

ML-2855 Series

# Mono Laser Printer User's Guide

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# contents

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<b>COPYRIGHT</b>	
2	
<b>CONTENTS</b>	
3	
<b>INTRODUCTION</b>	
21	
<b>GETTING STARTED</b>	
25	
<b>21</b>	<b>Machine overview</b>
	Front view
	Rear view
<b>23</b>	<b>Control panel overview</b>
<b>24</b>	<b>Understanding the control panel</b>
	Status LED
	Buttons
<b>25</b>	<b>Setting up the hardware</b>
<b>25</b>	<b>Supplied software</b>
<b>25</b>	<b>System requirements</b>
	Windows
	Macintosh
	Linux
<b>26</b>	<b>Installing USB connected machine's driver</b>
	Windows
	Macintosh
	Linux
<b>29</b>	<b>Sharing your machine locally</b>
	Windows
	Macintosh
<b>NETWORK SETUP</b>	
31	
<b>31</b>	<b>Network environment</b>
<b>31</b>	<b>Introducing useful network programs</b>
	SyncThru™ Web Service
	SyncThru™ Web Admin Service
	SetIP
<b>31</b>	<b>Configuring TCP/IP</b>
	Setting the network address
<b>32</b>	<b>Installing network connected machine's driver</b>
	Windows
	Macintosh
	Linux
<b>BASIC SETUP</b>	
35	
<b>35</b>	<b>Altitude adjustment</b>
<b>35</b>	<b>Changing the display language</b>
<b>35</b>	<b>Setting job timeout</b>
<b>35</b>	<b>Using Power saving feature</b>
<b>35</b>	<b>Setting the default tray and paper</b>
	In the control panel
	In the computer
<b>36</b>	<b>Changing font setting</b>

**MEDIA AND TRAY**

37

- 37 Selecting print media**
  - Guidelines to select the print media
  - Media sizes supported in each mode
- 37 Changing the tray size**
- 38 Loading paper in the tray**
  - Tray 1 / optional tray
  - Multi-purpose tray
- 39 Printing on special media**
  - Envelope
  - Transparency
  - Labels
  - Card stock/ Custom-sized paper
  - Letterhead / Preprinted paper
  - Photo
  - Glossy
- 41 Setting the paper size and type**
- 42 Using the output support**
  - Stacking papers firmly

**PRINTING**

43

- 43 Printer driver features**
  - PCL printer driver
  - PostScript printer driver
- 43 Basic printing**
  - Canceling a print job
- 44 Opening Printing Preferences**
  - Using a favorite setting
  - Using help
- 44 Using special print features**
  - Printing multiple pages on one sheet of paper
  - Printing posters
  - Printing booklets
  - Printing on both sides of paper
  - Change percentage of your document
  - Fitting your document to a selected paper size
  - Using watermarks
  - Using overlay
- 47 Changing the default print settings**
- 47 Setting your machine as a default machine**
- 47 Printing to a file (PRN)**
- 48 Macintosh printing**
  - Printing a document
  - Changing printer settings
  - Printing multiple pages on one sheet of paper
  - Printing on both sides of paper
- 49 Linux printing**
  - Printing from applications
  - Printing files
  - Configuring Printer Properties
- 50 Printing with PS driver**
  - Understanding PS driver's Printing Preferences

**MACHINE STATUS AND ADVANCED FEATURES**

53

- 53 Accessing the menu**
- 53 Information**
- 53 Layout**
- 54 Paper**



	<b>54 Graphic</b>
	<b>54 System setup</b>
	<b>55 Emulation</b>
	<b>55 Network</b>
<b>MANAGEMENT TOOLS</b>	
<b>56</b>	<b>56 Introducing useful management tools</b>
	<b>56 Using SyncThru™ Web Service</b> To access SyncThru™ Web Service: SyncThru™ Web Service overview E-mail Notification Setup
	<b>57 Using the Smart Panel program</b> Understanding Smart Panel Changing the Smart Panel Program Settings
	<b>57 Using SetIP program</b> Windows Printing out the machine's MAC address Setting network values Macintosh Linux
	<b>58 Using the Unified Linux Driver Configurator</b> Opening the Unified Driver Configurator Printers Configuration Ports configuration
<b>MAINTENANCE</b>	
<b>61</b>	<b>61 Printing a machine report</b>
	<b>61 Monitoring the supplies life</b>
	<b>61 Using Toner Low Alert</b>
	<b>61 Cleaning a machine</b> Cleaning the outside Printing a cleaning sheet Cleaning the inside
	<b>62 Storing the Toner cartridge</b> Handling instructions Use of non-Samsung and refilled toner cartridge Estimated cartridge life
	<b>63 Tips for moving &amp; storing your machine</b>
<b>TROUBLESHOOTING</b>	
<b>64</b>	<b>64 Redistributing toner</b>
	<b>64 Tips for avoiding paper curls</b>
	<b>65 Tips for avoiding paper jams</b>
	<b>65 Clearing paper jams</b> In tray 1 In optional tray 2 In the multi-purpose tray Inside the machine In exit area In the duplex unit area
	<b>67 Understanding display messages</b>
	<b>70 Solving other problems</b> Paper feeding problems Printing problems Printing quality problems Common PostScript problems Common Windows problems Common Linux problems

# contents

---

Common Macintosh problems

**SUPPLIES AND ACCESSORIES**

77

- 77 How to purchase
- 77 Available supplies
- 77 Available accessories
- 77 Available maintenance Parts
- 78 Replacing the toner cartridge
- 78 Necessary Precautions to take when installing accessories
- 78 Activating the added accessories in printer properties
- 79 Upgrading a memory module
  - Installing a memory module

**SPECIFICATIONS**

80

- 80 General specifications
- 81 Printer specifications
- 82 Print media specifications

**CONTACT SAMSUNG WORLDWIDE**

83

**GLOSSARY**

85










# safety information

These warnings and precautions are included in order to prevent injury to you and others, as well as preventing 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.



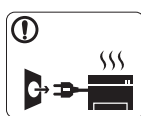
Do not bend, or place heavy objects on the power cord.  
► Stepping on or allowing the power cord to be crushed by a heavy object could result in electric shock or fire.



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.



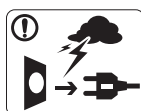
Do not remove the plug by pulling on the cord; do not handle the plug with wet hands.  
► This could result in electric shock or fire.



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.

► 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.



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.



Use care to avoid paper cuts when replacing paper or removing jammed paper.

► You may get hurt.



When printing large quantities, the bottom part of the paper output area may get hot. Do not allow children to touch.

► Children may be burned.



When removing jammed paper, do not use tweezers or sharp metal objects.

► It can cause damage to the machine.



Do not allow too many papers to stack up in the paper output tray.

► It could cause damage to the machine.



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



When moving the machine, turn the power off and disconnect all cords; then lift the machine with at least two people.

► The machine could fall, causing human injury or machine damage.



Do not place the machine on an unstable surface.

► The machine could fall, causing human 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 (79") 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.



Keep cleaning supplies away from children.

► Children may get hurt.



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

► You may get injured.



Do not disassemble, repair or rebuild the machine by yourself.

► It can cause damage to the machine. Call a certified technician when the machine needs repair.

- ⓘ Keep the power cable and the contact surface of the plug clean from dust or water.
  - ▶ This could result in electric shock or fire.
- ⊗ Do not remove any covers or guards that are fastened with screws.
  - ▶ The machine should only be repaired by Samsung service technician.

- ⓘ To clean and operate the machine, strictly follow the user's guide provided with the machine.
  - ▶ Otherwise, it can cause damage to the machine.

## SUPPLY USAGE

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### Caution



- Do not disassemble the toner cartridge.
- ▶ Toner dust can be dangerous to humans.

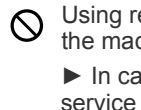


- Do not burn any of the supplies such as toner cartridge or fuser unit.
- ▶ It can cause an explosion or fire.

- ⓘ 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 to humans.



- When storing supplies such as toner cartridges, keep them away from children..
- ▶ Toner dust can be dangerous to humans.



- 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.



# 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 825. 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 LASERSTRALEN BIJ GEOPENDE  
KLEP, DEZE KLEP NIET OPENEN.

ADVARSEL - USYNLIG LASERSTRÅLNING VED ÅBNING.  
UNDGÅ UDSÆTTELSE 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 LASERSÄTELYÄ AVATTAESSA.  
VARO SUORAA ALTISTUMISTA SÄTEELLE.

注意 - 严禁揭开此盖, 以免激光泄露灼伤

주의 - 이 덮개를 열면 레이저광에 노출될 수 있으므로  
주의하십시오.

## OZONE SAFETY



During normal operation, this machine produces ozone. The ozone produced does not present a hazard to the operator. However, it is advisable that the machine be operated in a well ventilated area. If you need additional information about ozone, request your nearest Samsung dealer.

## POWER SAVER



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.

## 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.

## 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 B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy 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 B 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 B prescrites dans la norme sur le matériel brouilleur: "Appareils Numériques", ICES-003 édictée par l'Industrie et Sciences Canada.

AE95



## 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



The CE marking applied to this product symbolizes Samsung Electronics Co., Ltd. Declaration of Conformity with the following applicable 93/68/EEC Directives of the European Union as of the dates indicated:

**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 (92/31/EEC), 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.

### EC Certification

Certification to 1999/5/EC Radio Equipment & Telecommunications Terminal Equipment Directive (FAX)

This Samsung product has been self-certified by Samsung for pan-European single terminal connection to the analogue public switched telephone network (PSTN) in accordance with Directive 1999/5/EC. The product has been designed to work with the national PSTNs and compatible PBXs of the European countries:

In the event of problems, you should contact the Euro QA Lab of Samsung Electronics Co., Ltd. in the first instance.

The product has been tested against TBR21. To assist in the use and application of terminal equipment which complies with this standard, the European Telecommunication Standards Institute (ETSI) has issued an advisory document (EG 201 121) which contains notes and additional requirements to ensure network compatibility of TBR21 terminals. The product has been designed against, and is fully compliant with, all of the relevant advisory notes contained in this document.

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This product includes cryptographic software written by Eric Young([eyay@cryptsoft.com](mailto:eyay@cryptsoft.com)). This product includes software written by Tim Hudson ([tjh@cryptsoft.com](mailto:tjh@cryptsoft.com)).

## ORIGINAL SSLEAY LICENSE

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This package is an SSL implementation written by Eric Young (eay@cryptsoft.com). The implementation was written so as to conform with Netscapes SSL.

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Declaration of Conformity

Manufactured at:

of Samsung Electronics Co., Ltd.  
#259, Gongdan-Dong, Gumi-City, Gyeongsangbuk-Do, 730-030 Korea  
of Samsung Electronics (Shandong) Digital Printing Co., Ltd.  
264209, Samsung Road, Weihai Hi-Tech IDZ, Shandong Province, P. R. China  
of Shin Heung Digital Electronics Co., Ltd.  
98, Samsung Road, Weihai Hi-Tech IDZ, Shandong Province, P. R. China  
(Factory name, address)

We hereby declare, that the product is in compliance with the essential requirements of the Low Voltage Directive (2006/95/EC) and EMC Directive (2004/108/EC) by application of :

- EN 60950-1:2001+A11:2004
- EN 55022:1998 + A1:2000 + A2:2003
- EN 55024:1998 + A1:2001 + A2:2003
- EN 61000-3-2:2006
- EN 61000-3-3:1995 + A1:2001 + A2:2005

The Technical documentation is kept at the below Manufacturer's address.

Manufacturer

Samsung Electronics Co., Ltd.  
#259, Gongdan-Dong, Gumi-City  
Gyungbuk, Korea 730-030

August 22, 2008

A handwritten signature in black ink, appearing to read "Baek Sung Hwan".  
Sung Hwan Baek / S. Manager

Representative in the EU:

Samsung Electronics Euro QA Lab.  
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August 22, 2008  
(Place and date of issue)

A handwritten signature in black ink, appearing to read "Yong Sang Park".  
Yong Sang Park / S. Manager  
(Name and signature of authorized person)



# about this user's guide

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 64.)
- Terms used in this user's guide are explained in the glossary chapter. (See "Glossary" on page 85.)
- 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 XP.

## CONVENTION

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

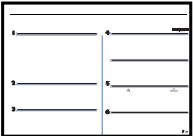
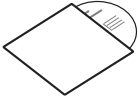
- Document is synonymous with original.
- Paper is synonymous with media, or print media.
- Machine refers to printer or MFP.

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>OK</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 18".)

## 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 Install 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, etc. This Website will be convenient for network administrators who need to manage many machines simultaneously. You can download the SyncThru™ Web Admin Service 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 44.)
<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

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

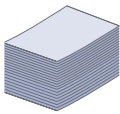
## SPECIAL FEATURES

### Print with excellent quality and speed



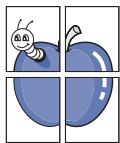
- You can print with a resolution of up to 1,200 x 1,200 dpi effective output.
- Your machine prints A4-sized paper at up to 28 ppm and letter-sized paper at up to 30 ppm.
- For duplex printing, your machine prints A4-sized paper at up to 14 ipm and letter-sized paper at up to 14 ipm.

### 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 50 sheets of plain paper.
- The 250-sheet tray 1 and 250-sheet optional tray support plain paper in various sizes.

### Create professional documents



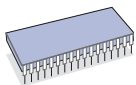
- Print Watermarks. You can customize your documents with words, such as "Confidential". (See "Using watermarks" on page 46.)
- Print Posters. The text and pictures of each page of your document are magnified and printed across the sheet of paper and can then be taped together to form a poster. (See "Printing posters" on page 45.)
- You can use preprinted forms and letterhead with plain paper. (See "Using overlay" on page 46.)

### Save time and money



- To save paper, you can print multiple pages on one single sheet of paper. (See "Printing multiple pages on one sheet of paper" on page 44.)
- 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). (See "Printing on both sides of paper" on page 49.)

### Expand your machine's capacity



- This machine has an extra memory slot for adding more memory. (See "Available supplies" on page 77.)
- Zoran IPS Emulation\* compatible with PostScript 3 (PS) enables PS printing.

### **ZORAN**\* Zoran IPS Emulation compatible with PostScript 3

©Copyright 1995-2005, Zoran Corporation. All rights reserved. Zoran, the Zoran logo, IPS/PS3, and OnelImage are trademarks of Zoran Corporation.

#### **136 PS3 fonts**

Contains UFST and MicroType from Monotype Imaging Inc.

### Print in various environments



- You can print with Windows 2000 and Windows XP/2003/Vista as well as Linux and Macintosh systems.
- Your machine is equipped with a USB interface and a network interface.

## FEATURES BY MODELS

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

FEATURES	ML-2855ND
Hi-Speed USB 2.0	•
Network Interface Ethernet 10/100 Base TX wired LAN	•
Duplex (2-sided) printing	•

( •: Included)

# introduction

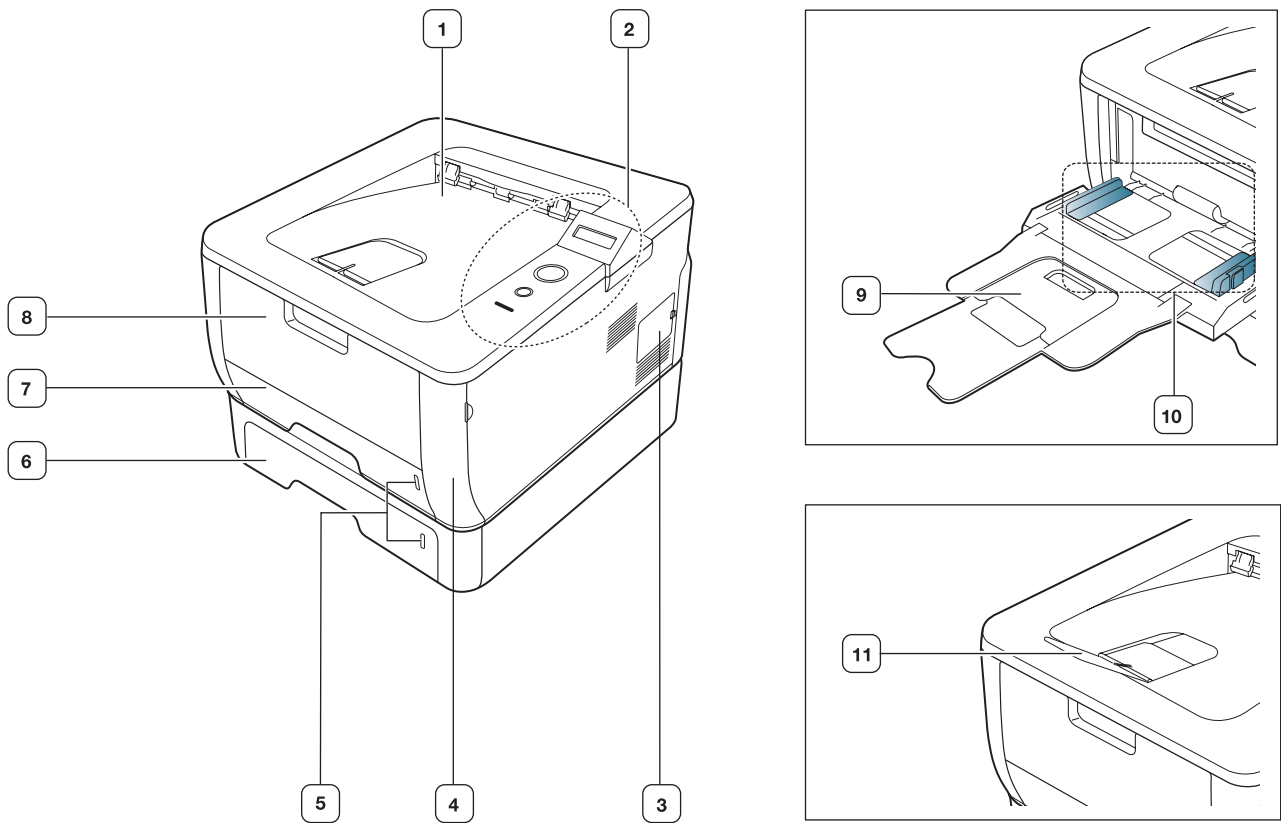
This chapter gives you an overview of your machine.

**This chapter includes:**

- Machine overview
- Control panel overview
- Understanding the control panel

## MACHINE OVERVIEW

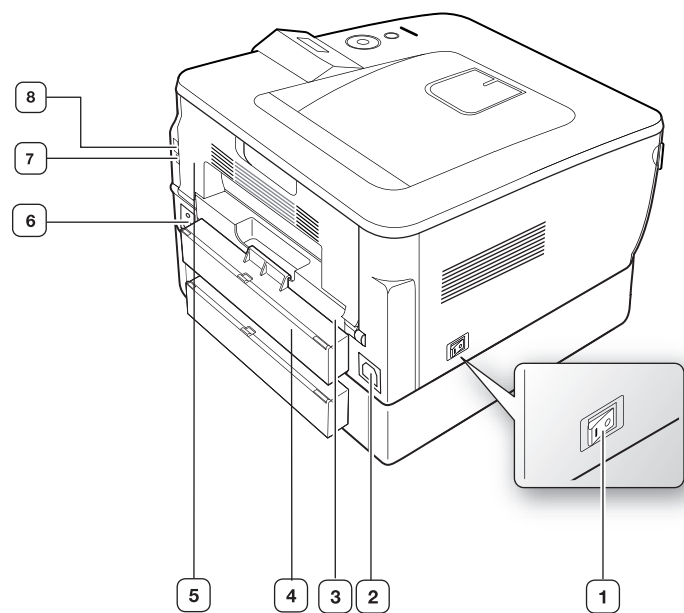
### Front view



1	Output tray	7	Tray 1
2	Control panel	8	Multi-purpose tray
3	Control board cover	9	Multi-purpose tray paper extension
4	Front cover	10	Paper width guides on a multi-purpose tray
5	Paper level indicator	11	Output support
6	Optional tray 2 <sup>a</sup>		

a. This is an optional feature.

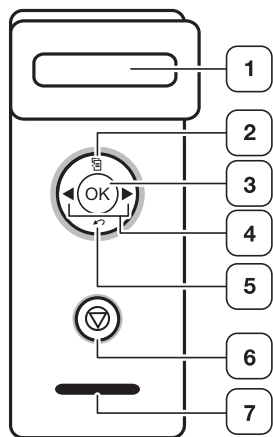
Rear view







1	Power-switch	5	Rear cover
2	Power receptacle	6	Optional tray 2 cable connector
3	Duplex unit	7	USB port
4	Tray rear cover	8	Network Port



# CONTROL PANEL OVERVIEW



1	Display	Shows the current status and prompts during an operation.
2	 (Menu)	Enters menu mode and scrolls through the available menus.
3	OK	Confirms the selection on the screen.
4	Left/right arrow	Scroll through the options available in the selected menu, and increase or decrease values. When entering characters, use right key to add empty space.
5	 (Back)	Sends you back to the upper menu level.
6	 (Power)	Stops an operation at any time and there are more functions. (See "Understanding the control panel" on page 24.)
7	 (Status LED)	Shows the status of your machine. (See "Understanding the control panel" on page 24.)

## UNDERSTANDING THE CONTROL PANEL


### Status LED



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


STATUS		DESCRIPTION
Off		The machine is off-line.
Green	Blinking	<ul style="list-style-type: none"><li>When the backlight slowly blinks, the machine is receiving data from the computer.</li><li>When the backlight blinks rapidly, the machine is printing data.</li></ul>
	On	<ul style="list-style-type: none"><li>The machine is on-line and can be used.</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>
Red	Blinking	<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 64.)</li></ul>
	On	<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 78.)</li><li>A paper jam has occurred. (See "Clearing paper jams" on page 65.)</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 67.)</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 19752. (See "General specifications" on page 80.) 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 **Toner Exhausted** appears and the printer stops printing.

 Check the message on the display screen. Follow the instructions in the message or refer to troubleshooting part. (See "Understanding display messages" on page 67.) If the problem persists, call for service.



