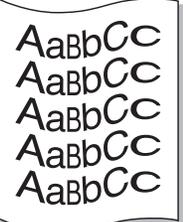
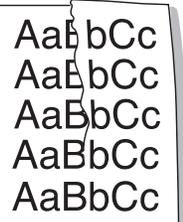
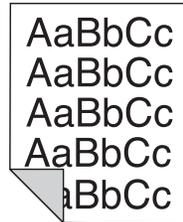
## Printing quality problems

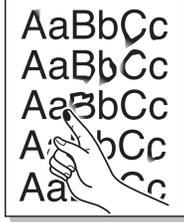
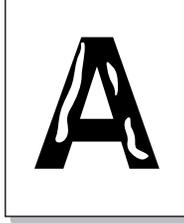
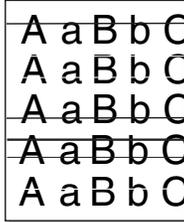
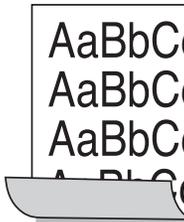
If the inside of the machine is dirty or paper has been loaded improperly, there might be a reduction in print quality. See the table below to clear the problem.

Condition	Suggested Solutions
<b>Light or faded print</b> 	<ul style="list-style-type: none"> <li>If a vertical white streak or faded area appears on the page, the toner supply is low. You may be able to temporarily extend the toner cartridge life. (See "Redistributing toner" on page 68.) If this does not improve the print quality, install a new toner cartridge.</li> <li>The paper may not meet paper specifications; for example, the paper may be too moist or rough. (See "Print media specifications" on page 92.)</li> <li>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.</li> <li>A combination of faded or smeared defects may indicate that the toner cartridge needs cleaning. (See "Cleaning the inside" on page 65.)</li> <li>The surface of the LSU part inside the machine may be dirty. (See "Cleaning the inside" on page 65.)</li> </ul>
<b>The top half of the paper is printed lighter than the rest of the paper</b> 	<p>The toner might not adhere properly to this type of paper.</p> <ul style="list-style-type: none"> <li>Change the printer option and try again. Go to the <b>Printing Preferences</b>, click the <b>Paper</b> tab, and set the paper type to <b>Recycled</b>.</li> </ul>
<b>Toner specks</b> 	<ul style="list-style-type: none"> <li>The paper may not meet specifications; for example, the paper may be too moist or rough. (See "Print media specifications" on page 92.)</li> <li>The transfer roller may be dirty. Clean the inside of your machine. Contact a service representative.</li> <li>The paper path may need cleaning. Contact a service representative.</li> </ul>

Condition	Suggested Solutions
<b>Dropouts</b> 	<p>If faded areas, generally rounded, occur randomly on the page:</p> <ul style="list-style-type: none"> <li>A single sheet of paper may be defective. Try reprinting the job.</li> <li>The moisture content of the paper is uneven or the paper has moist spots on its surface. Try a different brand of paper. (See "Print media specifications" on page 92.)</li> <li>The paper lot is bad. The manufacturing processes can cause some areas to reject toner. Try a different kind or brand of paper.</li> <li>Change the printer option and try again. Go to <b>Printing Preferences</b>, click <b>Paper</b> tab, and set type to <b>Thick</b>. (See "Opening printing preferences" on page 48.)</li> <li>If these steps do not correct the problem, contact a service representative.</li> </ul>
<b>White Spots</b> 	<p>If white spots appear on the page:</p> <ul style="list-style-type: none"> <li>The paper is too rough and a lot of dirt from a paper falls to the inner devices within the machine, so the transfer roller may be dirty. Clean the inside of your machine. (See "Cleaning the inside" on page 65.)</li> <li>The paper path may need cleaning. (See "Cleaning the inside" on page 65.)</li> </ul>
<b>Vertical lines</b> 	<p>If black vertical streaks appear on the page:</p> <ul style="list-style-type: none"> <li>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 84.)</li> </ul> <p>If white vertical streaks appear on the page:</p> <ul style="list-style-type: none"> <li>The surface of the LSU part inside the machine may be dirty. (See "Cleaning the inside" on page 65.)</li> </ul>
<b>Color or Black background</b> 	<p>If the amount of background shading becomes unacceptable:</p> <ul style="list-style-type: none"> <li>Change to a lighter weight paper. (See "Print media specifications" on page 92.)</li> <li>Check the environmental conditions: very dry conditions (low humidity) or a high level of humidity (higher than 80% RH) can increase the amount of background shading.</li> <li>Remove the old toner cartridge and, install a new one. (See "Replacing the toner cartridge" on page 84.)</li> </ul>

Condition	Suggested Solutions
<b>Toner smear</b> 	<p>If toner smears on the page:</p> <ul style="list-style-type: none"> <li>Clean the inside of the machine. (See "Cleaning the inside" on page 65.)</li> <li>Check the paper type and quality. (See "Print media specifications" on page 92.)</li> <li>Remove the toner cartridge and then, install a new one. (See "Replacing the toner cartridge" on page 84.)</li> </ul>
<b>Vertical repetitive defects</b> 	<p>If marks repeatedly appear on the printed side of the page at even intervals:</p> <ul style="list-style-type: none"> <li>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 84.)</li> <li>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.</li> <li>The fusing assembly may be damaged. Contact a service representative.</li> </ul>
<b>Background scatter</b> 	<p>Background scatter results from bits of toner randomly distributed on the printed page.</p> <ul style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>If background scatter covers the entire surface area of a printed page, adjust the print resolution through your software application or in <b>Printing Preferences</b>. (See "Opening printing preferences" on page 48.)</li> </ul>
<b>Toner particles are around bold characters or pictures</b> 	<p>The toner might not adhere properly to this type of paper.</p> <ul style="list-style-type: none"> <li>Change the printer option and try again. Go to the <b>Printing Preferences</b>, click the <b>Paper</b> tab, and set the paper type to <b>Recycled</b>.</li> </ul>

