

ML-1640 Series
ML-2240 Series

Mono Laser Printer User's Guide

imagine the possibilities

Thank you for purchasing a Samsung product.



features of your new laser product

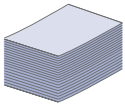
Your new machine is equipped with a number of special features that improve the quality of the documents you print. With the machine, you can:

SPECIAL FEATURES



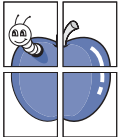
Print with excellent quality and speed

- You can print with a resolution of up to 1200*600 dpi.
- Your machine prints A4-sized paper at up to 16 ppm,(ML-1640 series), 22 ppm (ML-2240 series) and lettersized paper at up to 17ppm (ML-1640 series), 23ppm(ML-2240 series).



Handle many different types of printable material

- The 150-sheet tray supports plain paper in various sizes, letterhead, envelopes, labels, custom-sized media, postcards, and heavy paper.



Create professional documents

- Print watermarks. You can customize your documents with words, such as “Confidential”. See Software section.
- 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 Software section.
- You can use preprinted forms and letterhead with plain paper. See Software section.



Save time and money

- To save paper, you can print multiple pages on one single sheet of paper.
- This machine automatically conserves electricity by substantially reducing power consumption when not in use.



Print in various environments

- You can print with various operating system such as Windows, Linux and Macintosh systems.
- Your machine is equipped with a USB interface.

FEATURES BY MODELS

The machine is designed to support all of your document needs.
Basic features of this machine include;

| FEATURES | ML-1640 | ML-2240 |
|------------------------------------|---------|---------|
| USB 2.0 Full speed | ● | ● |
| Duplex (2-sided) printing (Manual) | ● | ● |

(●: Included)



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 the actual usage. Both novice users and professional users can refer to this guide for installing and using the machine.

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

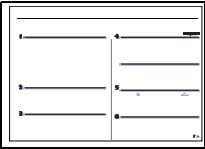
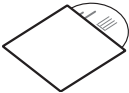

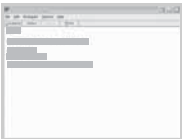
- Document is synonymous with original.
- Paper is synonymous with media, or print media.
- The explanation in this user guide is mainly based on **ML-2240 Series**. Some illustrations might be different for **ML-1640 Series**.

Following table offers the conventions of this guide:

| CONVENTION | DESCRIPTION | EXAMPLE |
|--|---|--|
| Bold | Used for texts on the display or actual prints on the machine. | Start |
| Note | Used to provide additional information or detailed specification of the machine function and feature. |  The date format may differ from country to country |
| Caution | Used to give users information to protect the machine from possible mechanical damage or malfunction. |  Do not touch the green underside of the toner cartridge. |
| Footnote | Used to provide more detailed information on certain words or a phrase. | a. pages per minute |
| (See page 1 for more information) | Used to guide users to the reference page for the additional detailed information. | (See page 1 for more information) |

FINDING MORE INFORMATION

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

| | |
|---|--|
| Quick Install Guide  | Provides information on setting up your machine and this requires that you follow the instructions in the guide to prepare the machine. |
| Online User's Guide  | <p>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.</p> <p>This user's guide also contains a <i>Software section</i> to provide you with information on how to print documents with your machine in various operating systems, and how to use the included software utilities.</p> <p> You can access the user's guide in other languages from the Manual folder on the printer software CD.</p> |
| Printer Driver Help  | Provides you with help information on printer driver properties and instructions for setting up the properties for printing. To access a printer driver help screen, click Help from the printer properties dialog box. |
| Samsung website | If you have Internet access, you can get help, support, printer drivers, manuals, and order information from the Samsung website, www.samsungprinter.com . |













Please visit www.samsung.com for open source information.









safety information

IMPORTANT SAFETY SYMBOLS AND PRECAUTIONS

What the icons and signs in this user’s guide mean:

| | |
|--|---|
|  WARNING | Hazards or unsafe practices that may result in severe personal injury or death. |
|  CAUTION | Hazards or unsafe practices that may result in minor personal injury or property damage. |
|  CAUTION | To reduce the risk of fire, explosion, electric shock, or personal injury when using your laser MFP, follow these basic safety precautions: |
|  | Do NOT attempt. |
|  | Do NOT disassemble. |
|  | Do NOT touch. |
|  | Follow directions explicitly. |
|  | Unplug the power plug from the wall socket. |
|  | Make sure the MFP is grounded to prevent electric shock. |
|  | Call the service center for help. |

These warning signs are here to prevent injury to you and others. Follow them explicitly. After reading this section, keep it in a safe place for future reference.