### Buttons



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 53.)



By pressing the  (stop button), you can:

FUNCTION	DESCRIPTION
Cancel print job	Press  (stop button) during printing. The red LED blinks while the print job is cleared from both the machine and the computer and then the machine returns to ready mode. This may take some time depending on the size of the print job.
Manual print	Press  (stop button) each time you load a sheet of paper in the Multi-purpose tray when you select <b>Manual Feeder</b> for <b>Source</b> from your software application.

# 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
- System requirements
- Installing USB connected machine’s driver
- Sharing your machine locally

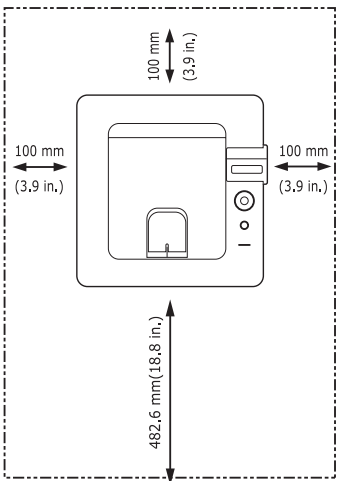
## SETTING UP THE HARDWARE

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.**

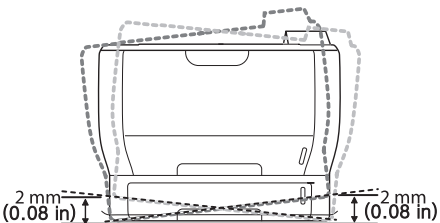
Select a level, stable place with adequate space for air circulation. Allow extra space to open covers and trays.

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 35.)

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 38.)  
**6. Make sure that all cables are connected to the machine.**  
**7. Turn the machine on.**

## SUPPLIED SOFTWARE

After you have set up your machine and connected it to your computer. You must install the printer software using the supplied CD . The software CD provides you with the following software.

OS	CONTENTS
Windows	<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>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>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>
Macintosh	<ul style="list-style-type: none"><li>• <b>PostScript Printer Driver:</b> Use this file 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></ul>
Linux	<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></ul>


## SYSTEM REQUIREMENTS

Before you begin, ensure that your system meets the following requirements:

## Windows

Your machine supports the following Windows operating systems.

OPERATING SYSTEM	REQUIREMENT (RECOMMENDED)		
	CPU	RAM	FREE HDD SPACE
Windows 2000	Pentium II 400 MHz (Pentium III 933 MHz)	64 MB (128 MB)	600 MB
Windows XP	Pentium III 933 MHz (Pentium IV 1 GHz)	128 MB (256 MB)	1.5 GB
Windows Server 2003	Pentium III 933 MHz (Pentium IV 1 GHz)	128 MB (512 MB)	1.25 GB to 2 GB
Windows Vista	Pentium IV 3 GHz	512 MB (1024 MB)	15 GB
Windows Server 2008	Pentium IV 1 GHz (Pentium IV 2 GHz)	512 MB (2048 MB)	10 GB

-  Internet Explorer 5.0 or higher is the minimum requirement for all Windows operating systems.
- Users who have an administrator right can install the software.
- Windows Terminal Services** is compatible with this machine.

## Macintosh


OPERATING SYSTEM	REQUIREMENTS (RECOMMENDED)		
	CPU	RAM	FREE HDD SPACE
Mac OS X 10.4 or lower	<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 a Intel-based Mac (1 GB)</li></ul>	1 GB
Mac OS X 10.5	<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

## Linux

ITEM	REQUIREMENTS
Operating system	RedHat 8.0, 9.0 (32bit) RedHat Enterprise Linux WS 4, 5 (32/64bit) Fedora Core 1~7 (32/64bit) Mandrake 9.2 (32bit), 10.0, 10.1 (32/64bit) Mandriva 2005, 2006, 2007 (32/64bit) SuSE Linux 8.2, 9.0, 9.1 (32bit) SuSE Linux 9.2, 9.3, 10.0, 10.1, 10.2 (32/64bit) SuSE Linux Enterprise Desktop 9, 10 (32/64bit) Ubuntu 6.06, 6.10, 7.04 (32/64bit) Debian 3.1, 4.0 (32/64bit)
CPU	Pentium IV 2.4GHz (IntelCore2)
RAM	512 MB (1024 MB)
Free HDD space	1 GB (2GB)



## INSTALLING USB CONNECTED MACHINE'S DRIVER

A locally connected machine is a machine directly attached to your computer using the USB cable. If your machine is attached to a network, skip the following steps below and go on to installing network connected machine's driver. (See "Installing network connected machine's driver" on page 32.)

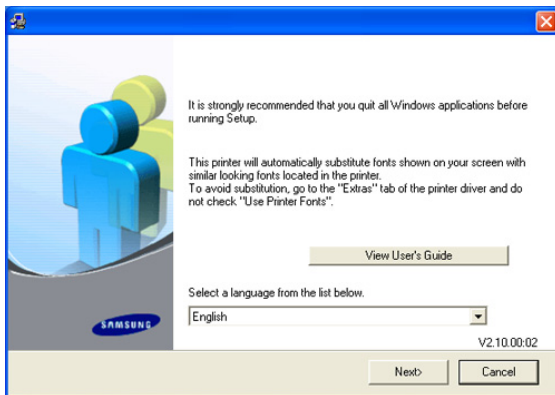
-  Selecting **Custom installation** allows you to choose programs to install.  
Only use an USB cable no longer then 3m (118 inch. ).

## Windows

You can install the machine software using the typical or custom method. The following steps below are recommended for most users who use a machine directly connected to your computer. All components necessary for machine operations will be installed.

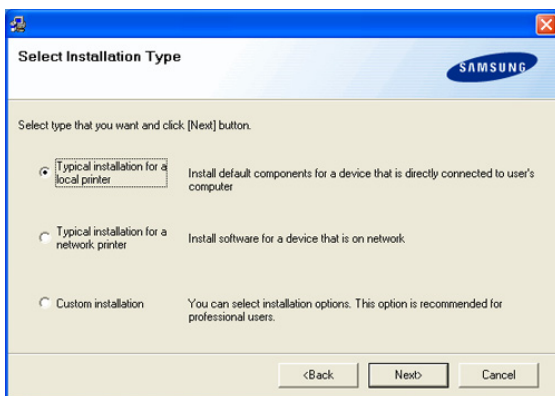
- Make sure that the machine is connected to your computer and powered on.
  -  If the "**New Hardware Wizard**" window appears during the installation procedure, click  in the upper right corner of the box to close the window, or click **Cancel**.
- Insert the supplied software CD into your CD-ROM drive.
  - The software CD should automatically run and an installation window appear.
  - If the installation window does not appear, click **Start** and then **Run**. Type X:\Setup.exe, replacing "X" with the letter which represents your drive. Click **OK**.
  - If you use Windows Vista, click **Start > All programs > Accessories > Run**. Type X:\Setup.exe replacing "X" with the letter which represents your drive and click **OK**.
  - If the **AutoPlay** window appears in Windows Vista, click **Run Setup.exe** in **Install or run program** field, and click **Continue** in the **User Account Control** windows.

- Click **Next**.

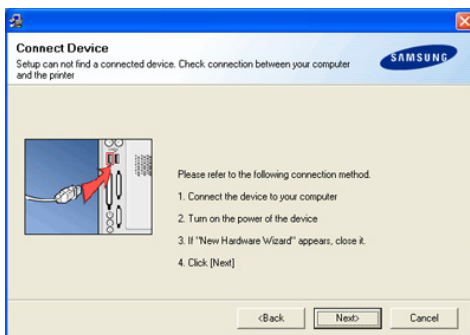


If necessary, select a language from the drop-down list.

- Select **Typical installation for a local printer**, and then click **Next**.



If your machine is not already connected to the computer, the following window will appear.



- After connecting the machine, click **Next**.
  - If you don't want to connect the machine at this time, click **Next**, and **No** on the following screen. The installation will then start and a test page will not be printed at the end of the installation.
  - The installation window that appears in this User's Guide may differ depending on the machine and interface in use.
- After the installation is finished, a window asking you to print a test page appears. If you choose to print a test page, select the checkbox and click **Next**. Otherwise, just click **Next** and skip.
  - If the test page prints out correctly, click **Yes**. If not, click **No** to reprint it.

- To register as a user of the machine in order to receive information from Samsung, select the checkbox and click **Finish**. You are now registered to the Samsung web site.
- Otherwise, just click **Finish**.



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

For windows follow the steps below to uninstall the driver.

- Make sure that the machine is connected to your machine and powered on.
- From the **Start** menu, select **Programs** or **All Programs** > **your printer driver name** > **Maintenance**.
- Select **Remove** and click **Next**.  
You will see a component list so that you can remove any item individually.
- Select the components you want to remove and then click **Next**.
- When your computer asks you to confirm your selection, click **Yes**.  
The selected driver and all of its components are removed from your computer.
- After the software is removed, click **Finish**.

## Macintosh

The software CD that came with your machine provides you with the PPD file that allows you to use the CUPS driver or Apple LaserWriter driver (only available when you use a machine which supports the PostScript driver) for printing on a Macintosh computer.

### Mac OS 8.6~9.2

- Make sure that the machine is connected to your computer and powered on.
- Insert the supplied software CD into your CD-ROM drive.
- Double-click the CD-ROM icon that appears on your Macintosh desktop.
- Double-click the **MAC\_Installer** folder.
- Double-click the **Installer Classic** icon.
- The Samsung Installer window opens. Click **Continue**.
- Select **Easy Install** and click **Install**.
- After the installation is finished, click **Quit**.
- After the installation is finished, click **Restart**.
- Open the Macintosh HD and double-click **Applications**.
- Double-click **Utilities**.
- Double-click **Desktop Printer Utility**.
- Select **LaserWriter 8**, and select **Printer (USB)** in the list box. Then click **OK**.
- Click **Change in the USB Printer Selection** section. The name of your machine appears in the list.
- Click your machine, and click **OK**.
- Click Auto Setup in the PostScript Printer Description (PPD) File section. If Auto Setup does not work properly, click Select PPD and choose your machine.
- Click **Add**.
- When the setup is completed, click **Create**.
- Click **Save**.



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

Follow steps below to uninstall the driver for Macintosh.

- 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 Classic** 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**.

## Mac OS X 10.1 or higher

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 icon.
    - For Mac OS 10.1 ~ 10.2, double-click the Installer OS X 10.1\_10.2 icon.
    - For Mac OS 10.3~10.5, double-click the Installer OS X icon.
  6. Enter the password 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. After the installation is finished, click **Restart**.
  11. Open the **Applications** folder > **Utilities** > **Print Setup Utility**.
    - For Mac OS X 10.5, open the **Applications** folder > **System Preferences** and click **Print & Fax**.
  12. Click **Add** on the **Printer List**.
    - For Mac OS X 10.5, click the "+" icon; a display window will pop up.
  13. 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, click **Default** and find the USB connection.
  14. 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, 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.
  15. 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.


For Mac OS 10.1 ~ 10.2, double-click the Installer OS X 10.1\_10.2 icon.  
For Mac OS 10.3~10.5, 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


Follow the steps below to install the driver for Linux. While installing the driver, the Unified Linux Driver package will automatically be installed as well.

 The supplied software CD provides you with the Unified Linux Driver package for using your machine with a Linux computer easily in UI based management tool. (See "Using the Unified Linux Driver Configurator" on page 58.)

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. Insert the supplied software CD into your CD-ROM drive.

The software CD will run automatically.

If the software CD does not run automatically, click the  icon at the bottom of the desktop. When the Terminal screen appears, type in the following:

If the software CD is secondary master and the location to mount is /mnt/cdrom,

```
[root@localhost root]#mount -t iso9660 /dev/hdc /mnt/cdrom
```


```
[root@localhost root]#cd /mnt/cdrom/Linux
```

```
[root@localhost Linux]#./install.sh
```

If you still failed to run the software CD, type the followings in sequence:

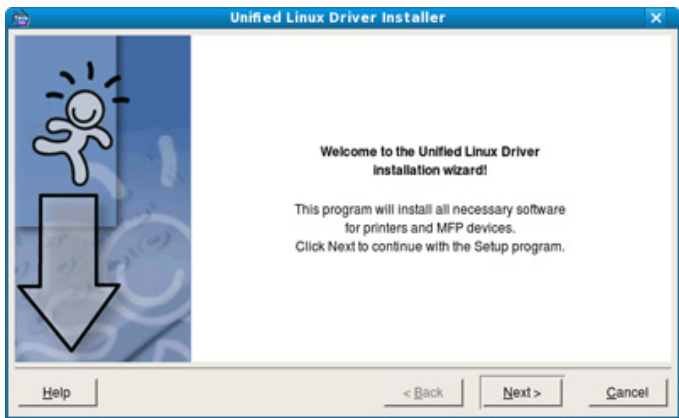
```
[root@localhost root]#umount /dev/hdc
```

```
[root@localhost root]#mount -t iso9660 /dev/hdc /mnt/cdrom
```

 The installation program runs automatically if you have an autorun software package installed and configured.






4. When the welcome screen appears, click **Next**.



5. 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**.

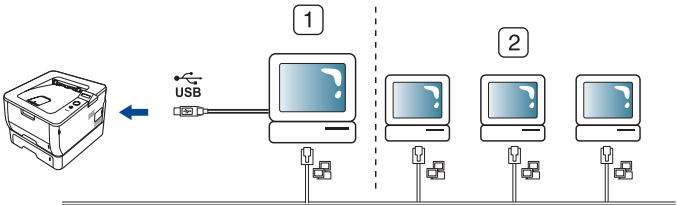
-  Installing the driver in the text mode:
- If you do not use the graphical interface or have been unable to install the driver, you have to use the driver in the text mode.
  - Follow the steps 1 to 3, then type `[root@localhost Linux]# ./install.sh`. Follow the instructions on the terminal screen. The installation is completed.
  - When you want to uninstall the driver, follow the installation instructions above, but type `[root@localhost Linux]# ./uninstall.sh` on the terminal screen.

-  If the printer driver does not work properly, uninstall the driver and reinstall it.
- Follow the steps below steps 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) Insert the supplied software CD into your CD-ROM drive.  
The software CD will run automatically.  
If the software CD does not run automatically, click the  icon at the bottom of the desktop. When the Terminal screen appears, type in:  
If the software CD is secondary master and the location to mount is /mnt/cdrom,  
`[root@localhost root]#mount -t iso9660 /dev/hdc /mnt/cdrom`  
`[root@localhost root]#cd /mnt/cdrom/Linux`  
`[root@localhost Linux]#./uninstall.sh`  
The installation program runs automatically if you have an autorun software package installed and configured.
  - d) Click **Uninstall**.
  - e) Click **Next**.
  - f) Click **Finish**.

## SHARING YOUR MACHINE LOCALLY

Follow the steps below to set up the computers to share your machine locally.

If the Host computer is directly connected to the machine with USB cable and is also connected to the local network environment, the client computer connected to the local network can use the shared machine through the host computer to print.



1	Host computer	A computer which is directly connected to the machine by USB cable.
2	Client computers	Computers which use the machine shared through the server computer.

## Windows


### Setting up a host computer

1. Install your printer driver. (See "Installing USB connected machine's driver" on page 26, "Installing network connected machine's driver" on page 32.)
2. Click the Windows **Start** menu.
3. For Windows 2000, select **Settings > Printers**.
  - For Windows XP/2003 select **Printer and Faxes**.
  - For Windows Vista select **Control Panel > Hardware and Sound > Printers**.
4. Double-click your printer driver icon.
5. From the **Printer** menu, select **Sharing....**
6. Check the **Share this printer**.
7. Fill in the **Shared Name** field. Click **OK**.

### Setting up a client computer


1. Install your printer driver. (See "Installing USB connected machine's driver" on page 26, "Installing network connected machine's driver" on page 32.)
2. Click the Windows **Start** menu.
3. Select **All programs > Accessories > Window Explorer**.
4. Enter the IP address of the host computer in the address bar and press Enter in your keyboard.



-  In case host computer requires **User name** and **Password**, fill in User ID and password of the host computer account.

5. Right click the printer icon you want to share and select **Connect**.
6. If a set up complete message appears, click **OK**.
7. Open the file you want to print and start printing.

## Macintosh

-  The following steps are for Mac OS X 10.5. Refer to Mac Help for other OS versions.

### Setting up a host computer

1. Install your printer driver. (See "Macintosh" on page 27.)
2. Open the **Applications** folder > **System Preferences** and click **Print & Fax**.
3. Select the printer to share in the **Printers list**.
4. Select **Share this printer**.

### Setting up a client computer

1. Install your printer driver. (See "Macintosh" on page 27.)
2. Open the **Applications** folder > **System Preferences** and click **Print & Fax**.
3. Click the "+" icon.  
A display window showing the name of your shared printer appears.
4. Select your machine and click **Add**.

# network setup

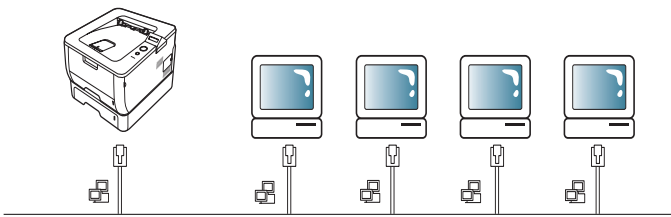
This chapter gives you step-by-step instructions for setting up the network connected machine and software.

**This chapter includes:**

- Network environment
- Introducing useful network programs

## NETWORK ENVIRONMENT


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



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
Network interface	Ethernet 10/100 Base-TX
Network operating system	<ul style="list-style-type: none"><li>• Windows 2000/XP/2003/Vista</li><li>• Various Linux OS</li><li>• Mac OS 8.6~9.2, Mac OS X 10.1 ~ 10.5</li></ul>
Network protocols	<ul style="list-style-type: none"><li>• TCP/IP on Windows</li><li>• IPP</li><li>• DHCP</li><li>• SNMP</li><li>• BOOTP</li></ul>

 If you want to setup DHCP network protocol, go to the <http://developer.apple.com/networking/bonjour/download/>, select the program Bonjour for Windows due to your computer operating system, and install the program. This program will allow you to fix the network parameter automatically. Follow the instruction in the installation window. This program does not support Linux.

## 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.

### SyncThru™ Web Service

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

- Configure the network parameters necessary for the machine to connect

- Configuring TCP/IP
- Installing network connected machine's driver

to various network environments.

- Customize machine settings.  
(See "Using SyncThru™ Web Service" on page 56.)

### 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 "Using SetIP program" on page 57.)

## CONFIGURING TCP/IP


When you connect your machine to a network, you must first configure the TCP/IP settings for the machine. After you have assigned and verified the TCP/IP settings, you are ready to install the software on each computer on the network.

### Setting the network address

 Contact the network administrator if you are not sure how to configure. You can set up TCP/IP network parameters, follow the steps below:

1. Make sure your machine is connected to the network with an RJ-45 Ethernet cable.
2. Make sure you have turned on the machine.
3. Press the  on the control panel until **Network** appears on the bottom line of the display and press **OK**.
4. Press the left/right arrow until **TCP/IP** appears and press **OK**.
5. Press the left/right arrow until **Static** appears and press **OK**.
6. Set the first byte between 0 and 255 using the left/right arrow and press **OK**.

Repeat this to complete the address from the 1st byte to the 4th byte.

 If you press and hold one of the left/right arrows, the digits change in units of ten.

7. When you have finished, press **OK**.  
Repeat step 6 and 7 to configure the other TCP/IP parameters: subnet mask and gateway address.

## INSTALLING NETWORK CONNECTED MACHINE'S DRIVER

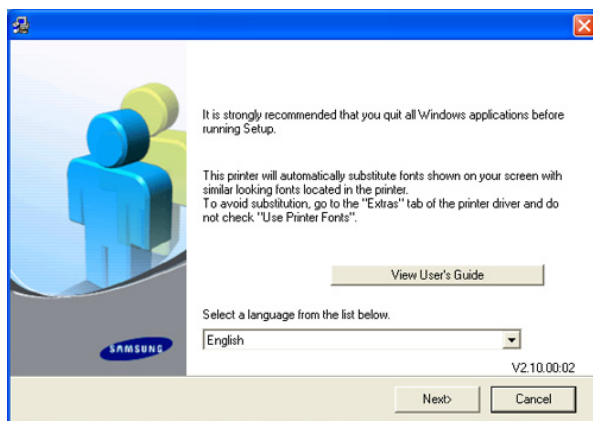
Selecting **Custom installation** allows you to choose programs to install.

### Windows

You can set up the machine driver, follow the steps below.

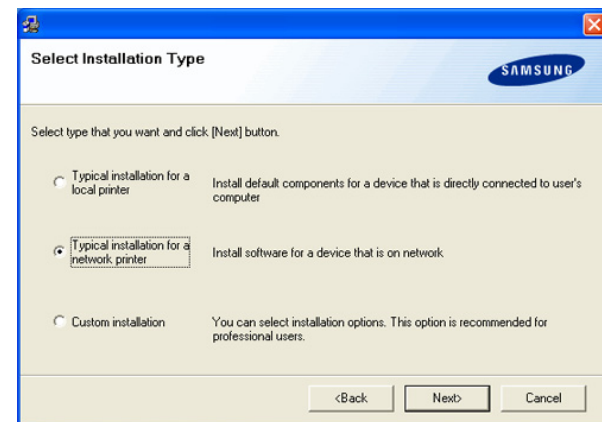
This is recommended for most users. All components necessary for machine operations will be installed.

1. Make sure that the machine is connected to your network and powered on. Also, your machine's IP address should have been set. For details about connecting to the network, see the supplied machine's Quick Install Guide.
2. Insert the supplied software CD into your CD-ROM drive.
  - The software CD should automatically run and an installation window appear.
  - If the installation window does not appear, click **Start** and then **Run**. Type **X:\Setup.exe**, replacing "X" with the letter, which represents your drive. Click **OK**.
  - If you use Windows Vista, click **Start > All programs > Accessories > Run**. Type **X:\Setup.exe** replacing "X" with the letter which represents your drive and click **OK**.
  - If the **AutoPlay** window appears in Windows Vista, click **Run Setup.exe** in **Install or run program** field, and click **Continue** in the **User Account Control** windows.
3. Click **Next**.