Condition	Suggested Solutions
<p><b>Misformed characters</b></p> 	<ul style="list-style-type: none"> <li>If characters are improperly formed and producing hollow images, the paper stock may be too slick. Try different paper. (See "Print media specifications" on page 92.)</li> <li>If characters are improperly formed and producing a wavy effect, the scanner unit may need service. Contact a service representative.</li> </ul>
<p><b>Page skew</b></p> 	<ul style="list-style-type: none"> <li>Ensure that the paper is loaded properly.</li> <li>Check the paper type and quality. (See "Print media specifications" on page 92.)</li> <li>Ensure that the guides are not too tight or too loose against the paper stack.</li> </ul>
<p><b>Curl or wave</b></p> 	<ul style="list-style-type: none"> <li>Ensure that the paper is loaded properly.</li> <li>Check the paper type and quality. Both high temperature and humidity can cause paper curl. (See "Print media specifications" on page 92.)</li> <li>Turn the stack of paper over in the tray. Also try rotating the paper 180° in the tray.</li> </ul>
<p><b>Wrinkles or creases</b></p> 	<ul style="list-style-type: none"> <li>Ensure that the paper is loaded properly.</li> <li>Check the paper type and quality. (See "Print media specifications" on page 92.)</li> <li>Turn the stack of paper over in the tray. Also try rotating the paper 180° in the tray.</li> </ul>
<p><b>Back of printouts are dirty</b></p> 	<ul style="list-style-type: none"> <li>Check for leaking toner. Clean the inside of the machine. (See "Cleaning the inside" on page 65.)</li> <li>Clean the fuser belt. (See "Cleaning a fuser belt" on page 65.)</li> <li>The toner cartridge is almost empty.</li> </ul>

Condition	Suggested Solutions
<p><b>Solid Color or Black pages</b></p> 	<ul style="list-style-type: none"> <li>The toner cartridge may not be installed properly. Remove the cartridge and reinsert it.</li> <li>The toner cartridge may be defective. Remove the toner cartridge and install a new one. (See "Replacing the toner cartridge" on page 84.)</li> <li>The machine may require repair. Contact a service representative.</li> </ul>
<p><b>Loose toner</b></p> 	<ul style="list-style-type: none"> <li>Clean the inside of the machine. (See "Cleaning the inside" on page 65.)</li> <li>Check the paper type and quality. (See "Print media specifications" on page 92.)</li> <li>Remove the toner cartridge and then, install a new one. (See "Replacing the toner cartridge" on page 84.)</li> <li>If the problem persists, the machine may require repair. Contact a service representative.</li> </ul>
<p><b>Character Voids</b></p> 	<p>Character voids are white areas within parts of characters that should be solid black:</p> <ul style="list-style-type: none"> <li>If you are using transparencies, try another type of transparency. Because of the composition of transparencies, some character voids are normal.</li> <li>You may be printing on the wrong surface of the paper. Remove the paper and turn it around.</li> <li>The paper may not meet paper specifications. (See "Print media specifications" on page 92.)</li> </ul>
<p><b>Horizontal stripes</b></p> 	<p>If horizontally aligned black streaks or smears appear:</p> <ul style="list-style-type: none"> <li>The toner cartridge may be installed improperly. Remove the cartridge and reinsert it.</li> <li>The toner cartridge may be defective. Remove the toner cartridge and install a new one. (See "Replacing the toner cartridge" on page 84.)</li> <li>If the problem persists, the machine may require repair. Contact a service representative.</li> </ul>
<p><b>Curl</b></p> 	<p>If the printed paper is curled or paper does not feed into the machine:</p> <ul style="list-style-type: none"> <li>Turn the stack of paper over in the tray. Also try rotating the paper 180° in the tray.</li> <li>Change the printer option and try again. Go to <b>Printing Preferences</b>, click <b>Paper</b> tab, and set type to <b>Thin</b>. (See "Opening printing preferences" on page 48.)</li> </ul>

Condition	Suggested Solutions
<b>An unknown image repetitively appears on a few sheets or loose toner, light print, or contamination occurs.</b>	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 correct altitude setting to your machine. (See "Altitude adjustment" on page 40.)

## Common PostScript problems

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

Problem	Possible cause	Solution
<b>PostScript file cannot be printed.</b>	The PostScript driver may not be installed correctly.	<ul style="list-style-type: none"> <li>Install the PostScript driver. (See "Installing the driver locally" on page 23.)</li> <li>Print a configuration page and verify that the PS version is available for printing.</li> <li>If the problem persists, contact a service representative.</li> </ul>
<b>"Limit Check Error" report prints.</b>	The print job was too complex.	You might need to reduce the complexity of the page or install more memory. (See "Installing a memory module" on page 87.)
<b>A PostScript error page prints.</b>	The print job may not be PostScript.	Make sure that the print job is a PostScript job. Check to see whether the software application expected a setup or PostScript header file to be sent to the machine.
<b>The optional tray is not selected in the driver.</b>	The printer driver has not been configured to recognize the optional tray.	Open the PostScript driver properties, select the <b>Device Options</b> tab, and set the tray option.
<b>When printing a document in Macintosh with Acrobat Reader 6.0 or higher, colors print incorrectly.</b>	The resolution setting in the printer driver may not be matched with the one in Acrobat Reader.	Make sure that the resolution setting in your printer driver matches the one in Acrobat Reader.

## Common Windows problems

Condition	Suggested solutions
<b>"File in Use" message appears during installation.</b>	Exit all software applications. Remove all software from the printer's startup group, then restart Windows. Reinstall the printer driver.
<b>"General Protection Fault", "Exception OE", "Spool 32", or "Illegal Operation" messages appear.</b>	Close all other applications, reboot Windows and try printing again.
<b>"Fail To Print", "A printer timeout error occurred" messages appear.</b>	These messages may appear during printing. Just keep waiting until the machine finishes printing. If the message appears in standby mode or after printing has been completed, check the connection and/or whether an error has occurred.