- 
 1. Read and understand all instructions.
 2. Use common sense whenever operating electrical appliances.
 3. Follow all warnings and instructions marked on the machine and in the literature accompanying the machine.
- 
 4. If an operating instruction appears to conflict with safety information, heed the safety information. You may have misunderstood the operating instruction. If you cannot resolve the conflict, contact your sales or service representative for assistance.
- 
 5. Unplug the machine from the AC wall socket before cleaning. Do not use liquid or aerosol cleaners. Use only a damp cloth for cleaning.
- 
 6. Do not place the machine on an unstable cart, stand or table. It may fall, causing serious damage.
 7. Your machine should never be placed on, near or over a radiator, heater, air conditioner or ventilation duct.
 8. Do not allow anything to rest on the power cable. Do not locate your machine where the cords will be abused by persons walking on them.
- 
 9. Do not overload wall outlets and extension cords. This can diminish performance, and may result in the risk of fire or electric shock.
 10. Do not allow pets to chew on the AC power or PC interface cords.
 11. Never push objects of any kind into the machine through case or cabinet openings. They may touch dangerous voltage points, creating a risk of fire or shock. Never spill liquid of any kind onto or into the machine.
- 

 12. To reduce the risk of electric shock, do not disassemble the machine. Take it to a qualified service technician when repair work is required. Opening or removing covers may expose you to dangerous voltages or other risks. Incorrect reassembly could cause electric shock when the unit is subsequently used.



13. Unplug the machine from the PC and AC wall outlet, and refer servicing to qualified service personnel under the following conditions:
- When any part of the power cord, plug, or connecting cable is damaged or frayed.
 - If liquid has been spilled into the machine.
 - If the machine has been exposed to rain or water.
 - If the machine does not operate properly after instructions have been followed.
 - If the machine has been dropped, or the cabinet appears damaged.
 - If the machine exhibits a sudden and distinct change in performance.



14. Adjust only those controls covered by the operating instructions. Improper adjustment of other controls may result in damage, and may require extensive work by a qualified service technician to restore the machine to normal operation.



15. Avoid using this machine during a lightning storm. There may be a remote risk of electric shock from lightning. If possible, unplug the AC power for the duration of the lightning storm.

16. If you continuously print multiple pages, the surface of the output tray may become hot. Be careful not to touch the surface, and keep children away from the surface.

17. The Power cord supplied with your machine should be used for safe operation. If you are using a cord which is longer than 2 m with 110 V machine, then it should be 16 AWG^a or bigger.



18. SAVE THESE INSTRUCTIONS

19. This machine can be operated only in the country you have purchased. (Due to different voltage, frequency, telecommunication configuration and etc)

a. AWG: American Wire Gauge

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 LASERSÄTEILYÄ 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.

RECYCLING



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

CORRECT DISPOSAL OF THIS PRODUCT (WASTE ELECTRICAL & ELECTRONIC EQUIPMENT)



(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

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.

REPLACING THE FITTED PLUG (FOR UK ONLY)

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.

Contact the people from you purchased the machine.

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)



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:

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

January 1, 1995: Council Directive 73/23/EEC Approximation of the laws of the member states related to low voltage equipment.

January 1, 1996: Council Directive 89/336/EEC (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.