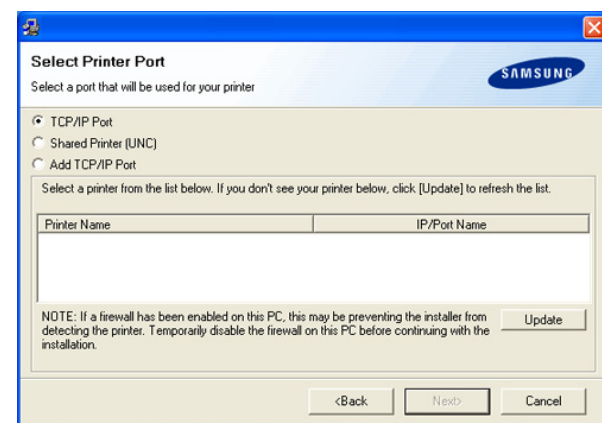


- If necessary, select a language from the drop-down list.

4. Select **Typical installation for a network printer**. Click **Next**.



5. The list of machines available on the network appears. Select the machine you want to install from the list and then click **Next**.



- If you do not see your machine on the list, click **Update** to refresh the list, or select **Add TCP/IP Port** to add your machine to the network. To add the machine to the network, enter the port name and the IP address for the machine. To verify your machine's IP address or the MAC address, print a Network Configuration page.
- To find a shared machine (UNC Path), select **Shared Printer [UNC]** and enter the shared name manually or find a shared printer by clicking the **Browse** button.
- If you cannot find your machine in network, turn off the firewall and click **Update**. For Windows operating system, click **Start > Control Panel > Windows Firewall**, and inactivate this option. For other operating system, refer to its on-line guide.


6. After the installation is finished, a window asking you to print a test page appears. If you choose to print a test page, select the checkbox and click **Next**. Otherwise, just click **Finish**.

- If your printer driver doesn't work properly after setup has been completed, reinstall the printer driver.

### Macintosh

#### Mac OS 8.6~9.2



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 Classic** icon.
6. The Samsung Installer window opens. Click **Continue**.
7. Select **Easy Install** and click **Install**.
8. After the installation is finished, click **Quit**.
9. From the **Apple** menu, select **Chooser**.
10. Click **LaserWriter 8** (the PostScript driver provided with your Macintosh).  
The name of your printer appears in the list
11. Select **SEC000xxxxxxx** from the printer box (where the xxxxxxxx varies depending on each of the products) and Click **Select**.  
If Auto Setup does not work properly, click **Select PPD**, choose your machine and click **OK**.
12. When the setup is completed, you see your machine icon is created as a desktop printer.
13. Close the **Chooser**.
14. When a message window appears telling you that you have changed your current printer, click **OK**.  
 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 Classic** 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**.

### Mac OS X 10.1 or higher

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.
  - For Mac OS 10.1 ~ 10.2, double-click the Installer OS X 10.1\_10.2 icon.
  - For Mac OS 10.3~10.5, double-click the Installer OS X icon.
6. Enter the password 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. The message which warns that all applications will close on your computer appears. Click **Continue**.
10. After the installation is finished, click **Quit**.
11. Open the **Applications** folder > **Utilities** > **Print Setup Utility**.
  - For Mac OS X 10.5, open the **Applications** folder > **System Preferences** and click **Print & Fax**.
12. Click **Add** on the **Printer List**.
  - For Mac OS X 10.5, click the "+" icon; a display window will pop up.
13. For Mac OS X 10.1~10.3, select the **IP Printing** tab.
  - For Mac OS X10.4, click **IP Printer**.
  - For Mac OS X 10.5, click **IP**.
14. 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.
15. Enter the machine's IP address in the **Printer Address** field.
16. 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.
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, 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 icon.  
For Mac OS 10.1 ~ 10.2, double-click the Installer OS X 10.1\_10.2 icon.  
For Mac OS 10.3~10.5, 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

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 CD-ROM icon that appears on your Linux desktop.
4. Double-click the **Linux** folder.
5. Double-click the **install.sh** icon.
6. The Samsung Installer window opens. Click **Continue**.
7. The Add printer wizard window opens. Click **Next**.
8. Select Network printer and click **Search** button.
9. The Printer's IP address and model name appears on list field.
10. Select your machine and click **Next**.



# 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.

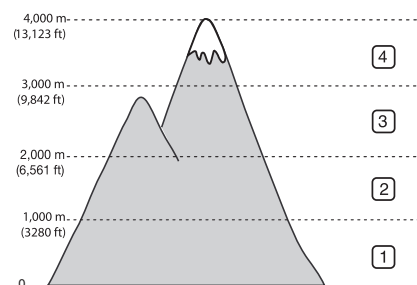
**This chapter includes:**

- Altitude adjustment
- Changing the display language
- Setting job timeout
- Using Power saving feature
- Setting the default tray and paper
- Changing font setting

## 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.



- |   |        |
|---|--------|
| 1 | High 3 |
| 2 | High 2 |
| 3 | High 1 |
| 4 | Normal |

1. Turn your networked computer on and open the web browser.
2. Enter your machine's IP address as the URL in a browser.
3. Click **Go** to access the SyncThru™ Web Service.
4. Click **Machine Settings > Setup**.
5. Click **Altitude Adj.**
6. Select the appropriate altitude value.
7. Click **Apply**.



If your machine is connected via USB cable, set the altitude in **Altitude Adj.** option using the control panel. (See "System setup" on page 54.)

## CHANGING THE DISPLAY LANGUAGE

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

1. Press until **System Setup** appears on the bottom line of the display and press **OK**.
2. Press the left/right arrow until **Language** appears and press **OK**.
3. Press the left/right arrow until the language you want appears and press **OK**.
4. 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 until **System Setup** appears on the bottom line of the display and press **OK**.
2. Press the left/right arrow until **Job Timeout** appears and press **OK**.
3. Press the left/right arrow until the time setting you want appears.
4. Press **OK** to save the selection.
5. 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 until **System Setup** appears on the bottom line of the display and press **OK**.
2. Press the left/right arrow until **Power Save** appears and press **OK**.
3. Press the left/right arrow until the time setting you want appears.
4. Press **OK** to save the selection.
5. Press to return to ready mode.

## SETTING THE DEFAULT TRAY AND PAPER

You can select the tray and paper you would like to keep using for printing job.

### In the control panel

1. Press until **Paper** appears on the bottom line of the display and press **OK**.
2. Press the left/right arrow to until **Paper Source** appears and press **OK**.
3. Press the left/right arrow until the tray you want appears.
4. Press **OK** to save the selection.
5. Press the left/right arrow to until **Paper Type** and press **OK**.
6. Press the left/right arrow until the paper type you want appears.
7. Press **OK** to save the selection.
8. 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 **Printer and Faxes**.
  - For Windows Vista select **Control Panel > Hardware and Sound > Printers**.
3. Right-click your machine and press **Printing Preferences**.
4. Click **Paper** tab.
5. Select tray and its options, such as paper size and type.
6. 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 as follows:

1. Press  until **Emulation** appears on the bottom line of the display and press **OK**.
2. Press the left/right arrow until the font type you want appears.
3. Press **OK** to save the selection.
4. Press  to return to machine ready mode.



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 82.)
- 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 specified in this user's guide.

-  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.  
The amount of paper put into the tray may differ according to media type used. (See "Print media specifications" on page 82.)

### Media sizes supported in each mode

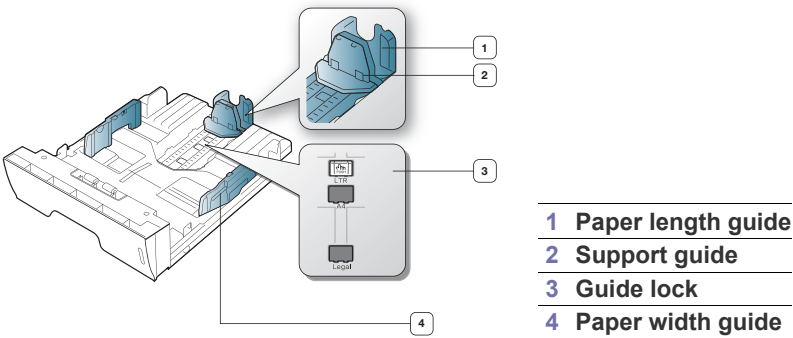
MODE	SIZE	TYPE	SOURCE
Duplex printing <sup>a</sup>	Letter, A4, Legal, US Folio, Oficio	Plain, Color, Preprinted, Recycled, Bond, Archive	<ul style="list-style-type: none"><li>• tray 1</li><li>• optional trays</li><li>• multi-purpose tray</li></ul>

a. 75 to 90 g/m<sup>2</sup> (20~24 lb bond) only

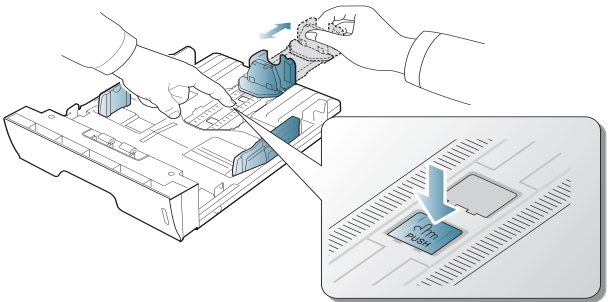
- Printing on special media
- Setting the paper size and type
- Using the output support

## 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.



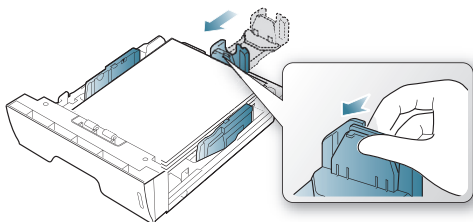
1. With one hand press and hold the guide lock, and with the other hand, hold the paper length guide and support guide together. Slide the paper length guide and support guide to locate them in the correct paper size slot.



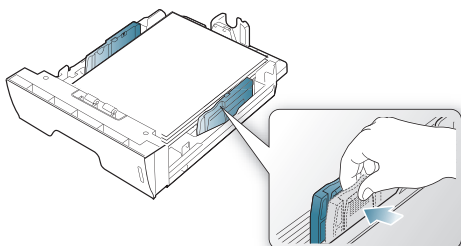
2. Flex or fan the edge of the paper stack to separate the pages before loading originals. Insert the paper into the tray.



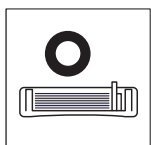
- After inserting paper into the tray, adjust the support guide so that it lightly touches the paper stack.



- Squeeze the paper width guides and slide them to the desired paper size marked at the bottom of the tray.



- 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.



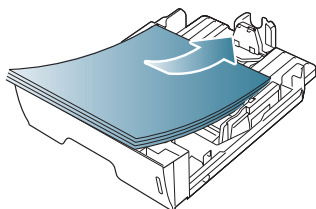
## LOADING PAPER IN THE TRAY

### Tray 1 / optional tray

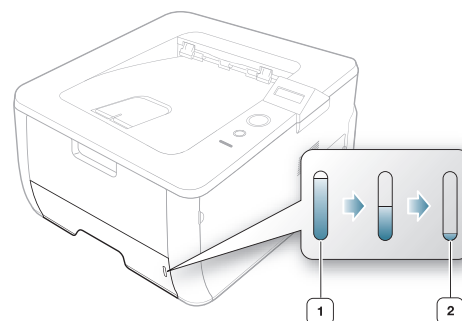
- Pull out the paper tray. And adjust the tray size to the media size you are loading. (See "Changing the tray size" on page 37.)
- Flex or fan the edge of the paper stack to separate the pages before loading originals.



- And place paper with the side you want to print facing down.



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



- Full
- Empty


- Set the paper type and size for the tray 1. (See "Setting the paper size and type" on page 41.)

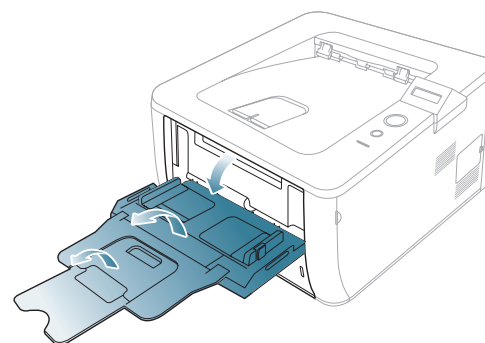
- If you experience problems with paper feeding, check whether the paper meets the media specification. Then try placing one sheet at a time in the multi-purpose tray. (See "Print media specifications" on page 82.)
- The settings made from the machine driver override the settings on the control panel.

### Multi-purpose tray

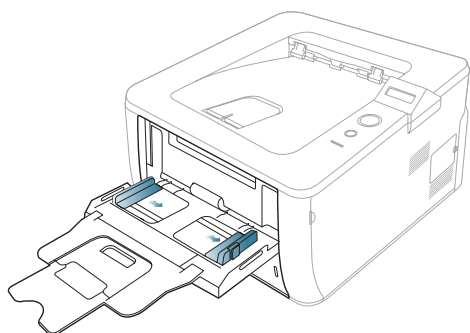
The multi-purpose tray can hold special sizes and types of print material, such as postcards, note cards, and envelopes. It is useful for single page printing on letterhead or colored paper.

#### Tips on using the multi-purpose tray

- If you select **Manual Feeder** for **Source** from your software application, you need to press  each time you print a page and 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.
  - Print media should be loaded face up with the top edge going into the multi-purpose tray first and be placed in the center of the tray.
  - Always load the specified print media only to avoid paper jams and print quality problems. (See "Print media specifications" on page 82.)
  - 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. Pull out the multi-purpose tray paper extension



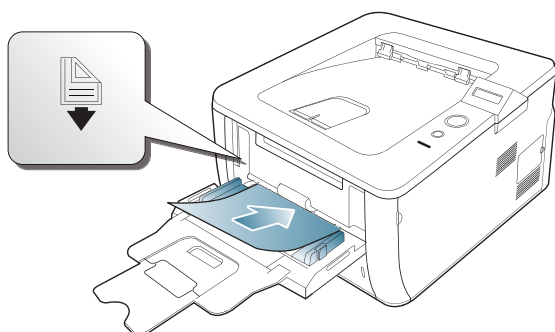
- Squeeze the multi-purpose tray paper width guides and adjust them to the width of the paper. Do not force them too much, or the paper will bent resulting in a paper jam or skew.




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



- Load the paper.



- Do not force the paper beyond the surface with  mark when loading.
- When printing the special media, you must follow the loading guideline. (See "Printing on special media" on page 39.)
- 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.

- After loading paper, set the paper type and size for the multi-purpose tray from the control panel. (See "Setting the paper size and type" on page 41.)



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 44.)
- 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**.

- Select **Manual Feeder** in paper source, then press **OK**.

- Start printing in application.

- 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 82.)

TYPES	TRAY 1	OPTIONAL TRAY	MULTI-PURPOSE TRAY
Plain	O	O	O
Thick	O	O	O
Thin	O	O	O
Bond	X	X	O
Color	X	X	O
CardStock	X	X	O
Labels	X	X	O
Transparency	X	X	O
Envelope	X	X	O
Preprinted	X	X	O
Cotton	X	X	O
Recycled	O	O	O
Archive	O	O	O

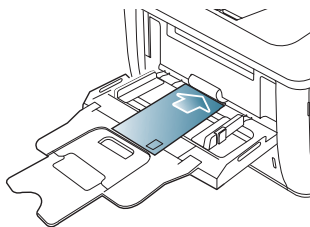
The media types are shown in the **Printing Preferences**. This paper type option allows you to set the type of paper to be loaded in the tray. This setting appears in the list, so that you can select it. This will let you get the best quality printout. If not, the desired print quality may not be achieved.

- Plain:** Normal plain paper. Select this type if your machine is monochrome and printing on the 60 g/m<sup>2</sup> (16 lb) cotton paper.
- Thick:** 90 to 105 g/m<sup>2</sup> (24 to 28 lb) thick paper.
- Thin:** 60 to 70 g/m<sup>2</sup> (16 to 19 lb) thin paper.
- Bond:** 105 to 120 g/m<sup>2</sup> (28 to 32 lb) bond.
- Color:** 75 to 90 g/m<sup>2</sup> (20 to 24 lb) color-background paper.
- CardStock:** 90 to 163 g/m<sup>2</sup> (24 to 43 lb) cardstock.
- Labels:** 120 to 150 g/m<sup>2</sup> (32 to 40 lb) labels.
- Transparency:** 138 to 146 g/m<sup>2</sup> (37 to 39 lb) transparency paper.
- Envelope:** 75 to 90 g/m<sup>2</sup> (20 to 24 lb) envelope.
- Preprinted:** 75 to 90 g/m<sup>2</sup> (20 to 24 lb) preprinted/letterhead paper.
- Cotton:** 75 to 90 g/m<sup>2</sup> (20 to 24 lb) preprinted paper.
- Recycled:** 75 to 90 g/m<sup>2</sup> (20 to 24 lb) recycled paper.
- Archive:** 70 to 90 g/m<sup>2</sup> (19 to 24 lb) If you need to keep the print-out for a long period time, such as archives, select this option.

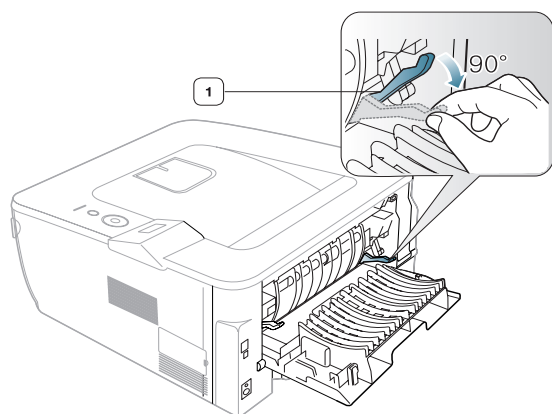
## Envelope

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

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

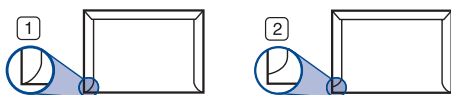


If envelopes are printed out with wrinkles, crease or black bold lines, open the rear cover and pull down the pressure lever on the right side about 90 degrees and try printing again. Keep the rear cover opened during printing.



**1 Pressure lever**

- When 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**

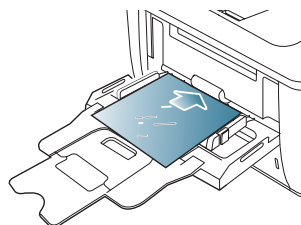
- Envelopes with a peel-off adhesive strip or with more than one flap that folds over to seal must use adhesives compatible with the machine's fusing temperature for 0.1 second. To view the fusing temperature,

check your machine's specification. (See "General specifications" on page 80.) 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

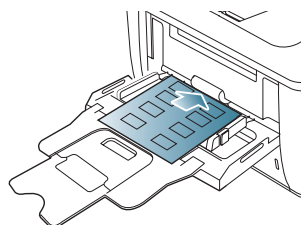
To avoid damaging the machine, use only transparencies designed for use in laser printers.



- 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 a color laser printer by Xerox, such as 3R 91331(A4), 3R 2780(Letter)

## Labels

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

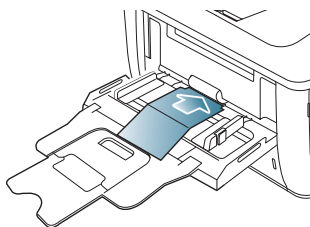


- When selecting labels, consider the following factors:
  - Adhesives:** The adhesive material should be stable at your machine's fusing temperature. Check your machine's specification to view the fusing temperature. (See "General specifications" on page 80.)
  - Arrangement:** Only use labels with 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.

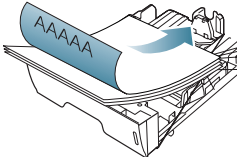
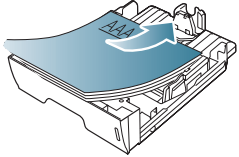
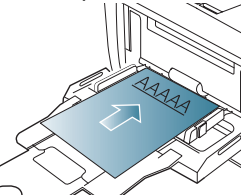
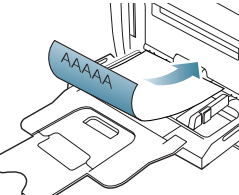
## Card stock/ Custom-sized paper



- Do not print on media smaller than 76 mm (2.99 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.

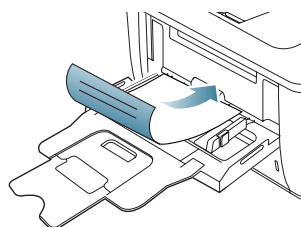
## Letterhead / Preprinted paper

### Letterhead

	SINGLE-SIDED	DOUBLE-SIDED
Tray1/Optional tray	Face down 	Face up 
Multi-purpose tray	Face up 	Face down 

## Preprinted paper

When loading preprinted paper, printed side should be facing down 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.



- 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 80.)
- 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.

## 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 up.


- 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 buttons.


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

1. Press  until **Paper** appears on the bottom line of the display and press **OK**.
2. Press left/right arrow until **Paper Size** appears and press **OK**.
3. Press left/right arrow until the paper size you are using appears and Press **OK**.
4. Press left/right arrow until **Paper Type** appears and press **OK**.
5. Press left/right arrow until the paper type you are using appears and Press **OK**.
6. Press  to return to ready mode.

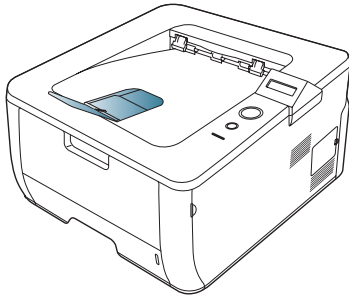
-  If you want to use special-sized paper-such as a billing paper, select **Custom** in the **Paper** tab in the **Printing Preferences**. (See "Opening



## 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. Pull out the output support and extend it.



### Stacking papers firmly


If you use a machine in a humid area, or you are using the damp print media caused by a high humidity, the print-outs on the output tray may be curled and may not be stacked properly. In this case, you can set the machine to use the Paper Stacking function to let print-outs stacked firmly. But, using this function will make the print speed slow.