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

## Common Linux problems

condition	Suggested solutions
<b>The machine does not print.</b>	<ul style="list-style-type: none"> <li>Check if the printer driver is installed in your system. Open Unified Driver Configurator and switch to the <b>Printers</b> tab in <b>Printers configuration</b> window to look at the list of available machines. Make sure that your machine is displayed on the list. If not, open <b>Add new printer wizard</b> to set up your device.</li> <li>Check if the machine is started. Open <b>Printers configuration</b> and select your machine on the printers list. Look at the description in the <b>Selected printer</b> pane. If its status contains <b>Stopped</b> string, press the <b>Start</b> button. After that normal operation of the machine should be restored. The "stopped" status might be activated when some problems in printing occurred.</li> <li>Check if your application has special print option such as "-oraw". If "-oraw" is specified in the command line parameter, then remove it to print properly. For Gimp front-end, select "print" -&gt; "Setup printer" and edit command line parameter in the command item.</li> </ul>
<b>Some color images come out all black.</b>	This is a known bug in Ghostscript (until GNU Ghostscript version 7.05) when the base color space of the document is indexed color space and is converted through CIE color space. Because Postscript uses CIE color space for Color Matching System, you should upgrade Ghostscript on your system to at least GNU Ghostscript version 7.06 or later. You can find recent Ghostscript versions at <a href="http://www.ghostscript.com">www.ghostscript.com</a> .

condition	Suggested solutions
<b>Some color images come out in unexpected colors.</b>	This is a known bug in Ghostscript (until GNU Ghostscript version 7.xx) when the base color space of the document is indexed RGB color space and it is converted through CIE color space. Because Postscript uses CIE color space for Color Matching System, you should upgrade Ghostscript on your system to at least GNU Ghostscript version 8.xx or later. You can find recent Ghostscript versions at <a href="http://www.ghostscript.com">www.ghostscript.com</a> .
<b>The machine does not print whole pages, and output is printed on half the page.</b>	It is a known problem that occurs when a color machine is used on version 8.51 or earlier of Ghostscript, 64-bit Linux OS, and has been reported to <a href="http://bugs.ghostscript.com">bugs.ghostscript.com</a> as Ghostscript Bug 688252. The problem is solved in AFPL Ghostscript v. 8.52 or above. Download the latest version of AFPL Ghostscript from <a href="http://sourceforge.net/projects/ghostscript/">http://sourceforge.net/projects/ghostscript/</a> and install it to solve this problem.
<b>I encounter error "Cannot open port device file" when printing a document.</b>	Avoid changing print job parameters (via LPR GUI, for example) while a print job is in progress. Known versions of CUPS (Common Unix Printing System) server break the print job whenever print options are changed and then try to restart the job from the beginning. Since Unified Linux Driver locks the port while printing, the abrupt termination of the driver keeps the port locked and unavailable for subsequent print jobs. If this situation occurs, try to release the port by selecting <b>Release port</b> in <b>Port configuration</b> window.
<b>When printing a document over the network in SuSE 9.2, the printer does not print.</b>	The CUPS (Common Unix Printing System) version distributed with SuSE Linux 9.2 (cups-1.1.21) has a problem with ipp (Internet Printing Protocol) printing. Use the socket printing instead of ipp or install later version of CUPS (Common Unix Printing System) (cups-1.1.22 or higher).

 Refer to Linux User's Guide that came with your computer for further information on Linux error messages.

## Common Macintosh problems

condition	Suggested solutions
<b>The machine does not print PDF files correctly. Some parts of graphics, text, or illustrations are missing.</b>	Printing the PDF file as an image may enable the file to print. Turn on <b>Print As Image</b> from the Acrobat printing options.  It will take longer to print when you print a PDF file as an image.
<b>The document has printed, but the print job has not disappeared from the spooler in Mac OS X10.3.2.</b>	Update your MAC OS to MAC OS X 10.3.3. or higher.
<b>Some letters are not displayed normally during the cover page printing.</b>	Mac OS cannot create the font during the cover page printing. The English alphabet and numbers are displayed normally on the cover page.
<b>When printing a document in Macintosh with Acrobat Reader 6.0 or higher, colors print incorrectly.</b>	Make sure that the resolution setting in your machine driver matches the one in Acrobat Reader.

 Refer to Macintosh User's Guide that came with your computer for further information on Macintosh error messages.

# supplies and accessories

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

## This chapter includes:

- How to purchase
- Available supplies
- Available accessories
- Available maintenance parts
- Replacing the toner cartridge
- Replacing the paper transfer belt

 Available accessories may differ from country to country. Contact your sales representatives to obtain the list of available accessories.

## How to purchase

To order Samsung-authorized supplies, accessories and, maintenance parts, contact your local Samsung dealer or the retailer where you purchased your machine. You can also visit [www.samsung.com/supplies](http://www.samsung.com/supplies), select your country/region, and obtain information on calling for service.

## Available supplies

When supplies reach their lifespan, you can order the following types of supplies for your machine:

Type	Average yield	Part name
<b>Standard yield<sup>a</sup> toner cartridge</b>	Average continuous cartridge yield: 7,000 standard pages.	CLT-C609S (Cyan) CLT-M609S (Magenta) CLT-Y609S (Yellow) CLT-K609S (Black)  Region A <sup>b</sup> : CLT-C6092S (Cyan) CLT-M6092S (Magenta) CLT-Y6092S (Yellow) CLT-K6092S (Black)
<b>Paper transfer belt</b>	Approx. 50,000 pages	CLT-T508

a. Declared yield value in accordance with ISO/IEC 19798.

b. Region A: Albania, Austria, Belgium, Bosnia, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Italy, Macedonia, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, UK.

To replace a toner cartridge. (See "Replacing the toner cartridge" on page 84.)

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

 You must purchase supplies, including toner cartridges, in the same

- Necessary Precautions to take when installing accessories
- Activating the added accessories in printer properties
- Upgrading a memory module
- Installing a wireless network interface card
- Installing a hard disk

country where you purchased your machine. Otherwise, supplies will be incompatible with your machine since the system configuration of these vary from country to country.

## Available accessories

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

Accessory	function	Part name
<b>Memory module</b>	Extends your machine's memory capacity.	ML-MEM170: 512 MB
<b>Optional tray 2/3</b>	If you are experiencing frequent paper supply problems, you can attach up to two additional 500 sheet trays. You can print documents in various sizes and types of print materials in each tray.	CLP-S775A
<b>Hard Disk</b>	Allows you to enhance the printer's capability and print in various ways.	ML-HDK425
<b>IEEE 802.11 b/g/n Wireless LAN<sup>a</sup></b>	Allows you to connect your printer to a wireless network.	ML-NWA65L

Accessory	function	Part name
<b>IEEE1284 Parallel Connector</b>	<p>Allows you to use various interface.</p> <ul style="list-style-type: none"> <li>When installing the printer driver with an IEEE1284 parallel connector, the machine might not be found and after installing the printer driver, only basic printing features are available.</li> <li>If you want to check the machine's status or set the settings, connect the machine to a computer with a USB cable or a network.</li> <li>If you use the IEEE 1284 parallel connector, you can not use the USB cable.</li> </ul>	ML-PAR100

a. Depending on your country, wireless LAN cards may not be available. Contact your local Samsung dealer or the retailer where you bought your printer.