| | | |
|--|-----------|---|
| | 2 | Features of your new laser product |
| | 5 | Safety information |
| INTRODUCTION | 11 | Printer overview |
| | 11 | Front view |
| | 11 | Rear view |
| | 12 | Control panel overview |
| | 13 | Understanding the control panel |
| | 13 | On-Line/Error LED |
| | 13 | Cancel button |
| | 14 | Supplied software |
| | 14 | Printer driver features |
| | 14 | Printer driver |
| GETTING STARTED | 15 | Setting up the hardware |
| | 15 | Printing a demo page |
| | 16 | System requirements |
| | 16 | Windows |
| | 16 | Macintosh |
| | 17 | Installing the software |
| SELECTING AND LOADING PRINT MEDIA | 18 | Selecting print media |
| | 19 | Specifications on print media |
| | 20 | Guidelines for special print media |
| | 21 | Loading paper |
| | 21 | Loading paper in the tray |
| | 22 | Printing on special print medias |
| | 23 | Setting the paper size and type |
| BASIC PRINTING | 24 | Printing a document |
| | 24 | Canceling a print job |
| MAINTENANCE | 25 | Cleaning your machine |
| | 25 | Cleaning the outside |
| | 25 | Cleaning the inside |
| | 27 | Maintaining the cartridge |
| | 27 | Toner cartridge storage |
| | 27 | Handling instructions |
| | 27 | Use of non-Samsung and refilled toner cartridge |
| | 27 | Estimated cartridge life |
| | 27 | Redistributing toner |
| | 28 | Replacing the toner cartridge |
| TROUBLESHOOTING | 30 | Tips for avoiding paper jams |
| | 30 | Clearing paper jams |
| | 30 | In the paper exit area |
| | 31 | In the paper feed area |
| | 32 | Around the toner cartridge |
| | 32 | Solving other problems |
| | 32 | Paper feeding |

| | | |
|--|----|---------------------------|
| | 33 | Printing problems |
| | 35 | Printing quality problems |
| | 37 | Common Windows problems |
| | 37 | Common Linux problems |
| | 38 | Common Macintosh problems |

| | | |
|--|-----------|--------------------------|
| ORDERING SUPPLIES AND ACCESSORIES | 39 | Supply |
| | 39 | Maintenance parts |
| | 39 | How to purchase |

| | | |
|-----------------------|-----------|--------------------------------------|
| SPECIFICATIONS | 40 | ML-1640 Series specifications |
| | 41 | ML-2240 Series Specifications |

| | |
|-----------------|-----------|
| GLOSSARY | 42 |
|-----------------|-----------|

| | |
|--------------|-----------|
| INDEX | 46 |
|--------------|-----------|

introduction

These are the main components of your machine:

This chapter includes:

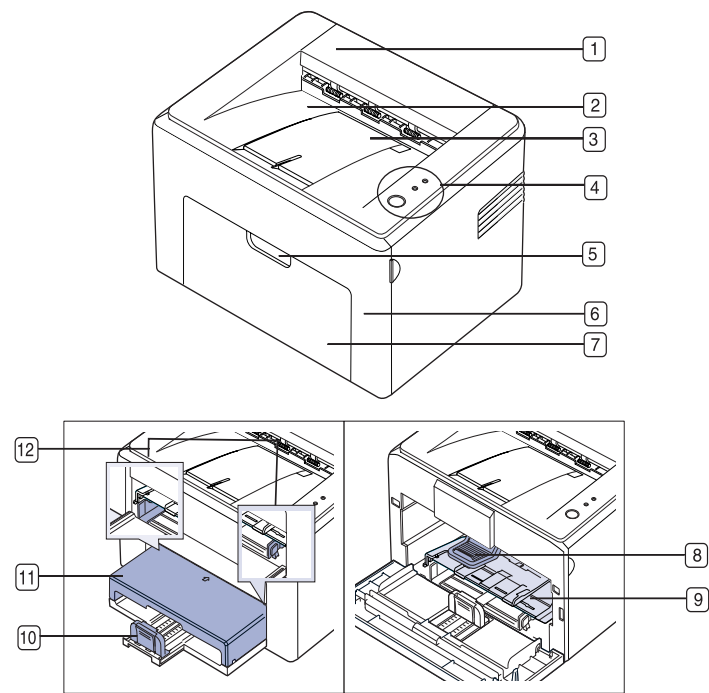
- Printer overview
- Control panel overview
- Understanding the control panel
- Supplied software
- Printer driver features



The illustrations of the machine are based on ML-2240 series. ML-1640 series does not have a manual tray.