1. Press  until **System Setup** appears on the bottom line of the display and press **OK**.
2. Press the left/right arrow until **Maintenance** appears and press **OK**.
3. Press the left/right arrow until **Paper Stacking** appears and press **OK**.
4. Press the left/right arrow to select **On** or **Off** and press **OK**.
5. Press  to return to ready mode.

This chapter explains common printing tasks.

**This chapter includes:**

- Printer driver features
- Basic printing
- Opening Printing Preferences
- Using help
- Using special print features
- Changing the default print settings


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

**PRINTER DRIVER FEATURES**

Your printer drivers support the following standard features:

- Paper orientation, size, source, and media type selection
- Number of copies

In addition, you can use various special printing features. The following table shows a general overview of features supported by your printer drivers:

 Some models or operating system may not support the certain feature(s) in the following table.

**PCL printer driver**

FEATURE	WINDOWS
Machine quality option	O
Poster printing	O
Multiple pages per sheet	O
Booklet printing	O
Fit to page printing	O
Reduce and enlarge printing	O
Different source for first page	O
Watermark	O
Overlay	O
Double-sided printing (duplex)	O

**PostScript printer driver**

FEATURE	WINDOWS	LINUX	MACINTOSH
Machine quality option	O	O	O
Poster printing	X	X	X
Multiple pages per sheet	O	O (2, 4)	O
Fit to page printing	X	O	O






- Setting your machine as a default machine
- Printing to a file (PRN)
- Macintosh printing
- Linux printing
- Printing with PS driver

FEATURE	WINDOWS	LINUX	MACINTOSH
Reduce and enlarge printing	O	X	O
Different source for first page	X	X	O
Watermark	X	X	X
Overlay	X	X	X
Double-sided printing (duplex) <sup>a</sup>	O	O	O


a. The machine with Duplex feature prints both side of a paper.

**BASIC PRINTING**

Your machine allows you to print from various Windows, Macintosh, or Linux applications. The exact steps for printing a document may vary depending on the application you use.

-  • Your **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. Check the operating system(s) that are compatible with your machine. Refer to the OS compatibility section of Printer specifications . (See "Printer specifications" on page 81.)
- 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.

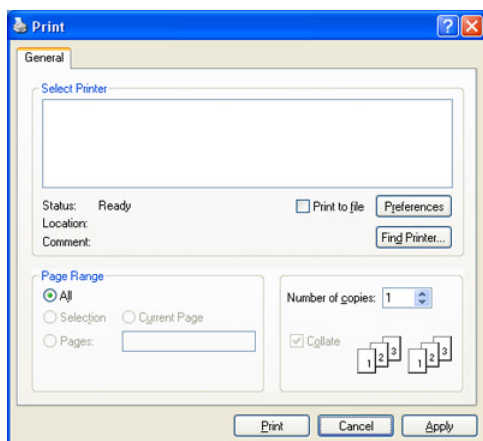
The following procedure describes the general steps required for printing from various Windows applications.

-  Macintosh basic printing. (See "Macintosh printing" on page 48.)
- Linux basic printing. (See "Linux printing" on page 49.)

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

1. Open the document you want to print.
2. Select **Print** from the **File** menu. The **Print** window appears.

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



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



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 setting. (See "Opening Printing Preferences" on page 44. )

4. To start the print job, click **Print** in the **Print** window.


## Canceling a print job

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

1. Click the Windows **Start** menu.
  - For Windows 2000, select **Settings > Printers**.
  - For Windows XP/2003, select **Printers and Faxes**.
  - For Windows Vista, select **Control Panel > Hardware and Sound > Printers**.
2. Double-click your machine.
3. From the **Document** menu, select **Cancel**.



You can also 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.

## OPENING PRINTING PREFERENCES

You can preview the settings you selected on the upper right of the **Printing Preferences**.

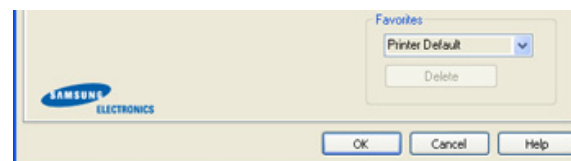
1. Open the document you want to print.
2. Select **Print** from the **File** menu. The **Print** window appears.
3. Select your machine from the **Select Printer**.
4. Click **Properties** or **Preferences**.

## Using a favorite setting

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

To save a **Favorites** item:

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



3. Click **Save**. When you save **Favorites**, all current driver settings are saved.

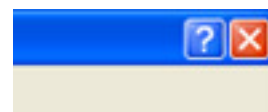
To use a saved setting, select it from the **Favorites** drop down list. The machine is now set to print according to the setting you selected.

To delete saved setting, select it from the **Favorites** drop down list and click **Delete**.

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

## Using help

Click the question mark from the upper-right corner of the window and click on any option you want to know about. Then a pop up window appears with information about that option's feature which is provided from the driver.



## USING SPECIAL PRINT FEATURES

Special print features include:

- "Printing multiple pages on one sheet of paper" on page 44.
- "Printing posters" on page 45.
- "Printing booklets" on page 45.
- "Printing on both sides of paper" on page 45.
- "Change percentage of your document" on page 45.
- "Fitting your document to a selected paper size" on page 46.
- "Using watermarks" on page 46.
- "Using overlay" on page 46.

## Printing multiple pages on one sheet of paper

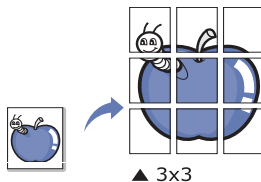
You can select the number of pages to print on a single sheet of paper. To print more than one page per sheet, the pages will be reduced in size and arranged in the order you specify. You can print up to 16 pages on one sheet.

1. To change the print settings from your software application, access **Printing Preferences**. (See "Opening Printing Preferences" on page 51.)
2. Click the **Layout** tab, select **Multiple Pages per Side** in the **Layout Type** drop-down list.
3. Select the number of pages you want to print per sheet (2, 4, 6, 9, or 16) in the **Pages per Side** drop-down list.
4. Select the page order from the **Page Order** drop-down list, if necessary.
5. Check **Print Page Border** to print a border around each page on the sheet.
6. Click the **Paper** tab, select the **Paper Options**.
7. Click **OK** or **Print** until you exit the **Print** window.

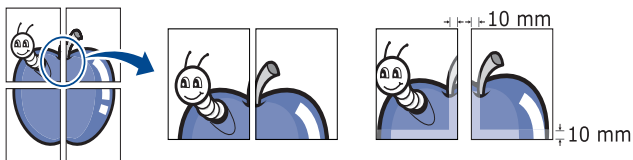


## Printing posters

This feature allows you to print a single-page document onto 4, 9, or 16 sheets of paper, for the purpose of pasting the sheets together to form one poster-size document.




1. To change the print settings from your software application, access **Printing Preferences**. (See "Opening Printing Preferences" on page 51.)
2. Click the **Layout** tab, select **Poster Printing** in the **Layout Type** drop-down list.
3. Select the page layout you want.  
Specification of the page layout:
  - **Poster <2x2>**: Document will be enlarged and be divided into 4 pages.
  - **Poster <3x3>**: Document will be enlarged and be divided into 9 pages.
  - **Poster <4x4>**: Document will be enlarged and be divided into 16 pages.
4. Select the **Overlap** value. Specify **Overlap** in millimeters or inches by selecting the radio button under the preview image to make it easier to paste the sheets together.



5. Click the **Paper** tab, select the **Paper Options**.
6. Click **OK** or **Print** until you exit the **Print** window.
7. You can complete the poster by pasting the sheets together.


## Printing booklets

This feature prints your document on both sides of a paper and arranges the pages so that the paper can be folded in half after printing to produce a booklet.



-  If you want to make a booklet, you need to print on Letter, Legal, A4, Us Folio, or Oficio sized print media.



1. To change the print settings from your software application, access the **Printing Preferences**. (See "Opening Printing Preferences" on page 51.)
2. Click the **Layout** tab, select **Booklet Printing** from the **Layout Type** drop-down list.
3. Click the **Paper** tab, select the **Paper Options**.

-  The **Booklet Printing** option is not available for all paper sizes. In order to find out the available paper size for this feature, select the


available paper size in the **Size** option on the **Paper** tab.

If you select an unavailable paper size, this option can be automatically canceled. Select only available paper. (paper without  or  mark).

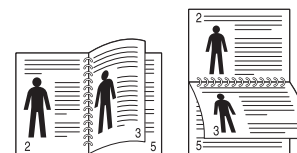
4. Click **OK** or **Print** until you exit the **Print** window.
5. After printing, fold and staple the pages.

## Printing on both sides of paper

You can print on both sides of a paper; duplex. Before printing, decide how you want your document oriented. You can only use this feature with Letter, Legal, A4, US Folio, or Oficio sized paper.

-  Do not print on both sides of the special media, such as labels, envelopes, or thick paper to print on both sides of paper. It may cause a paper jam or damage the machine.


1. To change the print settings from your software application, access **Printing Preferences**. (See "Opening Printing Preferences" on page 51.)
2. Click the **Layout** tab.
3. From the **Double-sided Printing** section, select the binding option you want.
  - **Printer Default**: If you select this option, this feature is determined by the setting you've made on the control panel of the machine.
  - **None**
  - **Long Edge**: This option is the conventional layout used in bookbinding.



- **Short Edge**: This option is the conventional layout used in calendars.

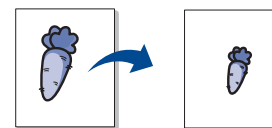


- **Reverse Double-Sided Printing**: Check this option to reverse the print order when duplex printing.
4. Click the **Paper** tab, select the **Paper Options**.
  5. Click **OK** or **Print** until you exit the **Print** window.

-  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. Follow the on-screen instructions to complete the printing job.

## Change percentage of your document

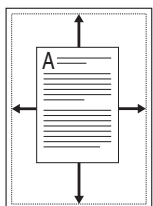
You can change the size of a document to appear larger or smaller on the printed page by typing in a percentage you want.



1. To change the print settings from your software application, access **Printing Preferences**. (See "Opening Printing Preferences" on page 51.)
2. Click the **Paper** tab.
3. Select **Reduce/Enlarge** in the **Printing Type** drop-down list.
4. Enter the scaling rate in the **Percentage** input box.  
You can also click the up/down arrows to select the scaling rate.
5. Select the **Paper Options**.
6. Click **OK** or **Print** until you exit the **Print** window.

## Fitting your document to a selected paper size

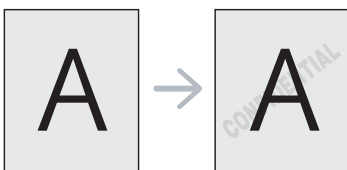
This printer feature allows you to scale your print job to any selected paper size regardless of the document size. This can be useful when you want to check fine details on a small document.



1. To change the print settings from your software application, access **Printing Preferences**. (See "Opening Printing Preferences" on page 51.)
2. Click the **Paper** tab.
3. Select **Fit to Page** in the **Printing Type** drop-down list.
4. Select the correct size from the **Output size** drop-down list.
5. Select the **Paper Options**.
6. Click **OK** or **Print** until you exit the **Print** window.

## Using watermarks

The watermark option allows you to print text over an existing document. For example, you use it when you want to have large gray letters reading "DRAFT" or "CONFIDENTIAL" printed diagonally across the first page or all pages of a document.



There are several predefined watermarks that come with the machine. They can be modified, or you can add new ones to the list.

### Using an existing watermark

1. To change the print settings from your software application, access **Printing Preferences**. (See "Opening Printing Preferences" on page 51.)
2. Click the **Extras** tab, and select the desired watermark from the **Watermark** drop-down list. You will see the selected watermark in the preview image.
3. Click **OK** or **Print** until you exit the **Print** window.

## Creating a watermark

1. To change the print settings from your software application, access **Printing Preferences**. (See "Opening Printing Preferences" on page 51.)
2. Click the **Extras** tab, and click the **Edit** button in the **Watermark** section. The **Edit Watermark** window appears.
3. Enter a text message in the **Watermark Message** box. You can enter up to 40 characters. The message displays in the preview image.  
When the **First Page Only** box is checked, the watermark prints on the first page only.
4. Select watermark options.  
You can select the font name, style, size, and shade from the **Font Attributes** section, as well as set the angle of the watermark from the **Message Angle** section.
5. Click **Add** to add a new watermark to the **Current Watermarks** list.
6. When you have finished editing, click **OK** or **Print** until you exit the **Print** window.

To stop printing the watermark, select **(No Watermark)** from the **Watermark** drop-down list.

## Editing a watermark

1. To change the print settings from your software application, access **Printing Preferences**. (See "Opening Printing Preferences" on page 51.)
2. Click the **Extras** tab, and click the **Edit** button in the **Watermark** section. The **Edit Watermark** window appears.
3. Select the watermark you want to edit from the **Current Watermarks** list and change the watermark message and options.
4. Click **Update** to save the changes.
5. Click **OK** or **Print** until you exit the **Print** window.

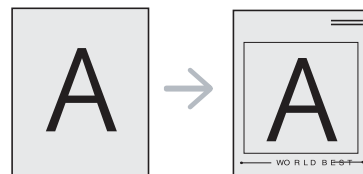
## Deleting a watermark

1. To change the print settings from your software application, access **Printing Preferences**. (See "Opening Printing Preferences" on page 51.)
2. Click the **Extras** tab, and click the **Edit** button in the **Watermark** section. The **Edit Watermark** window appears.
3. Select the watermark you want to delete from the **Current Watermarks** list and click **Delete**.
4. Click **OK** or **Print** until you exit the **Print** window.

## Using overlay

### What is an overlay?


An overlay is text and/or images stored in the computer hard disk drive (HDD) as a special file format that can be printed on any document. Overlays are often used to take the place of letterhead paper. Rather than using preprinted letterhead, you can create an overlay containing exactly the same information that is currently on your letterhead. To print a letter with your company's letterhead, you do not need to load preprinted letterhead paper in the machine just print the letterhead overlay on your document.



## Creating a new page overlay

To use a page overlay, you must create a new page overlay containing your logo or image.

1. Create or open a document containing text or an image for use in a new page overlay. Position the items exactly as you wish them to appear when printed as an overlay.
2. To save the document as an overlay, access **Printing Preferences**. (See "Opening Printing Preferences" on page 51.)
3. Click the **Extras** tab, and click the **Edit** button in the **Overlay** section. The **Edit Overlay** window appears.
4. Click **Create**.
5. In the **Create Overlay** window, type a name of up to eight characters in the **File name** box. Select the destination path, if necessary. (The default is C:\Formover.)
6. Click **Save**. The name appears on the **Overlay List**.
7. Click **OK** or **Print** until you exit the **Print** window.
8. The file is not printed. Instead, it is stored on your computer hard disk drive.

 The overlay document size must be the same as the document you print with the overlay. Do not create an overlay with a watermark.

## Using a page overlay


After an overlay has been created, it is ready to be printed with your document. To print an overlay with a document:

1. Create or open the document you want to print.
2. To change the print settings from your software application, access **Printing Preferences**. (See "Opening Printing Preferences" on page 51.)
3. Click the **Extras** tab.
4. Select the desired overlay from the **Overlay** drop-down list.
5. If the overlay file you want does not appear in the **Overlay** drop-down list, select **Edit** from the list and click **Load Overlay**. Select the overlay file you want to use.

If you have stored the overlay file you want to use in an external source, you can also load the file when you access the **Load Overlay** window.

After you select the file, click **Open**. The file appears in the **Overlay List** box and is available for printing. Select the overlay from the **Overlay List** box.

6. If necessary, check **Confirm Page Overlay When Printing** box. If this box is checked, a message window appears each time you submit a document for printing, asking you to confirm your wish to print an overlay on your document.  
If this box is not checked and an overlay has been selected, the overlay automatically prints with your document.
7. Click **OK** or **Print** until you exit the **Print** window.  
The selected overlay prints on your document.

 The resolution of the overlay document must be the same as that of the document you will print with the overlay.

## Deleting a page overlay


You can delete page overlays that you no longer use.

1. In the **Printing Preferences** window, click the **Extras** tab.
2. Click the **Edit** button in the **Overlay** section. The **Edit Overlay** window appears.
3. Select the overlay you want to delete from the **Overlay List** box.

4. Click **Delete Overlay**.
5. When a confirming message window appears, click **Yes**.
6. Click **OK** or **Print** until you exit the **Print** window.

## CHANGING THE DEFAULT PRINT SETTINGS

1. Click the Windows **Start** menu.
  - For Windows 2000, select **Settings** and then **Printers**.
  - For Windows XP/2003, select **Printers and Faxes**.
  - For Windows Vista, select **Control Panel > Hardware and Sound > Printers**.
2. Select your machine.
3. Right-click on the printer driver icon and select **Printing Preferences**.
4. Change the settings on each tab.
5. Click **OK**.

 Most Windows applications will override settings you specify in the printer driver. Change all print settings available in the software application first, and change any remaining settings using the printer driver.

## SETTING YOUR MACHINE AS A DEFAULT MACHINE

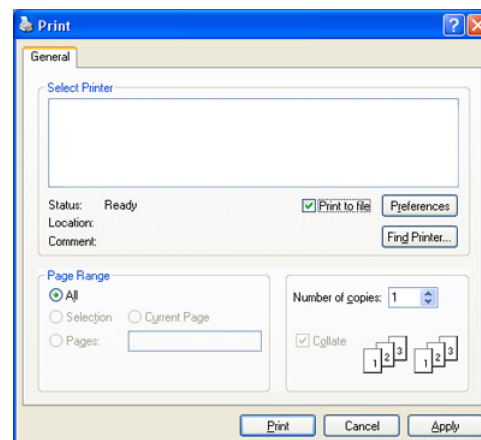
1. Click the Windows **Start** menu.
  - For Windows 2000, select **Settings > Printers**.
  - For Windows XP/2003, select **Printers and Faxes**.
  - For Windows Vista, select **Control Panel > Hardware and Sound > Printers**.
2. Select your machine.
3. Right-click your machine and select **Set as Default Printer**.

## PRINTING TO A FILE (PRN)

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

To create a file:

1. Check the **Print to file** box at 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**.

## MACINTOSH PRINTING

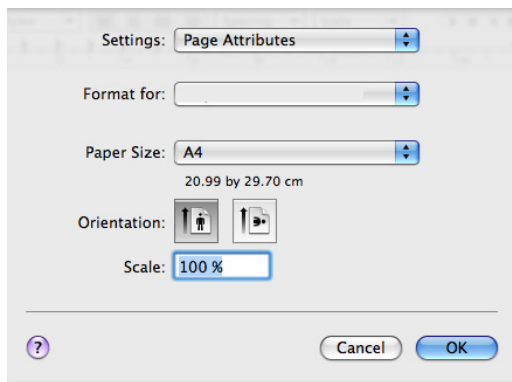
This chapter explains how to print using Macintosh. You need to set the print environment before printing.

- USB connected (See "Macintosh" on page 27.)
- Network connected (See "Macintosh" on page 32.)

### Printing a document

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

1. Open an application and select the file you want 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 you want and indicate which pages you want to print.
6. Click **Print**.

### Changing printer settings

You can use advanced printing features when using your machine.

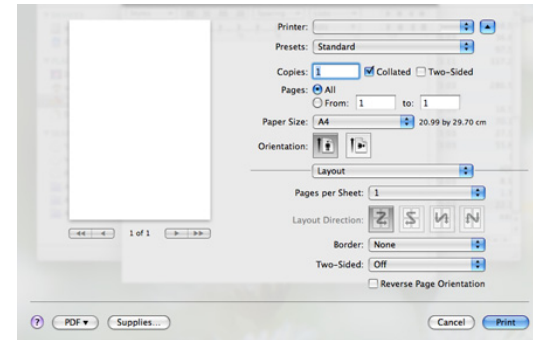
Open an application and select **Print** from the **File** menu. The machine name, which appears in the printer properties window may differ depending on the machine in use. Except for the name, the composition of the printer properties window is similar to the following.

-  The setting options may differ depending on printers and Macintosh OS version.

#### Layout

The **Layout** tab provides options to adjust how the document appears on the printed page. You can print multiple pages on one sheet of paper.

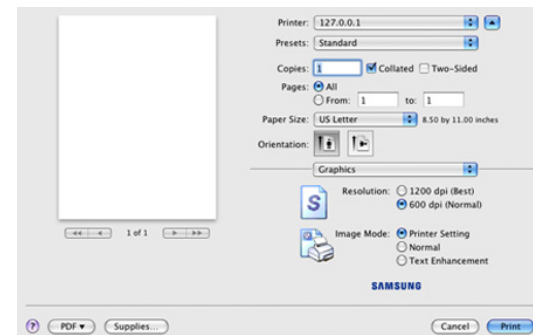
Select **Layout** from the drop-down list under **Orientation** to access the following features.



- **Pages per Sheet:** This option determines how many pages to be printed on one page. (See "Printing multiple pages on one sheet of paper" on page 49.)
- **Layout Direction:** This option allows you to select the printing direction on a page similar to the examples on UI.
- **Border:** This option allows you to print a border around each page on the sheet.
- **Two-Sided:** This option allows you to print on both sides of a paper. (See "Printing on both sides of paper" on page 49.)
- **Reverse Page Orientation:** This option allows you to rotate paper 180 degrees.

### Graphics

The **Graphics** tab provides options for selecting **Resolution**. Select **Graphics** from the drop-down list under **Orientation** to access the graphic features.