## Available maintenance parts

To avoid print quality and paper feed problems resulting from worn parts and to maintain your machine in top working condition, the following parts will need to be replaced after printing the specified number of pages or when the life span of each item has expired.

Parts	Average yield <sup>a</sup>
<b>Fuser unit</b>	Approx. 100,000 pages
<b>Pickup roller (FCF)</b>	B4 Approx. 100,000 pages
<b>Pickup roller (MP)</b>	Approx. 100,000 pages
<b>Pickup roller (SCF)</b>	Approx. 200,000 pages
<b>Forward (SCF)</b>	Approx. 200,000 pages
<b>Retard (FCF)</b>	B4 Approx. 100,000 pages
<b>Friction (MP)</b>	Approx. 100,000 pages
<b>Retard (SCF)</b>	Approx. 100,000 pages
<b>Dust cleaning kit</b>	Approx. 100,000 pages

a. It will be affected by operating system used, computing performance, application software, connecting method, media type, media size and job complexity.

To purchase maintenance parts, contact the source where you bought the machine.

Replacing maintenance parts can be performed only by an authorized service provider, dealer, or the retailer where you bought the machine. The warranty does not cover the replacement of any maintenance parts after their lifespan.

## Replacing the toner cartridge

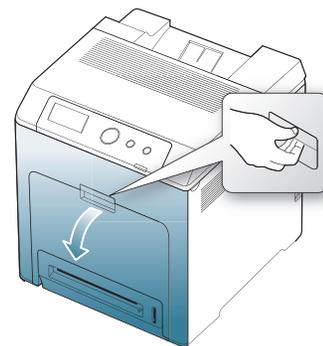
Click this link to open an animation about replacing a toner cartridge.

The machine uses four colors and has a different print cartridge for each one: yellow (Y), magenta (M), cyan (C), and black (K).

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

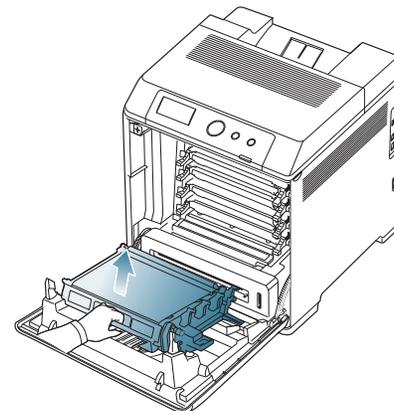
At this stage, the toner cartridge needs to be replaced. Check the type of the toner cartridge for your machine. (See "Available supplies" on page 83.)

- Using the handle, completely open the front cover.

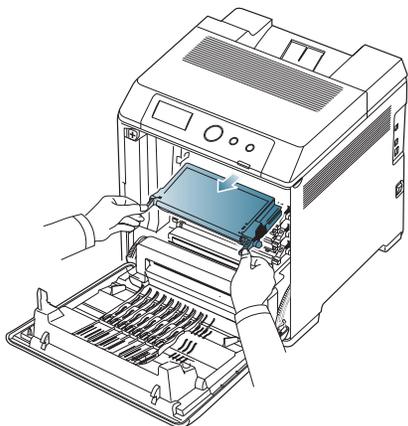


- Do not touch the green surface, the OPC drum or the front of the print cartridge, with your hands or any other material. Use the handle on each cartridge in order to avoid touching this area.
- Be careful not to scratch the surface of the paper transfer belt.
- If you leave the front cover open for more than a few minutes, the OPC drum can be exposed to light. This will cause damage to the OPC drum. Close the front cover when the installation need to be halted for any reason.

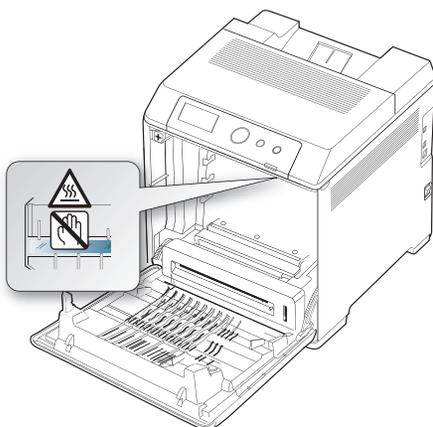
- Press the green release handle to release the paper transfer belt. Holding the handle on the paper transfer belt, lift it out of the machine.



3. Grasp the handles on the empty print cartridge and pull to remove the cartridge from the machine.



-  If you open the front cover, be careful not to touch the underneath the control panel (the lower part of the fuser unit). The temperature of the fuser unit might be high and could damage your skin.

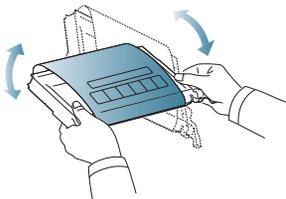


-  When you open the front cover and work inside the machine, it is highly recommend that you remove the paper transfer belt first. Because the work you do could contaminate the paper transfer belt.

4. Remove the new toner cartridge from its bag.

-  • Don't use sharp objects, such as a knife or scissors, to open the print cartridge package. You could damage the surface of the print cartridge.
- To prevent damage, do not expose the print cartridge to light for more than a few minutes. Cover it with a piece of paper to protect it if necessary.

5. Slowly shake the cartridge five or six times to distribute the toner evenly inside the cartridge. It will assure maximum copies per cartridge.



6. Place the print cartridge on a flat surface, as shown, and remove the paper covering the print cartridge by removing the tape.

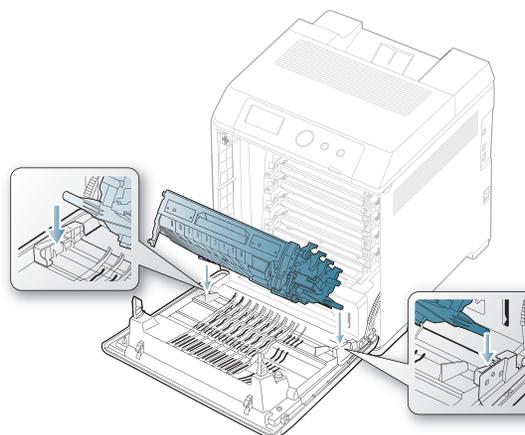


-  If toner gets on your clothing, wipe it off with a dry cloth and wash clothing in cold water. Hot water sets toner into fabric.