PRINTER OVERVIEW

Front view

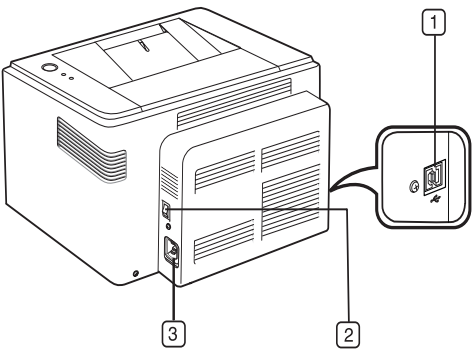


| | |
|---|-------------------------|
| 1 | Top cover |
| 2 | Output tray (face down) |
| 3 | Output support |
| 4 | Control panel |
| 5 | Front cover handle |
| 6 | Front cover |
| 7 | Paper input tray |
| 8 | Toner cartridge |

| | |
|----|--------------------------|
| 9 | Manual tray ^a |
| 10 | Rear guides |
| 11 | Paper cover ^a |
| 12 | Side guides |

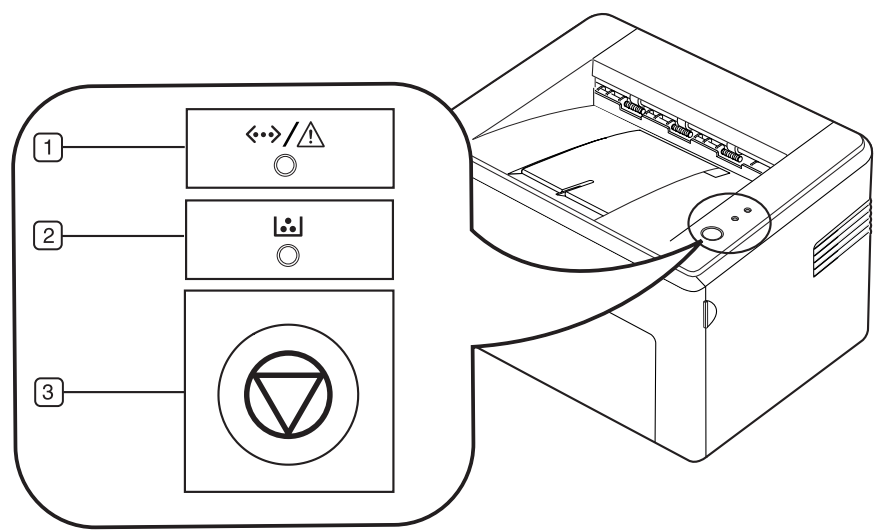
a. ML-2240 only.

Rear view



| | |
|---|------------------|
| 1 | USB port |
| 2 | Power switch |
| 3 | Power receptacle |

CONTROL PANEL OVERVIEW



| | | |
|---|--------------------------|---|
| 1 | On-Line/Error LED | Shows the status of your machine. (See "Understanding the control panel" on page 13 for more information.) |
| 2 | Toner LED | Shows the status of the toner cartridge. (See "Understanding the control panel" on page 13 for more information.) |
| 3 | Cancel | Stops an operation at any time and there are more functions. (See "Understanding the control panel" on page 13 for more information.) |

UNDERSTANDING THE CONTROL PANEL

The color of the On-Line/Error LED and toner LED indicates the machine's current status.

On-Line/Error LED

| STATUS | | DESCRIPTION |
|--------|----------|--|
| Green | On | The machine is warming up or ready to receive the data. |
| | Blinking | The machine is printing data. |
| Red | On | <ul style="list-style-type: none">The machine is experiencing an error, such as open cover, paper empty, installer error, or invalid error.The machine is experiencing a service required error, such as LSU error, or fuser error. Contact your sales or service representative. |
| Orange | On | The machine is experiencing an error such as jammed paper. |

Toner LED

| STATUS | | DESCRIPTION |
|--------|------------------|---|
| Red | On | A toner cartridge has reached its estimated cartridge life. The printer stops printing. Replace the toner cartridge. (See "Replacing the toner cartridge" on page 28.) |
| | Blinking | Small amount of toner is left in the cartridge. The estimated cartridge life of toner is close. Prepare a new cartridge for replacement. You may temporarily increase the printing quality by redistributing the toner. (See "Redistributing toner" on page 27) |
| | Rapidly blinking | A toner cartridge has almost reached its estimated cartridge life. Replace the toner cartridge. (See "Replacing the toner cartridge" on page 28.) |



All printing errors will be appear in the **Smart Panel** program window.