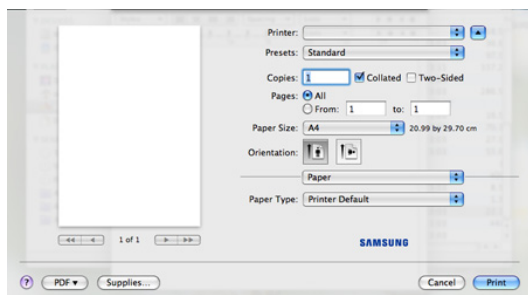
- **Resolution (Quality):** This option allows you to select the printing resolution. The higher the setting, the sharper the clarity of printed characters and graphics. The higher setting also may increase the time it takes to print a document.
- **Image Mode:** This option allows you to enhance printouts. The available options are **Normal** and **Text Enhancement**.

### Paper

Set **Paper Type** to correspond to the paper loaded in the tray from which you want to print. This will let you get the best quality printout. If

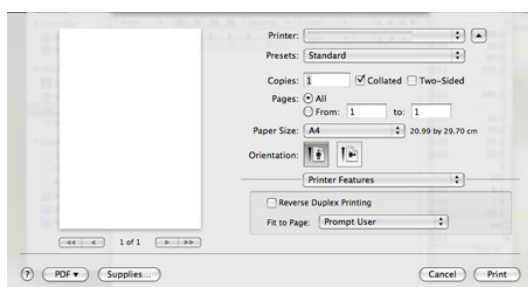


you load a different type of print material, select the corresponding paper type.



## Printer Features

**Printer Features** tab provides **Reverse Duplex Printing** and **Fit to Page** options. Select **Printer Features** from the drop-down list under **Orientation** to access the following features:

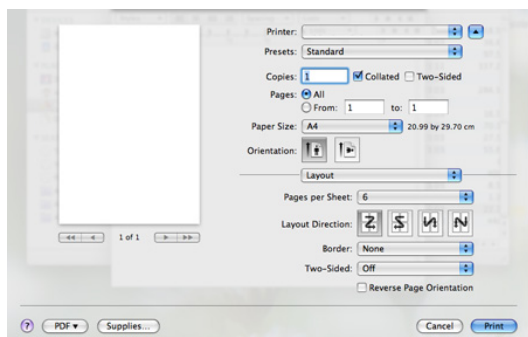


- **Reverse Duplex Printing:** This option allows you to select general print order compared to duplex print order. If this option does not appear, your machine does not have this feature.
- **Fit to Page:** This option allows you to scale your print job to any selected paper size regardless of the document size. This can be useful when you want to check fine details on a small document.

## Printing multiple pages on one sheet of paper

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

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.

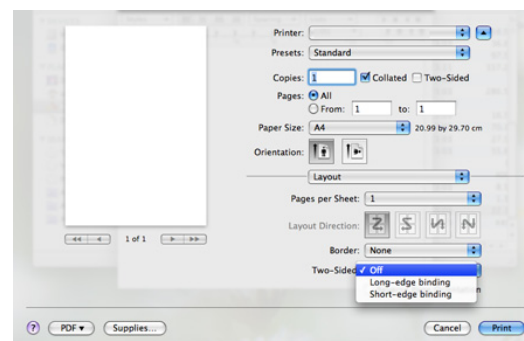


3. Select the other options you want to use.
4. Click **Print**, then the machine prints the selected the number of pages you want to print on one sheet of paper.

## Printing on both sides of paper

You can print on both sides of the paper. 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 **Two Sided Printing** option.
  4. Select the other options you want to use.
  5. Click **Print**, then the machine prints on both sides of the paper.



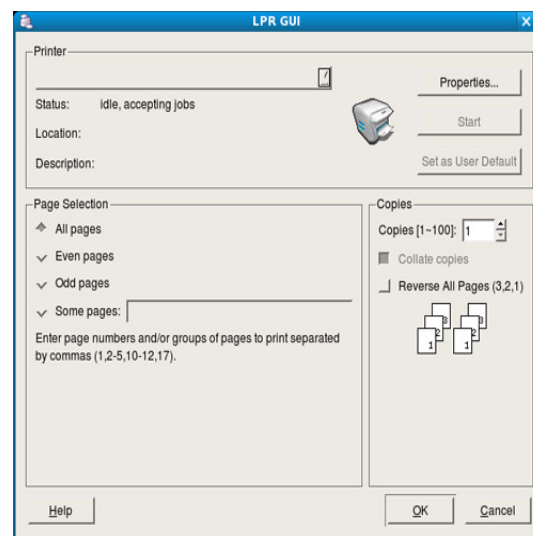
**!** If you print more than 2 copies, the first copy and the second copy might print on same sheet of paper. Avoid printing on both sides of paper when you are printing more than 1 copy.

## LINUX PRINTING

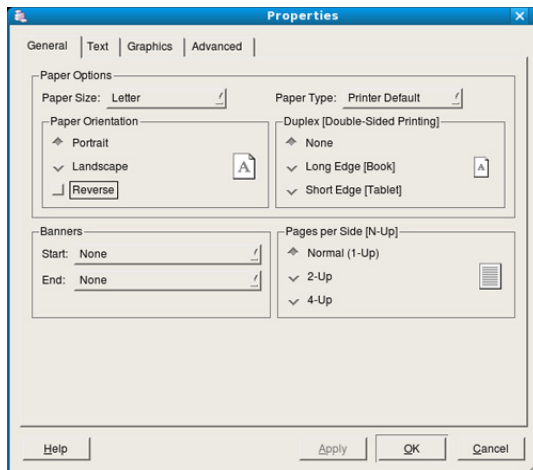
### Printing from applications

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:** This option allows you to change 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.
- **Text:** This option allows you to specify the page margins and set the text options, such as spacing or columns.
- **Graphics:** This option allows you to set image options that are used when printing images/files, such as color options, image size, or image position.
- **Advanced:** This option allows you to set the print resolution, paper source, and destination.

 If an option is grayed out, it means that the grayed out option is not supported.

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 way, directly from the command line interface. The CUPS lpr utility allows you to do that. But the drivers package replaces the standard lpr tool by a much more user-friendly LPR GUI program.

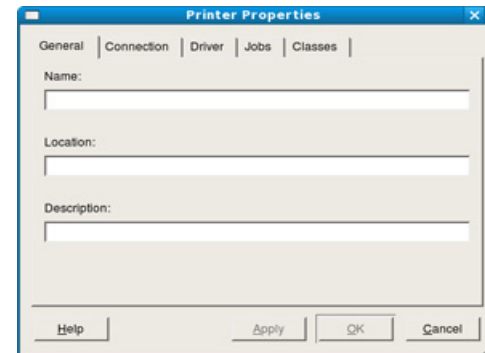
To print any document file:

1. Type `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 opens.




The following five tabs display at the top of the window:

- **General:** This option allows you to change the printer location and name. The name entered in this tab displays on the printer list in **Printers configuration**.
  - **Connection:** This option 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 printer driver. By clicking **Options**, you can set the default device options.
  - **Jobs:** This option 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:** This option 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.

## PRINTING WITH PS DRIVER

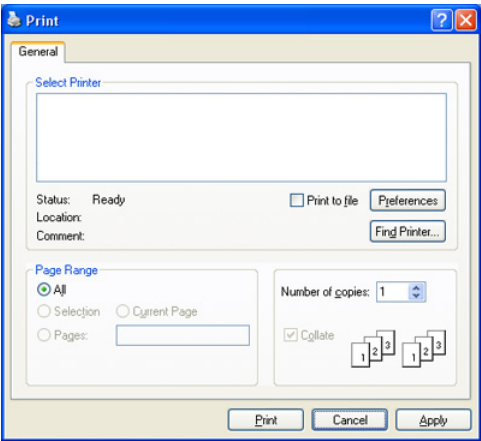
PS printer driver is provided on the supplied software CD.

If you select **Typical installation for a local printer** or **Typical installation for a network printer** when installing machine's driver, PS driver will automatically be installed. (See "Installing USB connected machine's driver" on page 26 or "Installing network connected machine's driver" on page 32.)

 After installing the memory module, you need to select it in the printer properties of the PostScript printer driver in order to use it. (See "Activating the added accessories in printer properties" on page 78.)

1. Open the document you want to print.
2. Select **Print** from the **File** menu. The **Print** window appears. It may look slightly different depending on your application.  
The basic print settings are selected within the **Print** window. These

settings include the number of copies and print range.



3. Select your machine's PS driver from the **Select Printer** list.



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 setting. (See "Understanding PS driver's Printing Preferences" on page 51.)

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

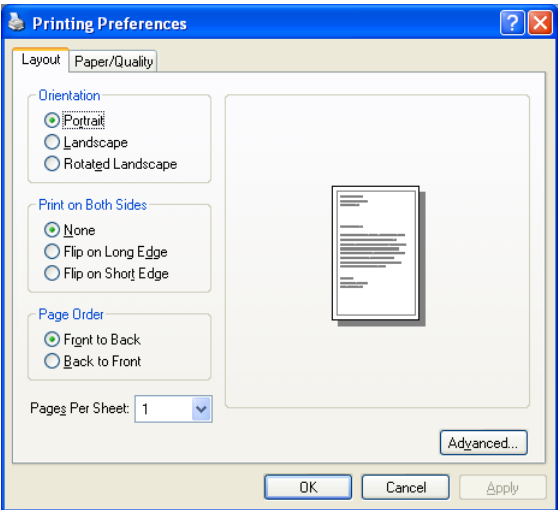
## Understanding PS driver's Printing Preferences

### Opening Printing Preferences

1. Open the document you want to print.
2. Select **Print** from the file menu. The **Print** window appears.
3. Select your machine's PS driver from the **Select Printer**.
4. Click **Properties** or **Preferences**.

### Layout tab

The **Layout** tab provides options to adjust how the document appears on the printed page.



### Orientation

This option allows you to select the direction in which the information is printed on a page.

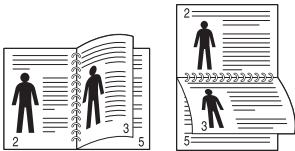
- **Portrait:** This option prints across the width of the page, letter style.

- **Landscape:** This option prints across the length of the page, spreadsheet style.
- **Rotate Landscape:** This option allows you to rotate the page, 180 degrees.

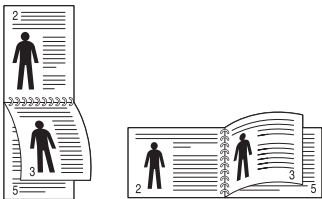
### Print on Both Sides

You can print on both sides of a sheet of paper. Before printing, decide how you want your document oriented.

- **None**
- **Flip on Long Edge:** This option is the conventional layout used in bookbinding.



- **Flip on Short Edge:** This option is the type often used with calendars.



Do not print on both sides of labels, transparencies, envelopes, or thick papers. It may result in paper jam and damage to the machine.

### Page Order

This option allows you to select the printout order.

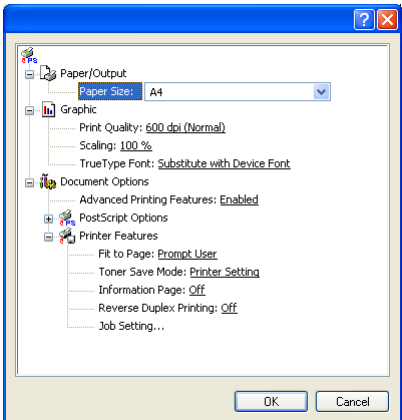
- **Front to Back:** Pages are printed out in regular order.
- **Back to Front:** Pages are printed out in reverse order.

### Pages Per Sheet

You can select 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.

### Advanced

You can select **Paper Size**, **Graphic**, and **Document Options**.

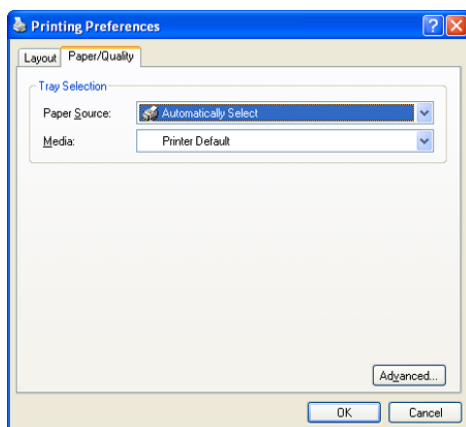


- **Paper/Output:** This option allows you to choose paper size you want to use.

- **Graphic:** This option allows you to select printing quality options.
- **Document Options:** This option allows you to select options such as **Post Script Option** and, **Printer Features**.

## Paper/Quality tab

You can select paper tray and media type.



- **Paper Source:** This option allows you to choose which tray to use.
- **Media:** This option allows you to choose which media to use.




# 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

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

## ACCESSING THE MENU

1. Press  until the menu you want appears on the bottom line of the display and press **OK**.
2. Press the left/right arrow until the desired menu item appears and press **OK**.
3. If the setting item has sub menus, repeat step 2.
4. Press the left/right arrow to access the required value.
5. Press **OK** to save the selection.
6. Press  to return to ready mode.

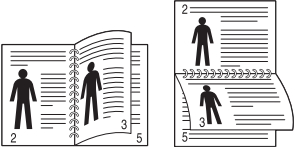
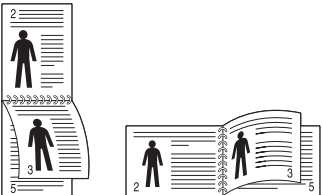
## INFORMATION

ITEM	DESCRIPTION
Menu Map	You can print the menu map which shows the layout and current settings of this machine.
Configuration	You can print a report on the machine's overall configuration.
Demo Page	You can print the demo page to check whether your machine is printing properly or not.
PCL Font List	You can print the PCL font list.
PS3 Font List	You can print the PS3 font list.
EPSON Font	You can print the EPSON font list.


## LAYOUT

ITEM	DESCRIPTION
Orientation	This menu allows you to select the direction in which information is printed on a page.

- Graphic
- System setup
- Emulation
- Network

ITEM	DESCRIPTION
Simplex Margin	<p>Set the margin of print materials for one-sided printing. You can increase or decrease the value in 0.1mm increments.</p> <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>
Duplex	<p>To print on both sides of paper, choose the binding edge.</p> <ul style="list-style-type: none"><li>• <b>Long Edge:</b> This item is the conventional layout used in bookbinding.</li></ul>  <ul style="list-style-type: none"><li>• <b>Short Edge:</b> This item is the conventional layout used in calendars.</li></ul>  <p>Select <b>Off</b> to print on one side of the paper.</p>
Duplex Margin	<p>In this menu, you can set the margins for double-sided printing. You can increase or decrease the value in 0.1mm increments.</p> <ul style="list-style-type: none"><li>• <b>Top Margin:</b> Set the top margin, from 0.0 to 9.9mm.</li><li>• <b>Left Margin:</b> Set the left margin, from 0.0 to 9.9mm.</li><li>• <b>Short Binding:</b> Set the left margin, from 0.0 to 22mm.</li><li>• <b>Long Binding:</b> Set the left margin, from 0.0 to 22mm.</li></ul>

## PAPER

ITEM	DESCRIPTION
Copies	You can select the amount of copies from 1 to 999.
Paper Size	You can select the paper size currently loaded in the tray.
Paper Type	You can select the paper type currently loaded in the tray.
Paper Source	Using this menu, you can set which tray you want to use. <ul style="list-style-type: none"><li>If you select <b>Auto</b>, the machine can automatically determine the source.</li><li>Select <b>MP Tray</b> or <b>Manual Tray</b> to use the multi-purpose tray. If you select <b>Manual Tray</b>, you need to press  each time you print a page and select <b>Manual Feeder for Source</b> from your software application.</li><li><b>Tray 2</b> is available only when an optional tray 2 is installed.</li></ul>
Tray Chaining	When you select any other value except <b>Auto</b> from <b>Paper Source</b> and the selected tray is empty, you can set the machine to automatically print from other trays. If this menu item is set to <b>Off</b> , the machine does not work until you insert paper into the specified tray.

## GRAPHIC

ITEM	DESCRIPTION
Resolution	Specify the number of dots printed per inch (dpi). The higher the setting, the sharper printed characters and graphics.
Darkness	You can lighten or darken the print on the page by changing the toner density setting. The <b>Normal</b> setting usually produces the best result. Use the <b>Light</b> toner density setting to save toner.
Image Enhance	This menu allows you to enhance the print quality. <ul style="list-style-type: none"><li><b>Normal</b>: Doesn't enhance the quality.</li><li><b>Text Enhance</b>: Enhances letters and simple figures.</li></ul>

## SYSTEM SETUP

ITEM	DESCRIPTION
Language	This menu determines the language of the text that appears on the control panel display and information printing.
Power Save	When the machine does not receive data for an extended period of time, power consumption is automatically lowered. You can set how long the machine waits before going to power save mode.
Auto Continue	This menu determines whether or not the machine continues printing when it detects the paper unmatched to your paper setting. <ul style="list-style-type: none"><li><b>Off</b>: If a paper mismatch occurs, the message will remain on the display and the machine will remain off-line until you insert the correct paper.</li><li><b>On</b>: If the paper mismatch occurs, an error message will display. The machine will go offline for 30 seconds, then automatically clear the message and continue printing.</li></ul>
Altitude Adj.	You can optimize print quality according to your altitude.
Auto CR	This menu allows you to append the required carriage return to each line feed, which is useful to the Unix user or DOS user.
Job Timeout	You can set the length of time the printer waits before printing the last page of a print job that does not end with a command to print the page.
Maintenance	This menu allows you to maintain your machine. <ul style="list-style-type: none"><li><b>Clean Drum</b>: Cleans the OPC drum of the cartridge and produces a sheet with toner debris on it.</li><li><b>Supplies Life</b>: This item allows you to check how many pages are printed and how much toner are left in the cartridge.</li><li><b>TonerLow Alert</b>: 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.</li><li><b>Paper Stacking</b>: If you use a machine in a humid area, or you are using the damp print media caused by a high humidity, the print-outs on the output tray may be curled and may not be stacked properly. In this case, you can set the machine to use this function to let print-outs stacked firmly. But, using this function will make the print speed slow.</li></ul>
Clear Setting	This menu allows you to restore the machine's factory default settings.

## EMULATION

ITEM	DESCRIPTION
Emulation Type	The machine language defines how the computer communicates with the machine. If you select Auto, your machine can change the machine language automatically.
Setup	<p><b>PCL</b></p> <p>This item sets the PCL emulation configuration. You can set the font type, symbol type, lines per page, and font size.</p> <ul style="list-style-type: none"><li>• <b>Typeface:</b> You can select the standard font to be used in PCL emulation. PCL1~PCL7's interval between letters is fixed, and PCL8~PCL45's interval is proportional to the font type and font size. You can adjust the font size of PCL1~PCL7 using the <b>Pitch</b> item, and PCL8~PCL45 can do using <b>Point Size</b> item.</li><li>• <b>Symbol:</b> This item selects the symbol set to be used in PCL emulation. The symbol is the group of numbers, marks, and special signs being used when printing letters. Depending on the <b>Typeface</b> setting, available symbol sets vary.</li><li>• <b>Point Size:</b> When you select one between PCL8 and PCL45 from the <b>Typeface</b> menu, you can determine the font size by setting the height of the characters in the font.</li><li>• <b>Courier:</b> This item lets you select the version of <b>Courier</b> font to use.</li><li>• <b>Pitch:</b> When you select one between PCL1 and PCL7 from the <b>Typeface</b> menu, you can determine the font size by setting the number of characters that will print in one horizontal inch of type. The default value, 10 is the best size.</li><li>• <b>Lines:</b> This item allows you to set vertical spacing from 5 to 128 lines for the default paper size. The default number of lines may differ according to the paper size and printing orientation.</li></ul> <p><b>PostScript</b></p> <p>This item provides you with the <b>Print PS Error</b> menu item. You can select whether or not your printer prints an error list when a PS error occurs. Select <b>On</b> to print PS 3 emulation errors. If an error occurs, the job stops processing, the error message prints, and the printer deletes all the jobs. If this menu is set to <b>Off</b>, the jobs are deleted without an indication of the error.</p>

ITEM	DESCRIPTION
Setup	<p><b>Epson</b></p> <p>This item sets the EPSON emulation configuration.</p> <ul style="list-style-type: none"><li>• <b>Font:</b> You can select the standard font to be used in EPSON emulation.</li><li>• <b>Character Set:</b> This item allows you to select a character set of the desired language.</li><li>• <b>Character Tab.:</b> This item selects the character set.</li><li>• <b>Pitch:</b> You can determine the font size by setting the number of characters that will print in one horizontal inch of type.</li><li>• <b>LPI:</b> You can set the number of lines printed in one vertical inch.</li><li>• <b>Auto Wrap:</b> This item determines whether or not the machine automatically performs line feed when the data overflows the printable area of the print material.</li></ul>

## NETWORK

ITEMS	DESCRIPTION
TCP/IP	<p>This menu allows you to manually set the TCP/IP addresses or receive the addresses from the network.</p> <ul style="list-style-type: none"><li>• <b>DHCP:</b> The DHCP server allots the IP address to you automatically.</li><li>• <b>BOOTP:</b> This BOOTP server allots the IP address to you automatically.</li><li>• <b>Static:</b> You can enter IP address, subnet mask, and gateway manually.</li></ul>
EtherTalk	This menu lets you select whether or not you use the EtherTalk protocol. Select <b>On</b> to use the protocol.
Ethernet Speed	This menu allows you to select the ethernet speed.
Clear Setting	This menu performs a simple reset and restores the factory default settings for the network configuration. This setting will only take effect after you have reset the printer.
Network Info	This menu allows you to print a page showing the network parameters you set.

# management tools

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

## This chapter includes:

- Introducing useful management tools
- Using SyncThru™ Web Service
- Using the Smart Panel program
- Using SetIP program
- Using the Unified Linux Driver Configurator

## INTRODUCING USEFUL MANAGEMENT TOOLS

The programs below help you to use your machine conveniently.

- "Using SyncThru™ Web Service" on page 56.
- "Using the Smart Panel program" on page 57.
- "Using SetIP program" on page 57.
- "Using the Unified Linux Driver Configurator" on page 58.