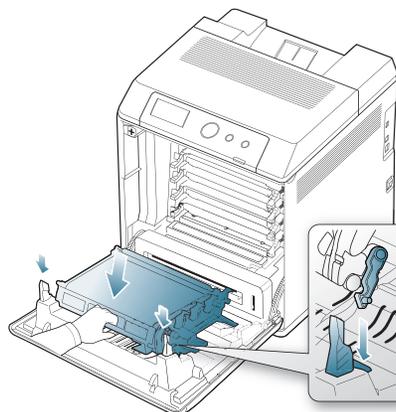
-  Do not touch the green surface, the OPC drum of the cartridge. Use the handle on the cartridge to avoid touching this area.

7. Make sure that the color of the print cartridge matches the color slot and then grasp the handles on the print cartridge. Insert the cartridge until it clicks into place.

8. Holding the handle on the paper transfer belt, align it with the slots on the inside of the front cover.



9. Lower the paper transfer belt until it is parallel with the front cover and firmly seated.



10. Close the front cover. Make sure that the cover is securely closed.

-  If the front cover is not completely closed, the machine will not operate.

## Replacing the paper transfer belt

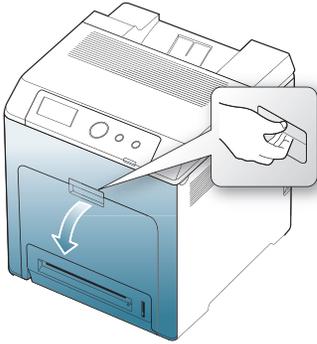
-  Click this link to open an animation about replacing a paper transfer

belt.

After the life span of the paper transfer belt is complete, you have to replace it.

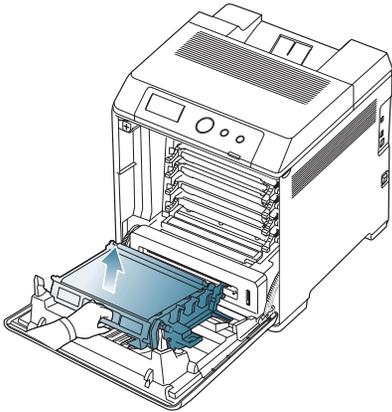
- The transfer belt-related message appears on the display, telling it's time for a replacement.
-  The life span of the paper transfer belt may be affected by operating environment, printing interval, media type, and media size.

1. Using the handle, completely open the front cover.



-  Do not touch the green surface, the OPC drum or the front of the print cartridge, with your hands or any other material. Use the handle on each cartridge in order to avoid touching this area.
- Be careful not to scratch the surface of the paper transfer belt.
- If you leave the front cover open for more than a few minutes, the OPC drum can be exposed to light. This will cause damage to the OPC drum. Close the front cover should the installation need to be halted for any reason.

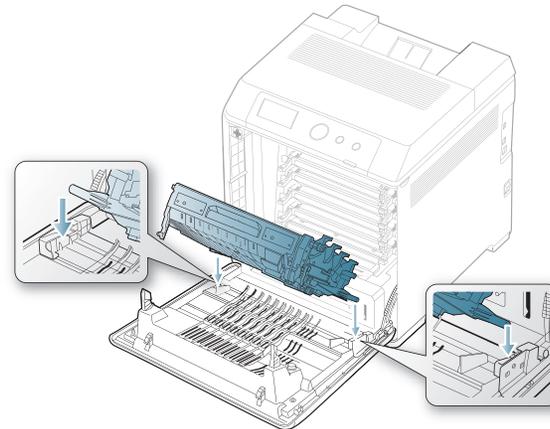
2. Press the green release handle to release the paper transfer belt. Holding the handle on the paper transfer belt, lift it out of the machine.



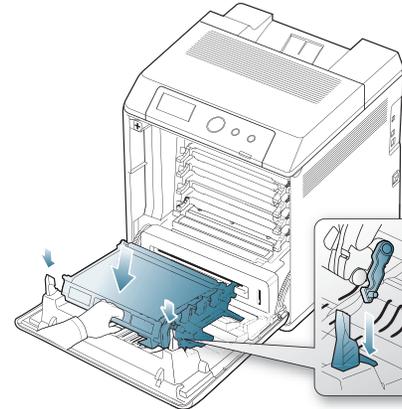
3. Remove a new paper transfer belt from its bag.
4. Remove the paper covering the paper transfer belt.

-  Do not use sharp objects, such as a knife or scissors, to open the paper transfer belt package. You could damage the surface of the paper transfer belt.
- Be careful not to scratch the surface of the paper transfer belt.

5. Holding the handle on the new paper transfer belt, align it with the slots on the inside of the front cover.



6. Lower the paper transfer belt until it is parallel with the front cover and firmly seated.



7. Close the front cover to resume printing.

-  If the front cover is not completely closed, the machine will not operate.

## Necessary Precautions to take when installing accessories

- 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.
- Activating the added accessories in the PS driver properties.  
After installing an accessory such as an optional tray, PS driver users must do the additional setting. Go to the PS printer properties and set the added accessory activated.

-  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. Dispose used batteries according to the instructions.

## Activating the added accessories in printer properties

After installing added accessories, you need to select it in the printer properties of the printer driver in order to use it.

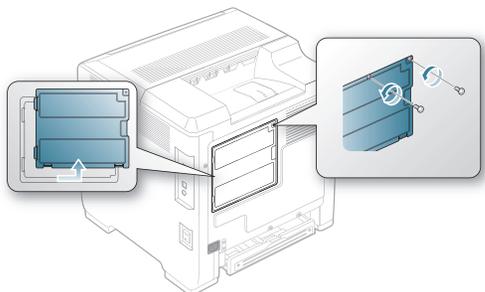
1. Install the driver. (See "Installing the driver locally" on page 23 or "Installing wired network connected machine's driver" on page 28.)
2. For Windows 2000, select **Settings > Printers**.
  - For Windows XP/2003, select **Printers and Faxes**.
  - For Windows 2008/Vista, select **Control Panel > Hardware and Sound > Printers**.
  - For Windows 7, select **Control Panel > Hardware and Sound > Devices and Printers**.
  - For Windows Server 2008 R2, select **Control Panel > Hardware > Devices and Printers**.
3. For Windows 2000, XP, 2003, 2008 and Vista, double-click your machine.  
For Windows 7 and Windows Server 2008 R2, right click your printer icon > context menus > **See what's printing**.
4. Select the your machine's driver and right-click to open **Properties**.
5. In printer driver properties, select **Device Options**.
6. In printer driver properties, set the necessary options.
7. Click **OK**.