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 "Specifications" on page 40.) 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 the red LED turned on and the printer stops printing.



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.

Cancel button

| STATUS | DESCRIPTION |
|---------------------|--|
| Printing demo page | In ready mode, press and hold this button until the On-Line/Error LED blinks, and release. |
| Canceling print job | Press this 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 this button during printing. The On Line/Error LED blinks while the print job is cleared from both the machine and the computer, and then return to ready mode. This may take some time depending on the size of the print job. In Manual Feed mode, you can't cancel the print job by pressing this button. |

SUPPLIED SOFTWARE

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

| OS | CONTENTS |
|-----------|--|
| Windows | <ul style="list-style-type: none">• Printer driver: Use this driver to take full advantage of your printer's features.• Smart Panel: This program allows you to monitor the machine's status and alerts you when an error occurs during printing. |
| Linux | <ul style="list-style-type: none">• Printer driver: Use this driver to run your machine from a Linux computer and print documents.• Smart Panel: This program allows you to monitor the machine's status and alerts you when an error occurs during printing. |
| Macintosh | <ul style="list-style-type: none">• Printer driver: Use this driver to run your machine from a Macintosh computer and print documents.• Smart Panel: This program allows you to monitor the machine's status and alerts you when an error occurs during printing. |

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:

Printer driver

| FEATURE | WINDOWS | LINUX | MACINTOSH |
|---------------------------------|---------|---------|----------------|
| Machine quality option | O | O | O |
| Poster printing | O | X | X |
| Multiple pages per sheet (N-up) | O | O (2,4) | O |
| Fit to page printing | O | X | O ^a |
| Scale printing | O | X | O |
| Watermark | O | X | X |
| Overlay | O | X | X |
| Toner Save | O | X | O |
| Duplex (Manual) | O | X | X |

a. This feature is supported only in MAC OS X 10.4~10.6

getting started

This chapter gives you step-by-step instructions for setting up the machine.

This chapter includes:

- Setting up the hardware
- Printing a demo page
- System requirements
- Installing the software

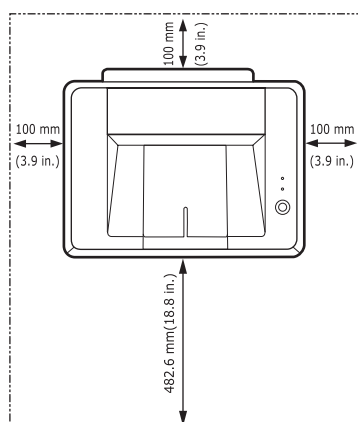
SETTING UP THE HARDWARE

This section shows the steps to set up the hardware which is explained in the *Quick Install Guide*. Make sure you read *Quick Install Guide* and complete the following steps.

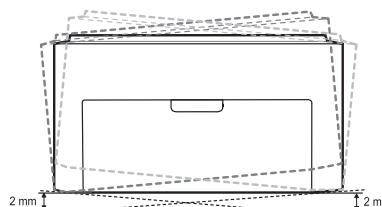
1. Select a stable location.

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. Place the machine on a flat and stable surface, not letting it lean more than 2 mm (0.08 inches). Otherwise, it may affect the printing quality.



2. Unpack the machine and check all the enclosed items.
3. Remove the tape holding the machine tightly.
4. Install all four of the toner cartridge.
5. Load paper. (See "Loading paper" on page 21.)
6. Make sure that all the cables are connected to the machine.

7. Turn the machine on.



When you move 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. This equipment will be inoperable when mains power fails.

PRINTING A DEMO PAGE

Print a demo page to make sure that the machine is operating correctly. To print a demo page:

In ready mode, press and hold the  **Cancel** button for about 2 seconds.