## USING SYNCTHRU™ WEB SERVICE



Your SyncThru™ Web Service window that appears in this user's guide may differ depending on the machine in use.

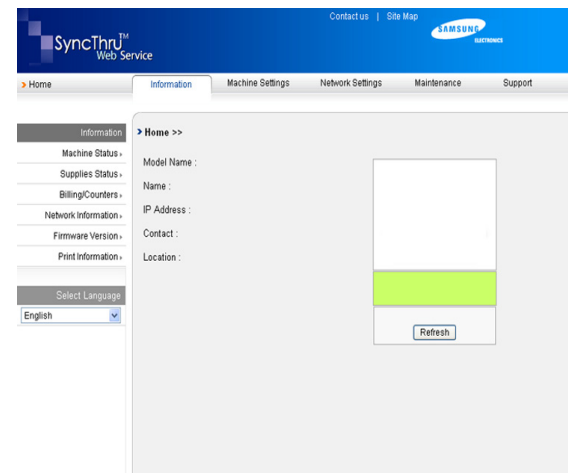
If you have connected your machine to a network and set up TCP/IP network parameters correctly, you can manage the machine via SyncThru™ Web Service, an embedded web server. Use SyncThru™ Web Service to:

- View the machine's device information and check its current status.
- Change TCP/IP parameters and set up other network parameters.
- Change printer preference.
- Set the email notifications advising of the machine's status.
- Get support for using the machine.

### To access SyncThru™ Web Service:

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

## SyncThru™ Web Service overview



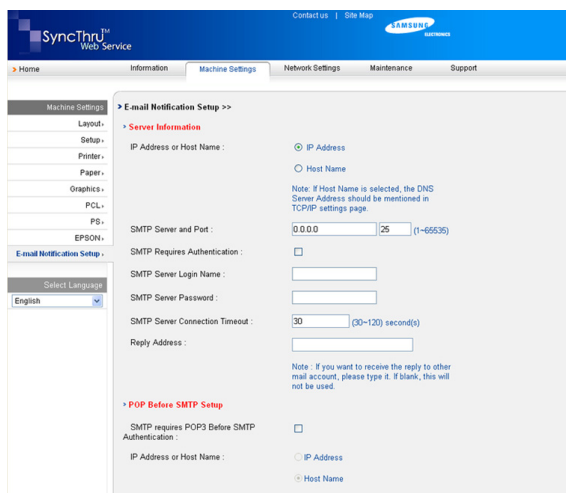
- **Information tab:** This tab gives you general information about your machine. You can check things, such as the machine's IP address, remaining amount of toner, ethernet information, firmware version, and so on. You can also print reports such as an error report and so on.
- **Machine Settings tab:** This tab allows you to set options provided by your machine.
- **Network Settings tab:** This tab allows you to view and change the network environment. You can set things, such as TCP/IP, enabling Ether Talk and so on.
- **Maintenance tab:** This tab allows you to maintain your machine by upgrading firmware and setting security information.
- **Support tab:** This tab allows you to set contact information for sending email. You can also connect to SEC website or download drivers by selecting Link.

## E-mail Notification Setup

You can receive emails about your machine's status by setting this 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 **Machine Settings**, select **E-mail Notification Setup**.

4. Set required settings.



5. Click **Apply**.

USING THE SMART PANEL PROGRAM

Smart Panel is a program that monitors and informs you of the machine status, and allows you to customize the machine's settings. Smart Panel is installed automatically when you install the machine software.

- To use this program, you need the following system requirements:
- Windows. Check for windows operating system(s) compatible with your machine. (See "System requirements" on page 25.)
  - Mac OS X 10.3 or higher
  - Linux. Check for Linux systems that are compatible with your machine. (See "System requirements" on page 25.)
  - Internet Explorer version 5.0 or higher for flash animation in HTML Help.

If you need to know the exact model name of your machine, you can check the supplied software CD.

Understanding Smart Panel

If an error occurs while printing, you can check the error from the Smart Panel.

You can also launch Smart Panel manually. Double-click the Smart Panel icon on the Windows task bar (in Windows), or Notification Area (in Linux). You can also click it on the status bar (in Mac OS X).

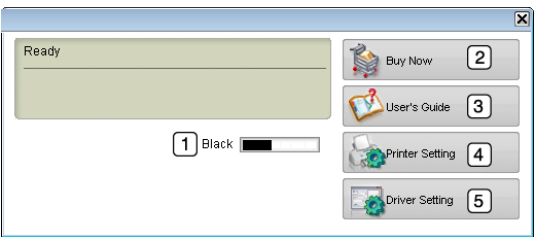
Windows		Double-click this icon in Windows.
Macintosh		Click this icon in Mac OS X.
Linux		Click this icon in Linux.

Or, if you are a Windows user, you can launch it from the **Start** menu, select **Programs** or **All Programs** > **your printer driver name** > **Smart Panel**.

- To use this program, you need the following system requirements:
- If you have already installed more than one Samsung machine, first select the correct machine model you want in order to access the corresponding Smart Panel.  
Right-click (in Windows or Linux) or click (in Mac OS X) the Smart Panel icon and select your machine.
  - The Smart Panel window and its contents shown in this user's

guide may differ depending on the machine or operating system in use.

The Smart Panel program displays the current status of the machine, the level of toner remaining in the toner cartridge(s), and various other types of information. You can also change settings.



1	<b>Toner Level</b>	View the level of toner remaining in the toner cartridge(s). 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.
2	<b>Buy Now</b>	Order replacement toner cartridge(s) online.
3	<b>User's Guide</b>	View User's Guide. This button changes to <b>Troubleshooting Guide</b> when error occurs. You can directly open troubleshooting section in the user's guide.
4	<b>Printer Setting</b>	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 window.
5	<b>Driver Setting</b>	Set all of the machine options you need in the <b>Printer Preferences</b> window. This feature is available only for Windows. (See "Opening Printing Preferences" on page 44.)

Opening the Troubleshooting Guide

Find solutions for problems by using the **Troubleshooting Guide**.  
Right-click (in Windows or Linux) or click (in Mac OS X) the Smart Panel icon and select **Troubleshooting Guide**.

Changing the Smart Panel Program Settings

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

USING SETIP PROGRAM

This program is for the network IP setting using the MAC address which is the hardware serial number of the network printer card or interface. It is especially for the network administrator to set several network IPs at the same time.

- You can only use the SetIP program when your machine is connected to a network.




## Windows

The following procedure is based on the Windows XP operating system.

### Installing the program

1. Insert the software CD provided with your machine. When the software CD runs automatically, close the window.
2. From the **Start** menu select **My Computer** and open the X drive. (X represents your CD-ROM drive.)
3. Double click **Application > SetIP**.
4. Double-click **Setup.exe** to install this program.
5. Click **OK**.  
If necessary, select a language from the drop-down list..
6. Follow the instructions in the window to complete the installation.

### Printing out the machine's MAC address

1. Make sure that the machine is turned on with paper loaded in the tray.
2. Press  until **Network** appears on the bottom line of the display and press **OK**.
3. Press the left/right arrow until **Network Info.** appears and press **OK**.
4. Press the left/right arrow until **Print?** appears.
5. Press **Yes**.

### Setting network values

1. Print the machine's network configuration report to find your machine's MAC address.
2. From the Windows **Start** menu, select **All Programs > Samsung Network Printer Utilities > SetIP > SetIP**.
3. Click to open the TCP/IP configuration window.
4. Enter the network card's MAC address, IP address, subnet mask, default gateway, and then click **Apply**.


 When you enter the MAC address, enter it without a colon(:).

5. The machine prints the network information. Confirm all the settings are correct.
6. Close the SetIP program.

## Macintosh

SetIP program should be automatically installed during the printer driver installation.


### Printing out the machine's MAC address

1. Make sure that the machine is turned on with paper loaded in the tray.
2. Press  until **Network** appears on the bottom line of the display and press **OK**.
3. Press the left/right arrow until **Network Info.** appears and press **OK**.
4. Press the left/right arrow until **Print?** appears.
5. Press **Yes**.

### Setting network values

If you want to change your network printer IP setting, follow the below instruction.


 If you select **Typical installation for a network printer** during the printer driver installation, the SetIP program automatically runs after the installation. Go to step 4.

1. Print the machine's network configuration report to find your machine's MAC address.
2. Open the **Library** folder > **Printers > Samsung > your printer model name > SetIP**.
3. Double click the **SetIPApplet.html** file.
4. The certificate window appears, click **Trust**.
5. Click to open the TCP/IP configuration window.
6. Enter the network card's MAC address, IP address, subnet mask, default gateway, and then click **Apply**.  
 When you enter the MAC address, enter it without a colon(:).
7. The machine prints the network information. Confirm all the settings are correct.
8. Close the SetIP program.


## Linux

SetIP program should be automatically installed during the printer driver installation.

### Printing out the machine's MAC address

1. Make sure that the machine is turned on with paper loaded in the tray.
2. Press  until **Network** appears on the bottom line of the display and press **OK**.
3. Press the left/right arrow until **Network Info.** appears and press **OK**.
4. Press the left/right arrow until **Print?** appears.
5. Press **Yes**.

### Setting network values

1. Print the machine's network configuration report to find your machine's MAC address.
2. Open the **/opt/Samsung/mfp/share/utlis/**.
3. Double click the **SetIPApplet.html** file.
4. Click to open the TCP/IP configuration window.
5. Enter the network card's MAC address, IP address, subnet mask, default gateway, and then click **Apply**.  
 When you enter the MAC address, enter it without a colon(:).
6. The machine prints the network information. Confirm all the settings are correct.
7. Close the SetIP program.

## USING THE UNIFIED LINUX DRIVER CONFIGURATOR

The supplied software CD provides you with the Unified Linux Driver package for using your machine with a Linux computer.

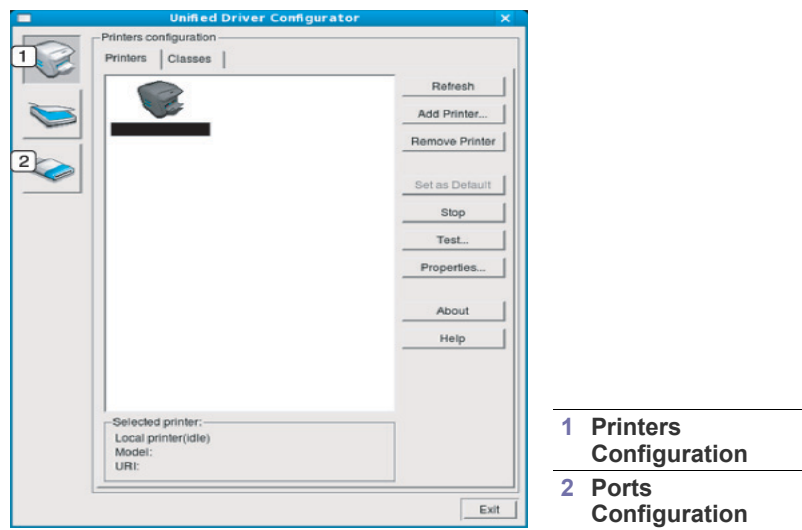
Unified Linux Driver Configurator is a tool primarily intended for configuring machine devices.

After the driver is installed on your Linux system, the Unified Linux 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.



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

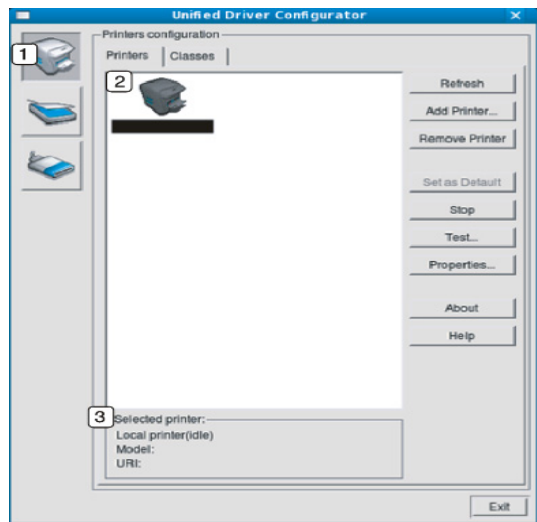
3. After changing the configurations, click **Exit** to close the Unified Driver Configurator.

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.



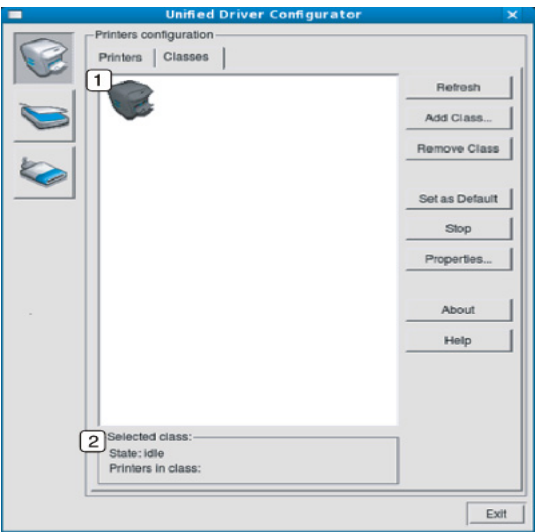
1	Switches to <b>Printers configuration</b> .
2	Shows all of the installed machine.
3	Shows the status, model name and URI of your machine.

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.

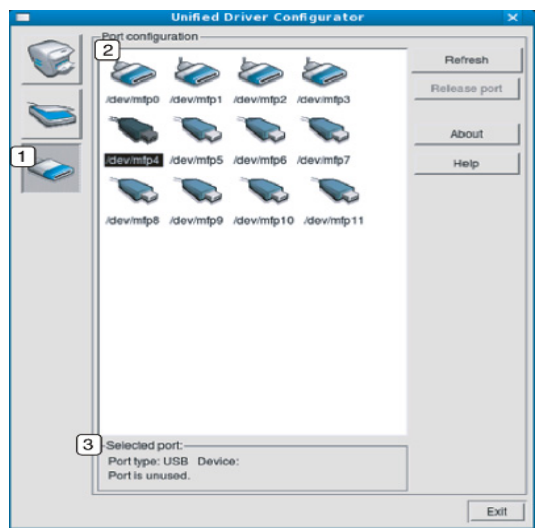


1	Shows all of the machine classes.
2	Shows the status of the class and the number of machines in the class.

- **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 <b>Ports configuration</b> .
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

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


## This chapter includes:

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

## PRINTING A MACHINE REPORT

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You can print a configuration page to view current printer settings, or to help troubleshoot printer problems.

1. Press and hold the  on the control panel for about 5 seconds.  
A configuration page prints out.

## MONITORING THE SUPPLIES LIFE

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

1. Press  until **System Setup** appears on the bottom line of the display and press **OK**.
2. Press the left/right arrow until **Maintenance** appears and press **OK**.
3. Press the left/right arrow until **Supplies Lifer** appears and press **OK**.
4. Press the left/right arrow until the setting you want appears.
5. Press **OK** to save the selection.
6. Press  to return to ready mode.

## USING TONER LOW ALERT

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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. Ensure that you have installed the printer driver with the provided Printer Software CD.
2. Double-click the **Smart Panel** icon on the Windows task bar (or Notification Area in Linux). You can also click **Smart Panel** on the status bar in Mac OS X.
3. Click **Printer Setting**.
4. Click **Setting > Toner Low Alert**. Select the appropriate setting and then click **Apply**.

## CLEANING A MACHINE

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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.


## Printing a cleaning sheet

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

You can Print:

- **OPC cleaning sheet:** cleans the OPC drum of the toner cartridge.

This process will produce a page with toner debris, which should be discarded.

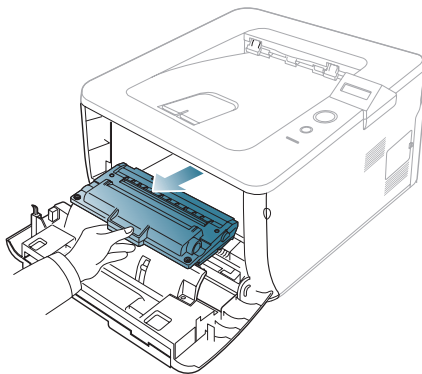
1. Make sure that the machine is turned on with paper loaded in the tray.
2. Press  until **System Setup** appears on the bottom line of the display and press **OK**.
3. Press the left/right arrow until **Maintenance** appears and press **OK**.
4. Press the left/right arrow until **Clean Drum** appears.
5. 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.

## Cleaning the inside

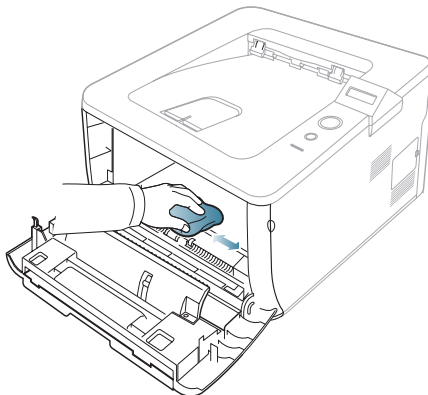
During the printing process, paper, toner, and dust particles can accumulate inside the machine. This buildup can cause print quality problems, such as toner specks or smearing. Cleaning the inside of the machine clears and reduces these problems.

1. Turn the machine off and unplug the power cord. Wait for the machine to cool down.
2. Open the front cover and pull the toner cartridge out. Set it on a clean flat surface



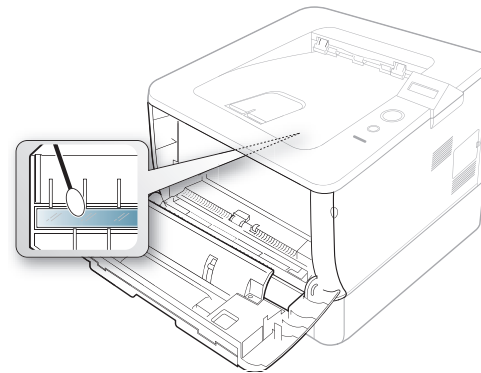
- To prevent damage to the toner cartridge, do not expose it to light for more than a few minutes. Cover it with a piece of paper, if necessary.
- Do not touch the green surface underside of the toner cartridge. Use the handle on the cartridge to avoid touching this area.

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



While cleaning the inside of the machine, be careful not to damage the transfer roller or any other inside parts. Do not use solvents such as benzene or thinner to clean. Printing quality problems can occur and cause damage to the machine.

4. 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.



5. Reinsert the toner cartridge and close the front cover.
6. 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.
- Correct side up in a horizontal position (not standing on end).
- Do not store consumables in;
  - Temperature greater than 40°C (104°F).
  - Humidity range less than 20% and not 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**

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- 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.

## This chapter includes:

- Redistributing toner
- Tips for avoiding paper jams
- Clearing paper jams
- Understanding display messages
- Solving other problems

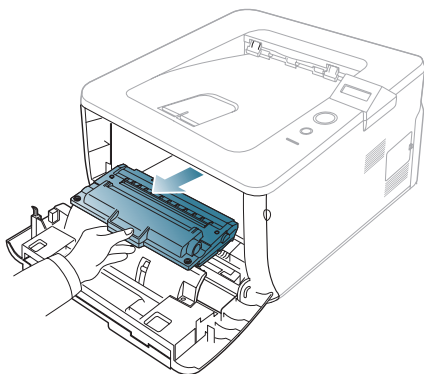
## REDISTRIBUTING TONER

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

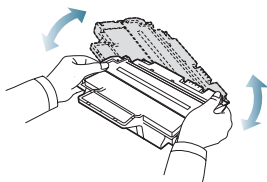
- White streaks or light printing occurs.
- **Toner Low. ReplaceToner** appears on the display.
- The **Status** LED blinks red.

If this happens, you can temporarily improve print quality by redistributing the remaining toner in the cartridge. In some cases, white streaks or light printing will still occur even after you have redistributed the toner.

1. Open the front cover.
2. Pull the toner cartridge out.



3. Thoroughly roll the cartridge five or six times to distribute the toner evenly inside the cartridge.



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

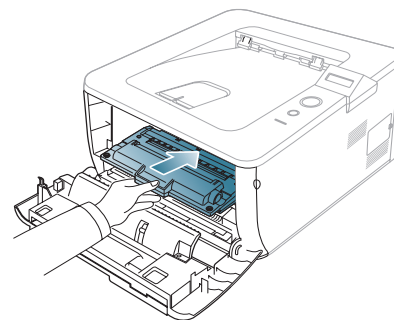


Do not touch the green underside of the toner cartridge. Use the handle on the cartridge to avoid touching this area.

4. Hold the toner cartridge by the handle and slowly insert the cartridge into the opening in the machine.

Tabs on the sides of the cartridge and corresponding grooves within the machine will guide the cartridge into the correct position until it locks into

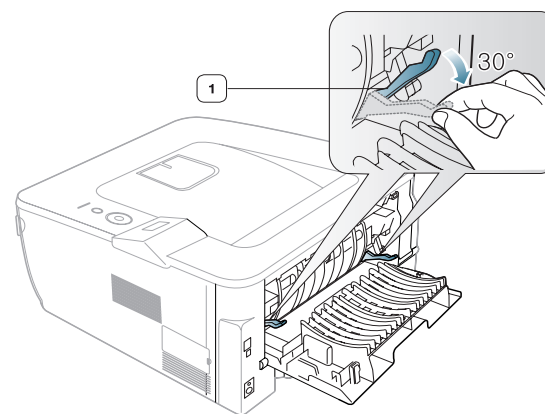
place completely.



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

## TIPS FOR AVOIDING PAPER CURLS

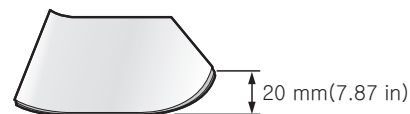
1. Open the rear cover.
2. Pull down the pressure lever on each side about 30 degrees.



### 1 Pressure lever



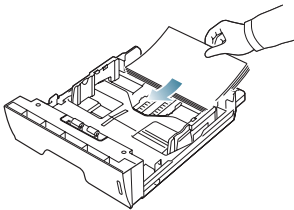
Keep the rear cover opened during printing. Only use when the printout has more than 20mm curl.