## Upgrading a memory module

Your machine has a dual in-line memory module (DIMM). Use this memory module slot to install additional memory. (See "Available accessories" on page 83.)

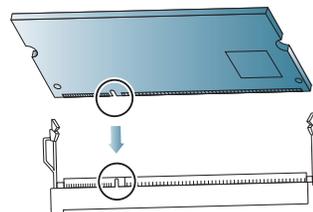
### Installing a memory module

1. Turn the machine off and unplug all cables from the machine.
2. Open the control board cover. Release the screw, then lift up the cover slightly and pull the cover to the right.



3. Take out a new memory module from its plastic bag.

4. Holding the memory module by the edges, align the memory module on the slot at about a 30-degree tilt. Make sure that the notches of the module and the grooves on the slot fit each other.

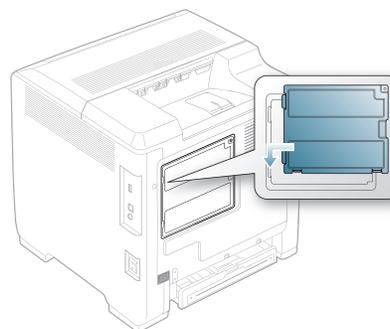


-  The notches and grooves illustrated above may not match those on an actual memory module and its slot.

5. Press the memory module into the slot with care until you hear a 'click'.

-  Do not press the memory module strongly or the module may be damaged. If the module does not seem to fit into the slot properly, carefully try the previous procedure again.

6. Replace the control board cover and fasten the cover with the screw.



7. Reconnect the power cord and machine cable. Turn on the machine.

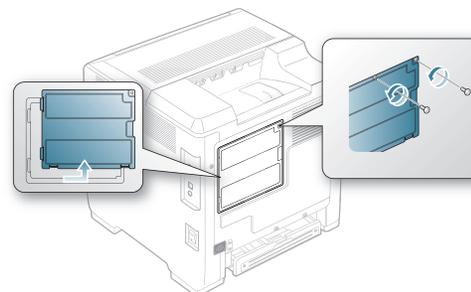
## Installing a wireless network interface card

The machine is equipped with a network interface which allows you to use your printer on a network. You can also purchase a wireless network interface card to enable the use of the printer in wireless network environments.

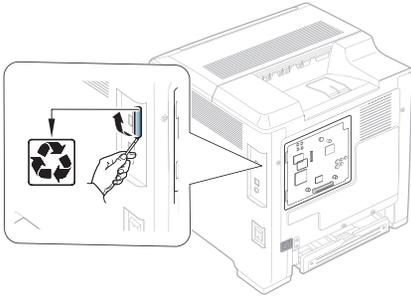
The order information is provided for optional wireless network interface card. (See "Available accessories" on page 83.)

### Installing a wireless network interface card

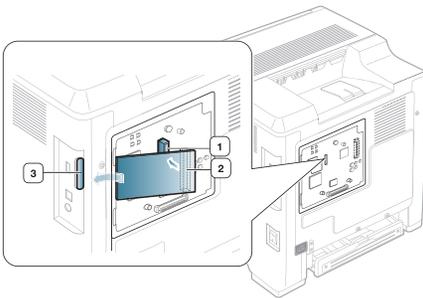
1. Turn the machine off and unplug all cables from the machine.
2. Open the control board cover. Release the screw, then lift up the cover slightly and pull the cover to the right.



- Detach the dummy panel on your machine using a strong stick-like tool, such as a screwdriver.

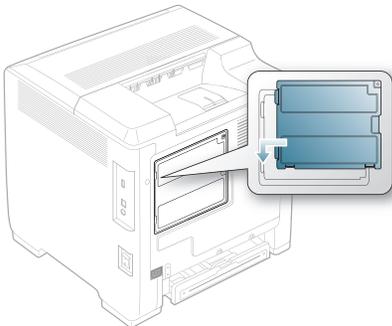


- Take out a new wireless interface card from its plastic bag.
- Align the wireless network interface card into the guide, and align the connector on the card with the connector on the control board. Push the card firmly into the connector until it is completely and securely in place.



- wireless network interface card connector
- wireless network interface card
- wireless network interface card guide

- Replace the control board cover and fasten the cover with the screw.



- Reconnect the power cord and machine cable. Turn on the machine.
- Set the wireless network environment. (See "Wireless network setup" on page 32.)

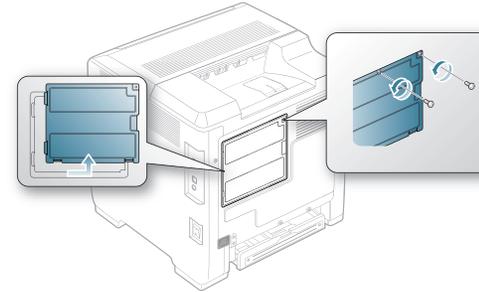
## Installing a hard disk

Installing the hard disk allows the data from your computer to be sent to the print queue of the printer hard disk. This decreases the workload of the computer. You can also use various print features, such as storing a job in the hard disk, proofing a job, and printing private documents.

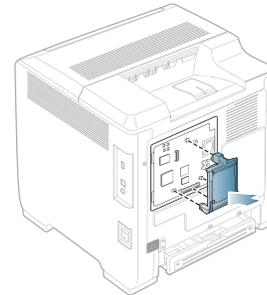
The order information is provided for optional hard disk. (See "Available accessories" on page 83.)

## Installing a hard disk

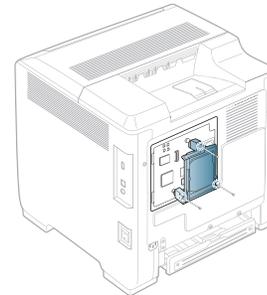
- Turn the machine off and unplug all cables from the machine.
- Open the control board cover. Release the screw, then lift up the cover slightly and pull the cover to the right.



- Take out a new hard disk from its plastic bag.
- Align the connector on the hard disk with the connector on the control board. Push the hard disk in until it is latched into place.



- Fasten the screws supplied with your new hard disk.



- Reconnect the power cord and machine cable. Turn on the machine.
- You must activate the added hard disk in the driver properties. (See "Activating the added accessories in printer properties" on page 87.)