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 (256 MB) | 300 MB |
| Windows XP | Pentium III 933 MHz (Pentium IV 1 GHz) | 128 MB (256 MB) | 1GB |
| Windows Server 2003 | Pentium III 933 MHz (Pentium IV 1 GHz) | 128 MB (512 MB) | 1.25 GB to 2 GB |
| Windows Server 2008 | Pentium IV 1 GHz (Pentium IV 2 GHz) | 512 MB (2048 MB) | 10 GB |
| Windows Vista | Pentium IV 3 GHz | 512 MB (1024 MB) | 15 GB |
| Windows 7 | Pentium IV 1 GHz 32-bit or 64-bit processor or higher | 1 GB (2 GB) | 16 GB |
| | <ul style="list-style-type: none">Support for DirectX 9 graphics with 128 MB memory(to enable the Aero theme).DVD-R/W Drive | | |
| Windows Server 2008 R2 | Pentium IV 1 GHz(x86) or 1.4GHz(x64) processors(2GHz or faster) | 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.

Macintosh


| OPERATING SYSTEM | REQUIREMENT (RECOMMENDED) | | |
|------------------------|---|---|----------------|
| | CPU | RAM | FREE HDD SPACE |
| Mac OS X 10.4 or lower | <ul style="list-style-type: none">Power PC G4/G5Intel processors | <ul style="list-style-type: none">128 MB for a Power PC based Mac (512 MB)512 MB for an Intel based Mac (1 GB) | 1 GB |
| Mac OS X 10.5 | <ul style="list-style-type: none">867MHz or faster Power PC G4 /G5Intel processors | 512 MB (1 GB) | 1 GB |
| Mac OS X 10.6 | <ul style="list-style-type: none">Intel processors | 1 GB (2 GB) | 1 GB |

Linux

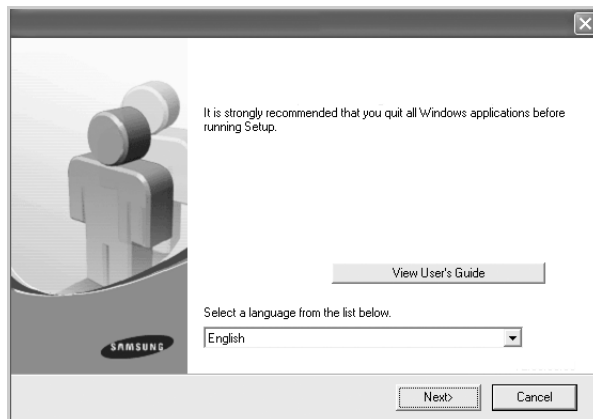
| ITEM | REQUIREMENTS |
|------------------|--|
| Operating system | <ul style="list-style-type: none">RedHat 8.0, 9.0 (32bit)RedHat Enterprise Linux WS 4, 5 (32/64bit)Fedora Core 1~7 (32/64bit)Mandrake 9.2 (32bit), 10.0, 10.1 (32/64bit)Mandriva 2005, 2006, 2007 (32/64bit)SuSE Linux 8.2, 9.0, 9.1 (32bit)SuSE 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 2.4 GHz (IntelCore2) |
| RAM | 512 MB (1024MB) |
| Free HDD space | 1 GB (2GB) |

INSTALLING THE SOFTWARE

You have to install the machine software for printing. The software includes drivers, applications, and other user friendly programs.

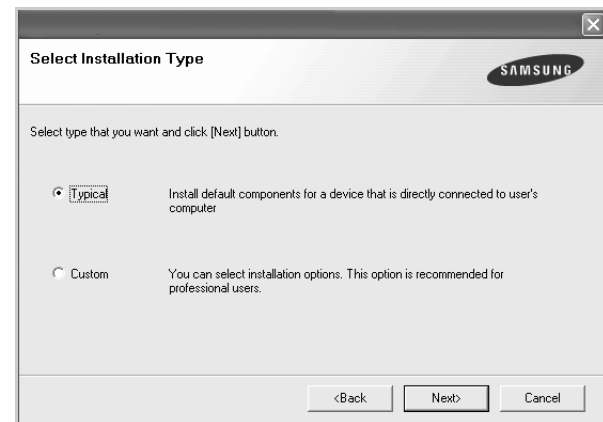
 The following procedure is based on the Windows XP operating system. The procedure and popup window which appear during the installation may differ depending on the operating system, the printer feature, or the interface in use.