## 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 38.)  
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 41.)
- Ensure that the recommended side of the print media is facing down in the tray, or facing up 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 90 degrees. (See "Opening Printing Preferences" on page 44.)

## CLEARING PAPER JAMS

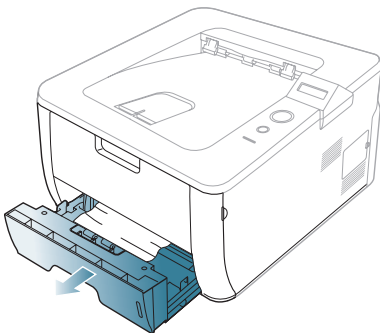
When a paper jam occurs, a warning message appears on the display.



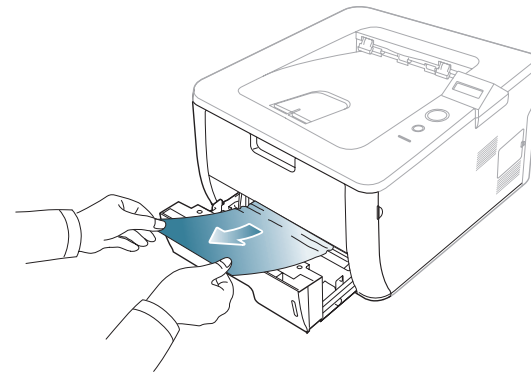
To avoid tearing the paper, pull the jammed paper out slowly and gently. Follow the instructions in the following sections to clear the jam.

### In tray 1

1. Open and close the front cover. The jammed paper is automatically ejected from the machine.  
If the paper does not exit, go to the next step.
2. Pull out tray 1.



3. Remove the jammed paper by gently pulling it straight out.

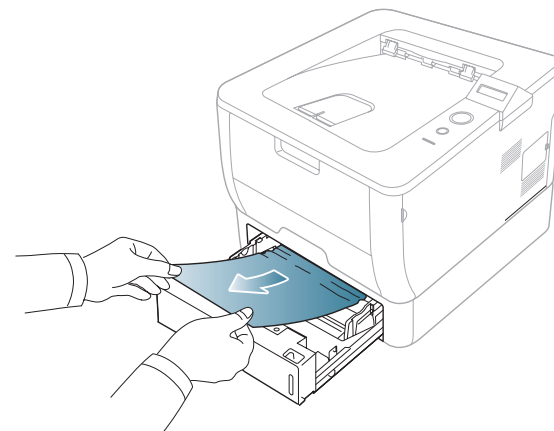


If the paper does not move when you pull, or if you do not see the paper in this area, check the fuser area around the toner cartridge. (See "Inside the machine" on page 66.)

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

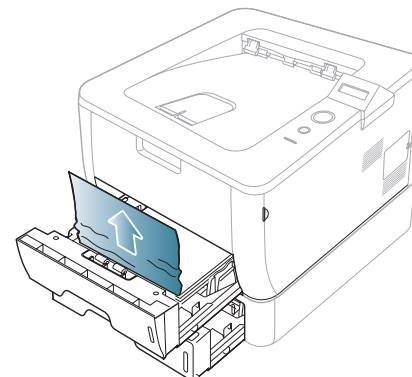
### In optional tray 2

1. Pull out optional tray 2.
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.

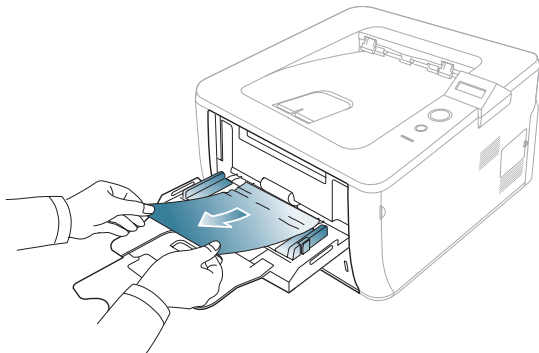
3. Pull tray 1 half-way out.
4. Pull the paper straight up and out.



5. Insert the trays back into the machine. Printing automatically resumes.


## In the multi-purpose tray

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

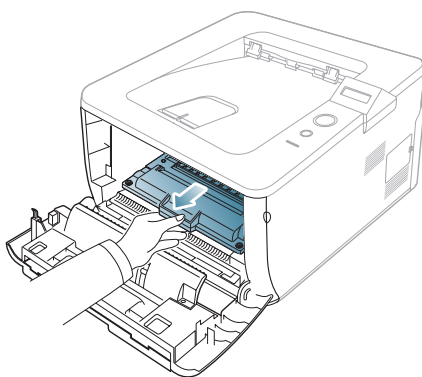


2. Open and close the front cover to resume printing.

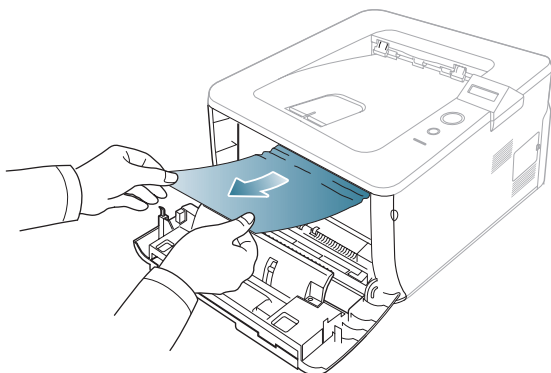
## Inside the machine

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

1. Open the front cover and pull the toner cartridge out, lightly pushing it down.



2. Remove the jammed paper by gently pulling it straight out.

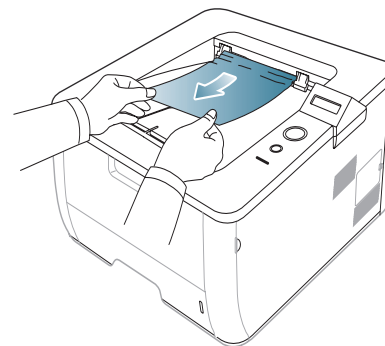


3. Replace the toner cartridge and close the front cover. Printing automatically resumes.

## In exit area

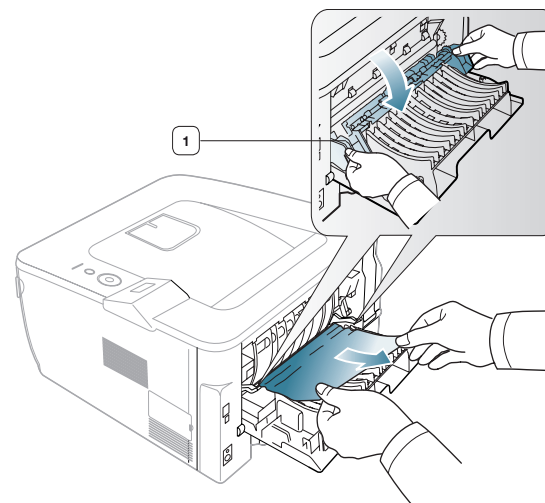
1. Open and close the front cover. The jammed paper is automatically ejected from the machine.  
If you do not see the jammed paper, go to next step.

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 go to the next step.

3. Open the rear cover.
4. Pull down the pressure lever on each side about 90 degrees.
5. Pull the fuser door down and remove the paper.  
Return the fuser door and the pressure levers to their original position.

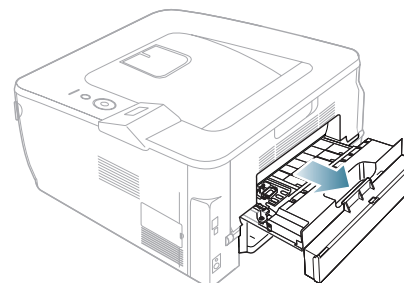


6. Close the rear cover. Printing automatically resumes.

## In the duplex unit area

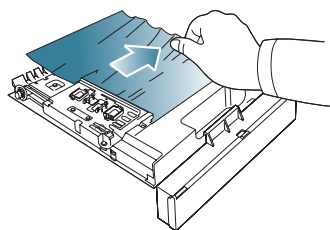
If the duplex unit is not inserted correctly, a paper jam may occur. Make sure that the duplex unit is inserted correctly.

1. Pull the duplex unit out of the machine.

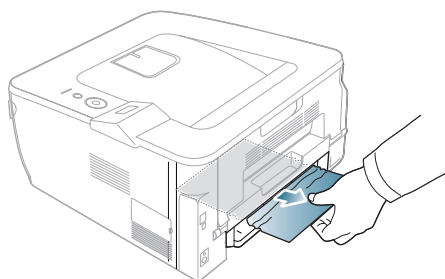




2. Remove the jammed paper from the duplex unit.

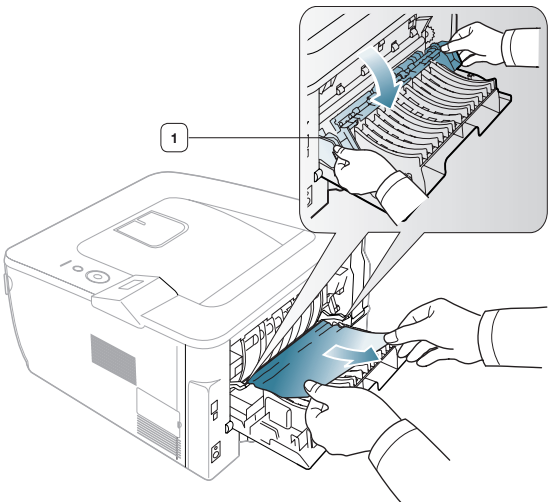


If the paper does not come out with the duplex unit, remove the paper from the bottom of the machine.  
Insert the duplex unit into the machine.



If you still do not see the paper, go to the next step.

- 3. Open the rear cover.
- 4. Pull down the pressure lever on each side about 90 degrees.
- 5. Pull the fuser door down and remove the paper.  
Return the fuser door and the lever to their original position.





1 fuser door

6. Close the rear cover. Printing automatically resumes.

## UNDERSTANDING DISPLAY MESSAGES


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


- If a message is not in the table, reboot the power and try the printing job again. If the problem persists, call 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.

MESSAGE	MEANING	SUGGESTED SOLUTIONS
<b>Paper Jam 0 Open/Close Door</b>	Paper has jammed in the paper feed area. (tray 1, optional tray2, multi-purpose tray)	Clear the jam. (See "In tray 1" on page 65, "In optional tray 2" on page 65, "In the multi-purpose tray" on page 66.)  If paper jam occurs in MP tray while printing on a transparency, load the transparency in tray1 and try printing again.
<b>Paper Jam 1 Open/Close Door</b>	Paper has jammed around the toner cartridge.	Clear the jam. (See "Inside the machine" on page 66.)
<b>Paper Jam 2 Check Inside</b>	Paper has jammed in the paper exit area.	Clear the jam. (See "In exit area" on page 66.)
<b>Duplex Jam 0 Check Inside</b>	Paper has jammed in the duplex area.	Clear the jam. (See "In the duplex unit area" on page 66.)
<b>Duplex Jam 1 Open/Close Door</b>	Paper has jammed in the duplex area.	Clear the jam. (See "In the duplex unit area" on page 66.)
<b>Door Open</b>	The front cover or rear cover is not securely latched.	Close the cover until it locks into place.
<b>Fuser Door Open</b>	The fuser door is not securely latched.	Open the rear cover and close the fuser door until it locks into place. Fuser door location. (See "In exit area" on page 66.)
<b>Load Manually Press Stop Key</b>	<b>Manual Feeder</b> mode is selected in the <b>Printing Preferences</b> .	Load a sheet of print material and press  .



MESSAGE	MEANING	SUGGESTED SOLUTIONS
<b>IP Conflict</b>	The network IP address you have set is being used by someone else.	Check the IP address and reset it if necessary. (See "Setting the network address" on page 31.)
<b>Low Heat Error Cycle Power</b>	There is a problem in the fuser unit.	Unplug the power cord and plug it back in. If the problem persists, please call for service.
<b>LSU Hsync Error Cycle Power</b>	A problem has occurred in the LSU (Laser Scanning Unit).	Unplug the power cord and plug it back in. If the problem persists, please call for service.
<b>LSU Motor Error Cycle Power</b>	A problem has occurred in the LSU (Laser Scanning Unit.)	Unplug the power cord and plug it back in. If the problem persists, please call for service.
<b>Main Motor Locked</b>	There is a problem in the main motor.	Open and then close the front cover.
<b>Open Heat Error Cycle Power</b>	There is a problem in the fuser unit.	Unplug the power cord and plug it back in. If the problem persists, please call for service.
<b>Self Diagnostics Temperature</b>	The engine in your printer is checking some problems detected.	Please wait a few minutes.
<b>Self Diagnostics LSU</b>	The engine in your printer is checking some problems detected.	Please wait a few minutes.
<b>Tray 1 Paper Empty</b>	There is no paper in the tray 1.	Load paper in the tray 1. (See "Tray 1 / optional tray" on page 38.)
<b>Tray 2 Paper Empty</b>	There is no paper in the optional tray 2.	Load paper in the optional tray 2. (See "Tray 1 / optional tray" on page 38.)
<b>Install Toner</b>	A toner cartridge is not installed	Install a toner cartridge
<b>Invalid Toner</b>	The toner cartridge you have installed is not for your printer.	Install a Samsung-genuine toner cartridge, designed for your printer.

MESSAGE	MEANING	SUGGESTED SOLUTIONS
<b>Non Genuine Toner</b> ◀Stop▶	The toner cartridge installed is not a genuine cartridge.	You can select either <b>Stop</b> or <b>Continue</b> . If you do not select any, the printer will work as <b>Stop</b> is selected. If you select <b>Stop</b> , you cannot print until the genuine cartridge is installed. However, you can still print any kind of reports. If you select <b>Continue</b> , you can keep printing but the quality cannot be guaranteed, and the product support is no longer provided. If you want to change the selection, turn the printer off and on to have this message appear again, and then re-select <b>Stop</b> or <b>Continue</b> .
<b>NonGenuine Toner Replace Toner1</b>	The toner cartridge installed is not a genuine cartridge.	This message appears when you selected <b>Stop</b> at the <b>NonGenuine Toner</b> prompt. Install the genuine toner cartridge.
<b>NonGenuine Toner Replace Toner</b>	The toner cartridge installed is not a genuine cartridge.	This message appears when you selected <b>Continue</b> at the <b>NonGenuine Toner</b> prompt. Install the genuine toner cartridge.
<b>Toner Low Replace Toner</b>	Small amount of toner is left in the cartridge. The estimated cartridge life of toner is close.  If you do not want this message to appear, see "Using Toner Low Alert" on page 61.	Prepare a new cartridge for replacement. You may temporarily increase the printing quality by redistributing the toner. (See "Redistributing toner" on page 64.)

MESSAGE	MEANING	SUGGESTED SOLUTIONS
Replace Toner	A toner cartridge has almost reached its estimated cartridge life.	<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 78.)</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
Toner Exhausted	<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 19752. (See "General specifications" on page 80.) 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>Toner Exhausted</b> appears and the printer stops printing.</p>	Replace the toner cartridge. (See "Replacing the toner cartridge" on page 78.)
Out-Bin Full	The output tray is full.	Remove papers from the output tray, the printer resumes printing.

## 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
Paper jams during printing.	Clear the paper jam. (See "Clearing paper jams" on page 65.)
Paper sticks together.	<ul style="list-style-type: none"><li>• Check the maximum paper capacity of the tray. (See "Print media specifications" on page 82.)</li><li>• Make sure that you are using the correct type of paper. (See "Print media specifications" on page 82.)</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>
Multiple sheets of paper do not feed.	Different types of paper may be stacked in the tray. Load paper of only one type, size, and weight.
Paper does not feed into the machine.	<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 82.)</li></ul>
The paper keeps jamming.	<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 82.)</li><li>• There may be debris inside the machine. Open the front cover and remove any debris.</li></ul>
Transparencies stick together in the paper exit.	Use only transparencies specifically designed for laser printers. Remove each transparency as it exits from the machine.
Envelopes skew or fail to feed correctly.	Ensure that the paper guides are against both sides of the envelopes.

### Printing problems

CONDITION	POSSIBLE CAUSE	SUGGESTED SOLUTIONS
The machine does not print.	The machine is not receiving power.	Check the power cord connections. Check the power switch and the power source.
	The machine is not selected as the default machine.	Select your machine as your default machine in 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 65.)</li><li>• No paper is loaded. Load paper. (See "Loading paper in the tray" on page 38.)</li><li>• The toner cartridge is not installed. Install the toner cartridge.</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 44.)
	The printer driver may be incorrectly installed.	Repair the machine software. (See "Installing USB connected machine's driver" on page 26, "Installing network connected machine's driver" on page 32.)
	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.

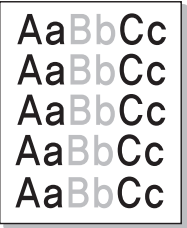
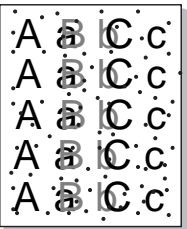
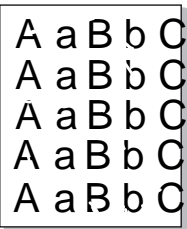
CONDITION	POSSIBLE CAUSE	SUGGESTED SOLUTIONS
<b>The machine does not print.</b>	The document size is so big that the hard disk space of the computer is insufficient to access the print job.	Get more hard disk space and print the document again.
<b>The machine selects print materials from the wrong paper 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 Paper tab within the <b>Printing Preferences</b> . Select the correct paper source. See the printer driver help screen. (See "Opening Printing Preferences" on page 44.)
<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.

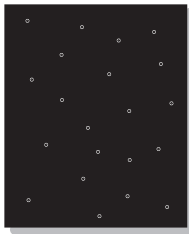
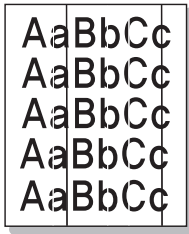
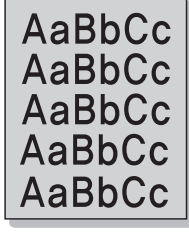
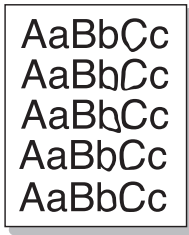
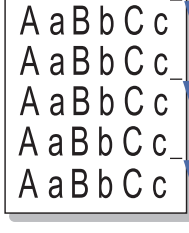
CONDITION	POSSIBLE CAUSE	SUGGESTED SOLUTIONS
<b>The machine prints, but the text is wrong, garbled, or incomplete.</b>	The machine cable is loose or defective.	Disconnect the machine cable and reconnect. Try a print job that you have already printed successfully. If possible, attach the cable and the 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.	See "Changing font setting" on page 36.
<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.

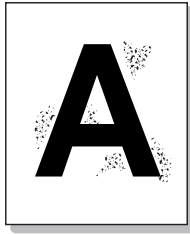
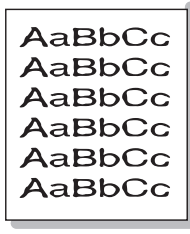
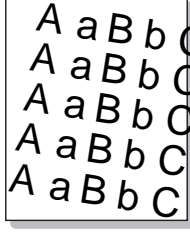
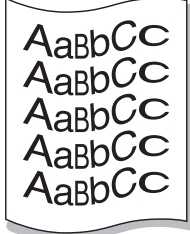
CONDITION	POSSIBLE CAUSE	SUGGESTED SOLUTIONS
The print quality of photos is not good. Images are not clear.	The resolution of the photo is very low.	Reduce the photo size. If you increase the photo size in the software application, the resolution will be reduced.
Before printing, the machine emits vapor near the output tray.	Using damp paper can cause vapor during printing.	This is not a problem. Just keep printing.
The machine does not print special- sized paper, such as billing paper.	Paper size and paper size setting do not match.	Set the correct paper size in the <b>Custom</b> in the <b>Paper</b> tab in the <b>Printing Preferences</b> . (See "Opening Printing Preferences" on page 44.)

### Printing quality problems

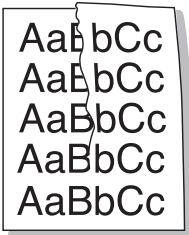
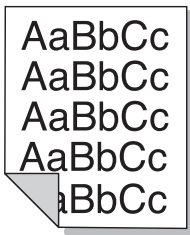
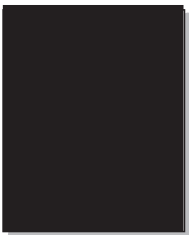
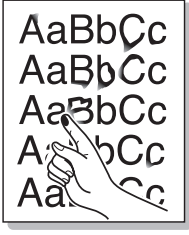
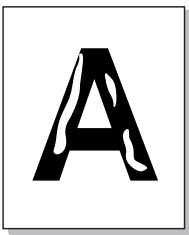
If the inside of the machine is dirty or paper has been loaded improperly, there might be a reduction in print quality. See the table below to clear the problem.