## Printing with the optional hard disk

After installing the optional hard disk, you can use advanced printing features, such as storing or spooling a print job to the hard disk, proofing a job, and specifying of printing a private job in the printer properties window.

Once you have stored files in the hard disk, you can easily print or delete the stored files using the control panel of your printer.

## Storing a job

You can store jobs in the installed hard disk.

- Open the document you want to print.
- Select **Print** from the file menu. The **Print** window appears.

3. Select your machine from **Select Printer**.
4. Click **Properties** or **Preferences**.
5. Click the **Advanced** tab and click **Job Setting**.
6. Select the print mode you want from the drop-down list.  
(See "Using help" on page 53.)
7. Enter the user's name and file name.
8. Click **OK** until the **Print** window is displayed.
9. Click **OK** or **Print** to start printing.

### Printing or deleting a stored job

You can print or delete jobs currently stored in the hard disk.

1. Press  on the control panel.
2. Press the up/down arrow to highlight **Job Management** and press **OK**.
3. Press the up/down arrow to highlight **Stored Job** and press **OK**.
4. Press the up/down arrow to highlight the user's name and file name you want use and press **OK**.

 If the select file is a confidential print job, enter the specified 4-digit password.

Use the up/down arrow to enter digits and use the left/right arrow to move between digits. When you finish entering the password, press **OK**.

If you enter the incorrect password, **Invalid Password** appears. Reenter the correct password.

5. Press the up/down arrow to highlight the desired setting and press **OK**.
  - **Print:** You can print a stored job.
  - **Delete:** You can delete a stored job.
6. When **Yes** appears, press **OK**.

### Controlling the active job queue

All of the print jobs waiting to be printed are listed in the active job queue in the order you sent them to the printer. You can delete a job from the queue before printing, or promote a job to print sooner.

1. Press  on the control panel.
2. Press the up/down arrow to highlight **Job Management** and press **OK**.
3. Press the up/down arrow to highlight **Active Job** and press **OK**.
4. Press the up/down arrow to highlight the user's name and file name you want use and press **OK**.

 If the select file is a confidential print job, enter the specified 4-digit password.

Use the up/down arrow to enter digits and use the left/right arrow to move between digits. When you finish entering the password, press **OK**.

If you enter the incorrect password, **Invalid Password** appears. Reenter the correct password.

5. Press the up/down arrow to highlight the desired setting and press **OK**.
  - **Cancel:** You can delete a file from the queue.
  - **Promote:** You can select a job waiting in the active job queue and change its print order so that it can be printed sooner.
  - **Release:** You can print a job scheduled to be printed at a specified time immediately. In this case, the job currently printing is stopped and the selected job will be printed. This function is available when the job is scheduled for later printing.



**Release** option appears only when you select a **Print Schedule** print job.

6. When **Yes** appears, press **OK**.

### Form file

Form overlay is images stored in the printer hard disk drive (HDD) as a special file format that can be printed in layers on any document.

#### Creating new form files

1. Create or open a document containing text or an image for use in a new form file.
2. To save the document as a form file, access **Printing Preferences**.  
(See "Opening printing preferences" on page 48.)
3. Click the **Advanced** tab, and select **Advanced**.
4. In the **Advanced Output Options** window, check **Save as Form for Overlay**.
5. Click **Search**.
6. Type a file name of up to eight characters in the **File name** box. Select the destination path and click **Save**.
7. Click **OK** or **Print** until you exit the **Print** window.
8. A confirm message appears, click **Yes** to save.  
The file is not printed. Instead, it is stored on your computer hard disk drive.



If you click **NO**, the machine prints your form without saving.

9. A confirm message appears, click **Yes** to save.



The form file size must be the same as the document you print with the form file.

### File Policy

You can choose the file policy for generating file name before you proceed with the job through HDD. If the HDD memory already has the same name when you entered a new file name, you can rename or overwrite it.

1. Press  on the control panel.
2. Press the up/down arrow to highlight **Job Management** and press **OK**.
3. Press the up/down arrow to highlight **File Policy** and press **OK**.
4. Press the up/down arrow to highlight the desired setting and press **OK**.
  - **Rename :** If the HDD memory already has the same name when you enter a new file name, the file will be saved as a different name that is automatically programmed.
  - **Overwrite :** You can set the machine to delete previous job information on HDD as you store new job information.
5. Press **OK**.

### Deleting residual image data

ImageOverwrite is a security measure for customers who are concerned about unauthorized access and duplication of classified or private document.

1. Press  on the control panel.
2. Press the up/down arrow to highlight **Job Management** and press **OK**.
3. Press the up/down arrow to highlight **ImageOverwrite** and press **OK**.

4. Press the up/down arrow to highlight the desired setting and press **OK**.
  - **Automatic** : All residual image data from the machine will be erased immediately after each job has been processed.
  - **Manual** : This option provides an on-demand facility for a system administrator to erase all the real image data remained in HDD after this option enabled. All existing jobs will be deleted regardless of their status and all job submissions will be prohibited for the duration of the overwrite.
5. Press the up/down arrow to move to **On** or **Off** for **Automatic**.  
Press the up/down arrow to move to **Enable** or **Disable** for **Manual**.  
 If you selected **Manual** enabled, the machine confirms if the overwrite feature starts now. Press the up/down arrow to select **Yes** or **No**. If you select **Yes**, **Manual** overwrite starts as soon as you select **Yes**. If you select **No**, this feature will be enabled.
6. Press **OK**.

# specifications

This chapter guides you about this machine's specifications such as various features.

**This chapter include:**

- General specifications
- Print media specifications

## General specifications

 The specification values listed below are subject to change without notice. See [www.samsung.com/printer](http://www.samsung.com/printer) for possible changes in information.