1. Make sure that your machine is connected to the computer.
2. Insert the Printer Software CD-ROM into your CD-ROM drive. The CD-ROM should automatically run, and an installation window appears. If the installation window does not appear, click **Start > Run**. Type **X:\Setup.exe**, replacing "X" with the letter which represents your drive and click **OK**. If you use Windows Vista, Windows 7 and Windows 2008 Server R2 click **Start > All Programs > Accessories > Run**, and type **X:\Setup.exe**. If the **AutoPlay** window appears in Windows Vista, Windows 7 and Windows 2008 Server R2 click **Run Setup.exe** in **Install or run program** field, and click **Continue** in the **User Account Control** window.
3. Click **Next**.




- The window above may slightly differ, if you are reinstalling the driver.
- **View User's Guide:** Allows you to view the User's Guide. If your computer does not have Adobe Acrobat, clicking on this button will automatically install Adobe Acrobat Reader for you, and then open the User's Guide.

4. Select **Typical**, and then click **Next**.



5. After the installation is finished, a window appears asking you to print a test page and to register yourself as a user of Samsung machines in order to receive information from Samsung. If you desire, select the corresponding checkbox(es) and click **Finish**.

-  • If your machine does not work properly after the installation, try to reinstall the printer driver. See *Software section*.
- During the printer driver installation process, the driver installer detects the location information for your operating system and sets the default paper size for your machine. If you use a different Windows location, you must change the paper size to match the paper you usually use. Go to printer properties to change the paper size after installation is complete.

selecting and loading print media

This chapter introduces you how to load originals and print media into your machine.

This chapter includes:

- Selecting print media
- Loading paper
- Printing on special print medias
- Setting the paper size and type



The illustrations of the machine are based on ML-2240 series. ML-1640 series does not have a manual 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 meets the guidelines for use with your machine. 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 later in this section.
- 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 Samsung has no control.
- Before purchasing large quantities of print media, ensure that it meets the requirements specified in this user's guide.



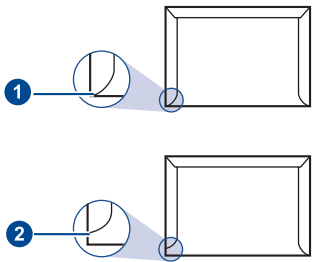
Using print media that does not meet these specifications may cause problems, requiring repairs. Such repairs are not covered by Samsung's warranty or service agreements.

Specifications on print media

| TYPE | SIZE | DIMENSIONS | WEIGHT ^A | CAPACITY ^B |
|-----------------------|----------------------------------|------------------------------------|--|---|
| Plain paper | Letter | 216 x 279 mm (8.5 x 11 inches) | <ul style="list-style-type: none">• 60 to 90 g/m² (16 to 24 lb bond) for the tray• 60~165 g/m² (16 to 40 lb bond) for manual feeding in the try | <ul style="list-style-type: none">• 150 sheets of 75 g/m² (20 lb bond) paper for the tray• 1 sheet for manual feeding in the tray |
| | Legal | 216 x 356 mm (8.5 x 14 inches) | | |
| | 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) | | |
| | 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) | | |
| | A6 | 105 x 148 mm (4.13 x 5.82 inches) | | |
| Envelope | Monarch | 98 x 191 mm (3.87 x 7.5 inches) | 75 to 90 g/m ² (20 to 24 lb bond) | 1 sheet for manual feeding in the tray |
| | No. 10 | 105 x 241 mm (4.12 x 9.5 inches) | | |
| | DL | 110 x 220 mm (4.33 x 8.66 inches) | | |
| | C5 | 162 x 229 mm (6.37 x 9.01 inches) | | |
| | 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 ² (24 to 28 lb bond) | |
| Labels ^c | Letter, A4 | Refer to the Plain paper section | 120 to 150 g/m ² (32 to 40 lb bond) | |
| Transparency | Letter, A4 | Refer to the Plain paper section | 138 to 146 g/m ² (37 to 39 lb bond) | |
| Card stock | Post card | 101.6 x 152.4 mm (4 x 6 inches) | 90 to 163 g/m ² (24 to 40 lb bond) | |
| Minimum size (custom) | | 76 x 127 mm (3 x 5 inches) | 60 to 165 g/m ² (16 to 40 lb bond) | |
| Maximum size (custom) | | 216 x 356 mm (8.5 x 14 inches) | | |


a. If media weight is over 90 g/m² (24 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)