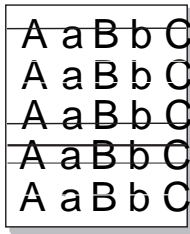
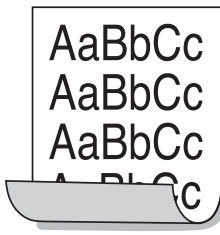
CONDITION	SUGGESTED SOLUTIONS
<p><b>Light or faded print</b></p> 	<ul style="list-style-type: none"> <li>If a vertical white streak or faded area appears on the page, the toner supply is low. You may be able to temporarily extend the toner cartridge life. (See "Redistributing toner" on page 64.) If this does not improve the print quality, install a new toner cart</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 82.)</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 61.)</li> <li>The surface of the LSU part inside the machine may be dirty. (See "Cleaning the inside" on page 61.)</li> </ul>
<p><b>Toner specks</b></p> 	<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 82.)</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>
<p><b>Dropouts</b></p> 	<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 82.)</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 44.)</li> <li>If these steps do not correct the problem, contact a service representative.</li> </ul>

CONDITION	SUGGESTED SOLUTIONS
<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 61.)</li> <li>The paper path may need cleaning. (See "Cleaning the inside" on page 61.)</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 78.)</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 61.)</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 82.)</li> <li>Check the environmental conditions: very dry conditions 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 78.)</li> </ul>
<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 61.)</li> <li>Check the paper type and quality. (See "Print media specifications" on page 82.)</li> <li>Remove the toner cartridge and then, install a new one. (See "Replacing the toner cartridge" on page 78.)</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 78.)</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>

CONDITION	SUGGESTED SOLUTIONS
<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 44.)</li> </ul>
<b>Misformed characters</b> 	<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 82.)</li> </ul>
<b>Page skew</b> 	<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 82.)</li> <li>Ensure that the guides are not too tight or too loose against the paper stack.</li> </ul>
<b>Curl or wave</b> 	<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 82.)</li> <li>Turn the stack of paper over in the tray. Also try rotating the paper 180° in the tray.</li> </ul>



CONDITION	SUGGESTED SOLUTIONS
<b>Wrinkles or creases</b> 	<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 82.)</li> <li>Turn the stack of paper over in the tray. Also try rotating the paper 180° in the tray.</li> </ul>
<b>Back of printouts are dirty</b> 	<p>Check for leaking toner. Clean the inside of the machine. (See "Cleaning the inside" on page 61.)</p>
<b>Solid Color or Black pages</b> 	<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 78.)</li> <li>The machine may require repair. Contact a service representative.</li> </ul>
<b>Loose toner</b> 	<ul style="list-style-type: none"> <li>Clean the inside of the machine. (See "Cleaning the inside" on page 61.)</li> <li>Check the paper type and quality. (See "Print media specifications" on page 82.)</li> <li>Remove the toner cartridge and then, install a new one. (See "Replacing the toner cartridge" on page 78.)</li> <li>If the problem persists, the machine may require repair. Contact a service representative.</li> </ul>
<b>Character Voids</b> 	<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 82.)</li> </ul>

CONDITION	SUGGESTED SOLUTIONS
<b>Horizontal stripes</b> 	<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 78.)</li> <li>If the problem persists, the machine may require repair. Contact a service representative.</li> </ul>
<b>Curl</b> 	<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 44.)</li> <li>Use the <b>Paper Stacking</b> function. (See "Stacking papers firmly" on page 42.)</li> </ul>
<b>An unknown image repetitively appears on a few sheets or loose toner, light print, or contamination occurs.</b>	<p>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 35.)</p>

## 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 USB connected machine's driver" on page 26, "Installing network connected machine's driver" on page 32.)</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 79.)
<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 Settings</b> tab, and set the tray option of the <b>Installable Options</b> section to <b>Installed</b> .


## Common Windows problems

CONDITION	SUGGESTED SOLUTIONS
<b>"File in Use" message appears during installation.</b>	Exit all software applications. Remove all software from the 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 ready mode or after printing has been completed, check the connection and/or whether an error has occurred.


 Refer to Microsoft Windows 2000/XP/2003/Vista 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>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 bugs.ghostscript.com 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 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.

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

Common Macintosh problems

CONDITION	SUGGESTED SOLUTIONS
The machine does not print PDF files correctly. Some parts of graphics, text, or illustrations are missing.	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.
The document has printed, but the print job has not disappeared from the spooler in Mac OS X10.3.2.	Update your MAC OS to OS MAC OS X 10.3.3. or higher.
Some letters are not displayed normally during the Cover page printing.	Mac OS cannot create the font during the Cover page printing. The English alphabet and numbers are displayed normally on the Cover page.
When printing a document in Macintosh with Acrobat Reader 6.0 or higher, colors print incorrectly.	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

 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 <sup>a</sup>	PART NAME
Standard yield toner cartridge	Approx. 2,000 pages	<ul style="list-style-type: none"><li>• MLT-D209S</li><li>• Region A<sup>b</sup>: MLT-D2092S</li></ul>
High yield toner cartridge	Approx. 5,000 pages	<ul style="list-style-type: none"><li>• MLT-D209L</li><li>• Region A<sup>b</sup>: MLT-D2092L</li></ul>

- a. Declared yield value in accordance with ISO/IEC 19752.
- 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 78.)

 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 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.

- Replacing the toner cartridge
- Necessary Precautions to take when installing accessories
- Activating the added accessories in printer properties
- Upgrading a memory module

## AVAILABLE ACCESSORIES

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

ACCESSORY	FUNCTION	PART NAME
Memory module	Extend your machine's memory capacity.	CLP-MEM301: 128 MB
Optional tray 2	If you are experiencing frequent paper supply problems, you can attach an additional 250 sheet tray. You can print documents in various sizes and types of print materials.	ML-S2850A

## 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>	PART NAME
Transfer roller	Approx. 50,000 pages	ROLLER-TRANSFER
Fuser unit	Approx. 50,000 pages	ELA UNIT-FUSER
Pickup roller	Approx. 50,000 pages	ROLLER-PICK UP

- 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.

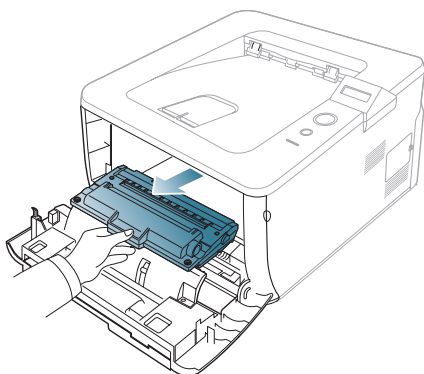
## REPLACING THE TONER CARTRIDGE

When the toner cartridge is empty:

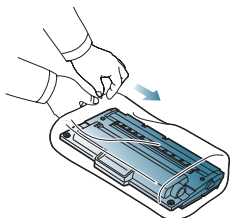
- A message informing user to change the toner cartridge appears on the display.
- The machine stops printing.

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 77.)

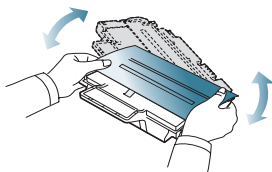
1. Open the front cover.
2. Pull the toner cartridge out.



3. Remove the new toner cartridge from its bag.



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

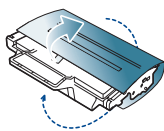


If toner gets on your clothing, wipe it off with a dry cloth and wash clothing in cold water. Hot water sets toner into fabric.



Do not touch the green underside of the toner cartridge. Use the handle on the cartridge to avoid touching this area.

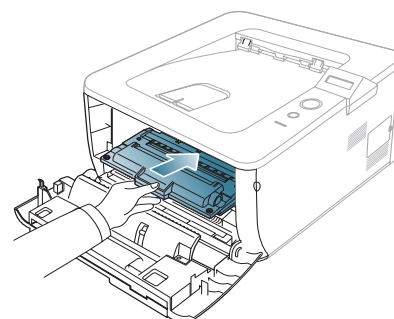
5. Remove the paper protecting the toner cartridge by pulling the packing tape.



6. Hold the toner cartridge by the handle and slowly insert the cartridge into the opening in the machine.

Tabs on the sides of the cartridge and corresponding grooves within the machine will guide the cartridge into the correct position until it locks into

place completely.



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

## 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 USB connected machine's driver" on page 26, "Installing network connected machine's driver" on page 32.)
2. Click the Windows **Start** menu.
  - For Windows 2000, select **Settings > Printers**.
  - For Windows XP/2003, select **Printers and Faxes**.
  - For Windows Vista, select **Control Panel > Hardware and Sound > Printers**.
3. Select the your machine's driver and right-click to open **Properties**.
  - For PS driver, select PS driver and right-click to open **Properties**.
4. In printer driver properties, select **Device Options**.
  - For PS driver, select **Device Settings**.

5. In printer driver properties, set the necessary options.
  - For PS driver, select the **Installable Options** section and set the necessary options.
6. Click **OK**.

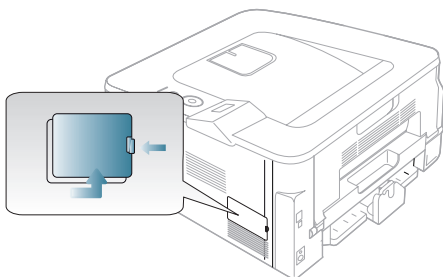
## UPGRADING A MEMORY MODULE

Your machine has a dual in-line memory module (DIMM). Use this memory module slot to install additional memory.

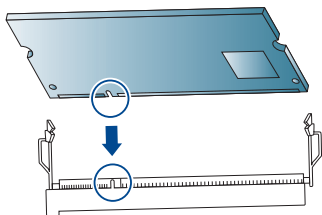
The machine has two memory slots with a factory pre-installed memory module in one slot. When you are expanding the memory capacity, you can add a memory module to the vacant memory slot. It is strongly recommended that you expand a memory module in the vacant memory slot, and not by removing a pre-installed memory module. If your machine has 64 MB memory capacity and you want to add 128 MB, the memory capacity expands up to 192 MB. Order information is provided for additional memory module. (See "Available accessories" on page 77.)


### Installing a memory module

1. Turn the machine off and unplug all cables from the machine.
2. Grasp the control board cover and remove it.

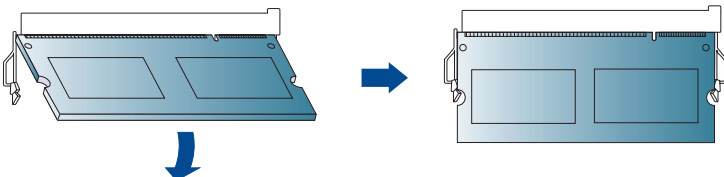



3. Remove the new memory module from its bag.
4. Holding the memory module by the edges, align the memory module on the slot at about a 30-degree tilt. Make sure that the notches of the module and the grooves on the slot fit each other.



 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.

7. Reconnect the power cord and machine cable and turn the machine on.

 If you use the PS driver, you must activate the added memory in the PS driver properties.


# specifications

This chapter guides you about this machine’s specifications such as various features.

This chapter include:

- General specifications
- Printer specifications
- Print media specifications

## GENERAL SPECIFICATIONS

 The symbol \* optional feature depending on machines.

ITEM	DESCRIPTION
Paper input capacity	<ul style="list-style-type: none"><li>• <b>Tray:</b> 250 sheets for plain paper, 80 g/m<sup>2</sup> (20 lb bond)</li><li>• <b>Multi-purpose tray:</b> 50 sheets for plain paper, 75 g/m<sup>2</sup> (20 lb bond)</li><li>• <b>Optional tray:</b> 250 sheets for plain paper, 80 g/m<sup>2</sup> (20 lb bond)</li></ul> ( See "Print media specifications" on page 82.)
Paper output capacity	Face down: 150 sheets 75 g/m <sup>2</sup> (20 lb bond)
Power rating	AC 110 - 127 V or AC 220 - 240 V See the Rating label on the machine for the correct voltage, frequency (hertz) and type of current for your machine.
Power consumption	<ul style="list-style-type: none"><li>• <b>Average operating mode:</b> Less than 400 W</li><li>• <b>Ready mode:</b> Less than 60 W</li><li>• <b>Power Save mode:</b> Less than 8 W</li><li>• <b>Power off mode:</b> Less than 0.4 W</li></ul>
Noise Level <sup>a</sup>	<ul style="list-style-type: none"><li>• <b>Ready mode:</b> 26 dB(A)</li><li>• <b>Printing mode:</b> 50 dB(A)</li></ul>
Default time to power save mode from ready mode	15 Minutes
Boot-up time <sup>b</sup>	Less than 20 seconds
Operating environment	Temperature: 10 to 32 °C (50 to 90 °F) Humidity: 20 to 80% RH
Display	16 characters x 2 lines
Toner cartridge life <sup>c</sup>	2,000 pages <sup>d</sup> (shipped with the machine)
Memory (Expendable)*	64 MB (max.192 MB) Use only the Samsung-approved DIMM.
External dimension (W x D x H)	480 x 582 x 344 mm (18.90 x 22.91 x 13.54 inches) without optional tray
Weight (Including consumables)	9.7 Kg (21.38 lbs)
Package weight	Paper: 1.46 Kg (3.22lbs) Plastic: 0.36 Kg (0.80lbs)
Duty cycle	Up to 50,000 pages (Monthly)
Fusing temperature	180 °C (356 °F)

- a. Sound Pressure Level, ISO 7779. Configuration tested: machine basic installation, A4 paper, simplex printing.
- b. Boot-up time is the time that takes from the power switch on to the ready mode.
- c. Declared yield value in accordance with ISO/IEC 19752. The number of pages may be affected by operating environment, printing interval, media type, and media size.
- d. It varies depending on the product configuration.

PRINTER SPECIFICATIONS

ITEM	DESCRIPTION
Printing method	Laser beam printing
Printing speed <sup>a</sup>	Up to 28 ppm (A4), 30 ppm (Letter)
Duplex printing speed	Up to 14 ipm (A4), 14 ipm (Letter)
First print out time	8.5 seconds (from ready)
Print resolution	Up to 1,200 x 1,200 dpi effective output
Printer language	PostScript 3, PCL6, IBM ProPrinter, EPSON, SPL
OS compatibility <sup>b</sup>	<ul style="list-style-type: none"><li>• Windows: 2000/XP/2003/Vista</li><li>• Various Linux OS ( See "Linux" on page 26.)</li><li>• Macintosh: Mac OS 8.6~9.2, Mac OS X 10.1~10.5</li></ul>
Interface	<ul style="list-style-type: none"><li>• High speed USB 2.0</li><li>• Ethernet 10/100 Base TX (embedded type)</li></ul>

- a. It will be affected by operating system used, computing performance, application software, connecting method, media type, media size and job complexity.
- b. Visit [www.samsungprinter.com](http://www.samsungprinter.com) to download the latest software version.



PRINT MEDIA SPECIFICATIONS

TYPE	SIZE	DIMENSIONS	PRINT MEDIA WEIGHT <sup>a</sup> /CAPACITY <sup>b</sup>	
			TRAY1 / OPTIONAL TRAY	MULTIPURPOSE TRAY
Plain paper	Letter	216 x 279 mm (8.5 x 11 inches)	60 to 90 g/m <sup>2</sup> (16 to 24 lb bond) • 250 sheets of 80g/m <sup>2</sup> (20 lb bond)	60 to 163 g/m <sup>2</sup> (16 to 43 lb bond) • 50 sheets of 75 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 (8.26 x 11.69 inches)		
	Oficio	216 x 343 mm (8.5 x 13.5 inches)		
	JIS B5	182 x 257 mm (7.16 x 10.11 inches)	60 to 90 g/m <sup>2</sup> (16 to 24 lb bond) • 150 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 (5.82 x 8.26 inches)		
	Statement	140 x 216 mm (5.5 x 8.5 inches)	Not available in tray1/optional tray.	
	A6	105 x 148 mm (4.13 x 5.82 inches)		
Envelope	Envelope Monarch	98 x 191 mm (3.87 x 7.5 inches)	Not available in tray1/optional tray.	75 to 90 g/m <sup>2</sup> (20 to 24 lb bond) • 5 sheets stacking
	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 (6.37 x 9.01 inches)		
	Envelope C6	114 x 162 mm (4.48 x 6.38 inches)		
Thick paper	Refer to the Plain paper section	Refer to the Plain paper section		90 to 105 g/m <sup>2</sup> (24 to 28 lb bond) • 20 sheets stacking
Thin paper	Refer to the Plain paper section	Refer to the Plain paper section	60 to 70 g/m <sup>2</sup> (16 to 19 lb bond) • 250 sheets stacking	60 to 70 g/m <sup>2</sup> (16 to 19 lb bond) • 250 sheets stacking
Transparency	Refer to the Plain paper section	Refer to the Plain paper section		138 to 146 g/m <sup>2</sup> (36.81 to 38.91 lb bond) • 1 sheets stacking
Labels <sup>c</sup>	Letter, Legal, US Folio, A4, JIS B5, ISO B5, Executive, A5, Statement	Refer to the Plain paper section		120 to 150 g/m <sup>2</sup> (32 to 40 lb bond) • 5 sheets stacking
Card stock	Letter, Legal, US Folio, A4, JIS B5, ISO B5, Executive, A5, Statement	Refer to the Plain paper section		105 to 163 g/m <sup>2</sup> ( 28 to 43lb bond) • 5 sheets stacking
Minimum size (custom)		76 x 127 mm (2.99 x 5 inches)	60 to 163 g/m <sup>2</sup> (16 to 43 lb bond)	
Maximum size (custom)		216 x 356 mm (8.5 x 14 inches)		

a. If media weight is over 105 g/m<sup>2</sup> (28 lb bond), load a paper into the tray one by one.

b. Maximum capacity may differ depending on media weight, thickness, and environmental conditions.

c. Smoothness: 100 to 250 (sheffield)

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# glossary

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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**

802.11b/g can share same hardware and use the 2.4 GHz band. 802.11b supports bandwidth up to 11 Mbps; 802.11g up to 54 Mbps. 802.11b/g 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 mechanism 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 pseudo standard throughout the industry, even among non-Microsoft platforms.

## **DADF**

A Duplex Automatic Document Feeder (DADF) is a mechanism that will automatically feed and flip 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.

## **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 flip 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 can print double-sided of paper.

## **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 melts the toner onto the print media. It consists of a hot roller and a back-up 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 gray colored and a cylinder shaped.

An exposing unit of a drum is slowly worn away by its usage of the printer, and it should be replaced appropriately since it gets scratches from grits of a 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, matrix printer, and page 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 on 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 within a machine like 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 melted by the heat of 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.; 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.

## A

- accessories
  - installing 78
  - ordering 77
- adjusting
  - tray size 35
- AppleTalk protocol 55

## B

- booklet printing 45
- booklets 45

## C

- cleaning
  - inside 61
  - outside 61
- cleaning a machine 61
- control panel 23
- convention 17

## D

- default settings
  - tray setting 41
- display screen 23
- duplex printing
  - print 45, 51

## E

- error message 67

## F

- favorites settings, for printing 44
- features 19
  - machine features 53, 80
  - PostScript driver 43
  - power saving feature 35, 82, 43
  - supplied software 25
- font setting 36
- front view 21

## G

- general settings 53, 54, 55
- glossary 85

## I

- information 7

## J

- jam
  - clearing paper 65
  - tips for avoiding paper jams 65
- job timeout setting 35

## L

- language 35
- LCD display
  - browsing the machine status 53
  - changing the display language 35

## Linux

- common Linux problems 75
- driver installation for network connected 34, 28
- printer properties 50, 49
- supplied softwares 25, 26
- unified driver configurator 58

## loading

- paper in multi-purpose tray 38
- special media 39

## M

- machine information 53
- machine setup
  - machine status 53
- Macintosh
  - common Macintosh problems 76
  - driver installation for network connected 32, 27
  - printing 48
  - sharing a machine locally 29, 25, 26
  - using setip program 58
- maintenance parts 77
- memory

- installing memory module 79
- memory upgrading 79

## multi-purpose tray

- loading 38
- tips on using 38
- using special media 39

## N

### network

- configuring TCP/IP 31
- driver installation
  - Linux 34
  - Macintosh 32
  - Windows 32
- general setup 55
- installing environment 31
- SetIP program 57
- setting up 31

### N-up printing

- Macintosh 49
- Windows 44

## O

- optional tray 77
  - loading paper 38
  - ordering 77
- output support 42
- overlay printing
  - create 47
  - delete 47
  - print 47

## P

- placing a machine 25
  - adjusting the altitude 35
  - spacing 25
- poster, print 45
- PostScript driver
  - features 43
  - troubleshooting 74
- power saver
  - using power save mode 35
- print media
  - card stock 41
  - envelope 40

- glossy paper 41, 37
- labels 40, 41
- output support 82
- photo paper 41
- setting the default tray and paper
  - in the computer 36, 35
  - 41, 39
- transparency 40
- print resolution set
  - Linux 50
- print resolution, set
  - Macintosh 48
- printer driver
  - features 43
- printer properties
  - Linux 50
  - opening printer properties 51
- printing
  - changing the default print Settings 47, 45
  - fitting your document to a selected paper
    - size 46
  - Linux 49
  - Macintosh 48
  - multiple pages on one sheet of paper
    - Macintosh 49
    - Windows 44
  - poster 45
    - Windows 43
    - Macintosh 49
    - Windows 45, 51
  - 47
  - using overlay 46
- printing a document
  - Linux 49
  - Macintosh 48
- problems
  - paper feeding problems 70, 72

## R

- rear view 22
- regulatory information 11
- reports
  - machine information 53, 54
  - network MAC address 58

## S

- safety
  - information 7
  - symbols 7
- service center registration
  - network connected machine 32
  - usb cable-connected machine 27

- service contact numbers 83

- SetIP program 57

- Smart Panel
  - font setting 36
  - general information 57

- specifications
  - general 80
  - print media 82, 81

- stop button 23

- supplies
  - available supplies 77
  - estimated toner cartridge life 63
  - monitoring the supplies life 61
  - ordering 77
  - replacing toner cartridge 78

- SyncThru™ Web Service
  - general information 56

## T

- TCP/IP protocol 31

- toner cartridge
  - estimated life 63, 80
  - handling instructions 62
  - non-Samsung and refilled 62
  - redistributing toner 64, 78
  - storing 62

- tray
  - adjusting the width and length 37
  - changing the tray size 37
  - loading paper in multi-purpose tray 38
  - ordering an optional tray 77
  - setting the paper size and type 41

## U

- understanding the control panel 24
  - menu button 24
  - status LED 24

- USB cable
  - driver installation 26

- using setip program
  - Linux 58
  - Macintosh 58
  - Windows 58

## W

- watermark
  - create 46
  - delete 46
  - edit 46
  - print 46

- Windows

- common Windows problems 75
- driver installation for network connected
  - 32, 26
- printing 43
- sharing a machine locally 29, 25, 26
- using SetIP 57, 58