Items		Description
<b>Dimension</b>	<b>Width x Length x Height</b>	446 x 481 x 464 mm (17.6 x 18.9 x 18.3 inches) without optional tray
<b>Weight</b>	<b>Machine with consumables</b>	30.4 Kg (67.02 lbs)
<b>Noise Level<sup>a</sup></b>	<b>Ready mode</b>	35 dB (A)
	<b>Print mode</b>	54 dB (A)
<b>Temperature</b>	<b>Operation</b>	10 to 32.5 °C (50 to 90.5 °F)
	<b>Storage (packed)</b>	-20 to 40°C (-4 to 104°F)
<b>Humidity</b>	<b>Operation</b>	20 to 80% RH
	<b>Storage (packed)</b>	0 to 95% RH
<b>Power rating<sup>b</sup></b>	<b>110 volt models</b>	AC 110 - 127 V
	<b>220 volt models</b>	AC 220 - 240 V
<b>Power consumption</b>	<b>Average operating mode</b>	Less than 750 Wh
	<b>Ready mode</b>	Less than 60 Wh
	<b>Power save mode</b>	Less than 8 Wh
	<b>Power off mode</b>	Less than 1 Wh
<b>Wireless<sup>c</sup></b>	<b>Module</b>	ML-NWA65L

a. Sound Pressure Level, ISO 7779. Configuration tested: basic machine installation, A4 paper, simplex printing.

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

c. Optional device

## Print media specifications

Type	Size	Dimensions	print media weight <sup>a</sup> /Capacity <sup>b</sup>	
			tray1 / optional trays	multi-purpose tray
Plain paper	Letter	216 x 279 mm (8.5 x 11 inches)	66 to 90 g/m <sup>2</sup> (17.3 to 24 lb bond) • 500 sheets of 80 g/m <sup>2</sup> (20 lb bond)	66 to 90 g/m <sup>2</sup> (17.3 to 24 lb bond) • 100 sheets of 80 g/m <sup>2</sup> (20 lb bond)
	Legal	216 x 356 mm (8.5 x 14 inches)		
	US Folio	216 x 330 mm (8.5 x 13 inches)		
	A4	210 x 297 mm (8.27 x 11.69 inches)		
	Oficio	216 x 343 mm (8.5 x 13.5 inches)		
	JIS B5	182 x 257 mm (7.17 x 10.12 inches)	66 to 90 g/m <sup>2</sup> (17.3 to 24 lb bond) • 250 sheets of 80 g/m <sup>2</sup> (20 lb bond)	66 to 90 g/m <sup>2</sup> (17.3 to 24 lb bond) • 50 sheets of 80 g/m <sup>2</sup> (20 lb bond)
	ISO B5	176 x 250 mm (6.93 x 9.84 inches)		
	Executive	184 x 267 mm (7.25 x 10.5 inches)		
	A5	148 x 210 mm (5.83 x 8.27 inches)		
	Statement	140 x 216 mm (5.5 x 8.5 inches)	Not available in tray1 / optional trays.	
A6	105 x 148 mm (4.13 x 5.83 inches)			
Envelope	Envelope Monarch	98 x 191 mm (3.87 x 7.5 inches)	Not available in tray1 / optional trays.	75 to 90 g/m <sup>2</sup> (20 to 24 lb bond) • 10 sheets
	Envelope No. 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 (6.38 x 9.02 inches)		
	Envelope C6	114 x 162 mm (4.49 x 6.38 inches)		
	Envelope No. 9	98 x 225 mm (3.87 x 8.87 inches)		
	Envelope 6 3/4	92 x 165 mm (3.62 x 6.5 inches)		
Thin paper	Refer to the Plain paper section	Refer to the Plain paper section	60 to 65 g/m <sup>2</sup> (16 to 17.2 lb bond) • 500 sheets	60 to 65 g/m <sup>2</sup> (16 to 17.2 lb bond) • 100 sheets
Thick paper	Refer to the Plain paper section	Refer to the Plain paper section	91 to 105 g/m <sup>2</sup> (24.1 to 28 lb bond) • 350 sheets	91 to 105 g/m <sup>2</sup> (24.1 to 28 lb bond) • 40 sheets
Thicker paper	Refer to the Plain paper section	Refer to the Plain paper section	106 to 120 g/m <sup>2</sup> (28 to 32lb bond) • 350 sheets	106 to 120 g/m <sup>2</sup> (28 to 32lb bond) • 40 sheets
Extra Thick	Refer to the Plain paper section	Refer to the Plain paper section	121 to 163 g/m <sup>2</sup> (32.1 to 43 lb bond) • 100 sheets	121 to 163 g/m <sup>2</sup> (32.1 to 43 lb bond) • 10 sheets
Transparency	Refer to the Plain paper section	Refer to the Plain paper section	Not available in tray1 / optional trays.	138 to 146 g/m <sup>2</sup> (37 to 39 lb bond) • 10 sheets
Labels <sup>c</sup>	Refer to the Plain paper section	Refer to the Plain paper section		120 to 150 g/m <sup>2</sup> (32 to 40 lb bond) • 10 sheets
Card stock	A6	105 x 148 mm (3 x 5 inches)		171 to 220 g/m <sup>2</sup> (46 to 59 lb bond) • 1 sheets
<b>Minimum size (custom)</b>		76 x 127 mm (3 x 5 inches)	60 to 163 g/m <sup>2</sup> (16 to 43 lb bond)	
<b>Maximum size (custom)</b>		216 x 356 mm (8.5 x 14 inches)		

a. If media weight is over 163 g/m<sup>2</sup> (28 lb bond), load a paper into the multi-purpose tray one by one.

b. Maximum capacity may differ depending on media weight, thickness, and environmental conditions.

c. Smoothness: 100 to 250 (sheffield)

# contact samsung worldwide

If you have any comments or questions regarding Samsung products, contact the Samsung customer care center.

Country/Region	Customer Care Center	Web Site
ALBANIA	42 27 5755	
ARGENTINE	0800-333-3733	www.samsung.com
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AUSTRALIA	1300 362 603	www.samsung.com
AUSTRIA	0810-SAMSUNG (7267864, € 0.07/min)	www.samsung.com
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BAHRAIN	8000-4726	www.samsung.com
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CZECH REPUBLIC	800-SAMSUNG (800-726786) Samsung Zrt., česká organizační složka, Oasis Florenc, Sokolovská394/17, 180 00, Praha 8	www.samsung.com
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DOMINICA	1-800-751-2676	www.samsung.com
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FINLAND	030-6227 515	www.samsung.com
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GERMANY	01805 - SAMSUNG (726-7864 € 0,14/min)	www.samsung.com
GEORGIA	8-800-555-555	

Country/Region	Customer Care Center	Web Site
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 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 Macintosh (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.

## **DMPr**

The Digital Media Printer (DMPr) is a device that allows printing in DLNA home network. The DMPr prints a page by combining images with an Extensible HyperText Markup Language (XHTML) template.

## **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 Macintosh (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 shades 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.

## **HDD**

Hard Disk Drive (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 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 Macintosh 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.