Guidelines for special print media

| MEDIA TYPE | GUIDELINES |
|------------|--|
| Envelopes | <div><ul style="list-style-type: none">Successful printing on envelopes depends upon the quality of the envelopes. When selecting envelopes, consider the following factors:<ul style="list-style-type: none">Weight: The weight of the envelope paper should not exceed 90 g/m² or jamming 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, or otherwise damaged.Temperature: You should 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.</div> <div><div><div>1 Acceptable</div><div>2 Unacceptable</div></div></div> <div><ul style="list-style-type: none">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. Check your machine's specification to view the fusing temperature, see page 40. 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.</div> |

| MEDIA TYPE | GUIDELINES |
|--------------------------------------|--|
| Labels | <div><ul style="list-style-type: none">To avoid damaging the machine, use only labels designed for use in laser machines.<ul style="list-style-type: none">When selecting labels, consider the following factors:<ul style="list-style-type: none">Adhesives: The adhesive material should be stable at your machine's fusing temperature. Check your machine's specification to view the fusing temperature, see page 40.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.</div> |
| Card stock or custom-sized materials | <div><ul style="list-style-type: none">Do not print on media smaller than 76 mm wide or 127 mm long.In the software application, set margins at least 6.4 mm away from the edges of the material.</div> |
| Transparencies | <div><ul style="list-style-type: none">To avoid damaging the machine, use only transparencies designed for use in laser printers.Transparencies used in the machine must be able to withstand 180 °C, the machine's fusing temperature.Place them on a flat surface after removing them from the machine.Do not leave them 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 leave the printed sheets stack up as they are printed out.</div> |

| MEDIA TYPE | GUIDELINES |
|------------------|---|
| Preprinted paper | <ul style="list-style-type: none">Letterhead 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 page 40.Letterhead ink must be non-flammable and should not adversely affect printer rollers.Forms and letterhead should be sealed in a moisture-proof wrapping to prevent changes during storage.Before you load preprinted paper, such as forms and letterhead, verify that the ink on the paper is dry. During the fusing process, wet ink can come off preprinted paper, reducing print quality. |

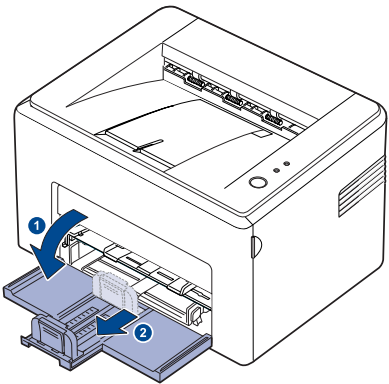
 Using photographic paper or coated paper may cause problems, requiring repairs. Such repairs are not covered by Samsung's warranty or service agreements.


LOADING PAPER

Loading paper in the tray

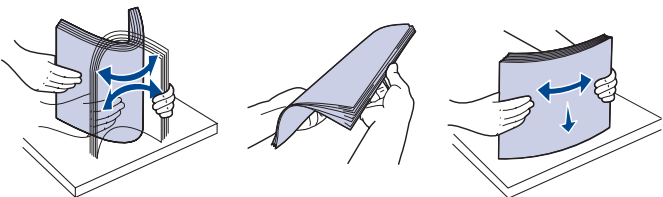
Load the print media you use for the majority of your print jobs in the tray. The tray can hold a maximum of 150 sheets of 75 g/m² (20 lb bond) plain paper.

1. Grasp the paper input tray and pull it toward you to open. Pinch the rear guide and pull it out to extend the tray.

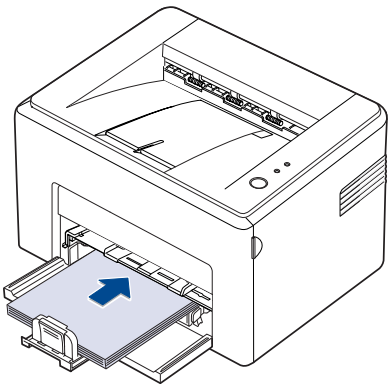


 Because the machine is very light, it may be moved when you use it; for example, when opening/closing the tray or installing/removing the toner cartridge. Be careful not to move the machine.

2. Prepare a stack of paper for loading by flexing or fanning them back and forth. Straighten the edges on a level surface.

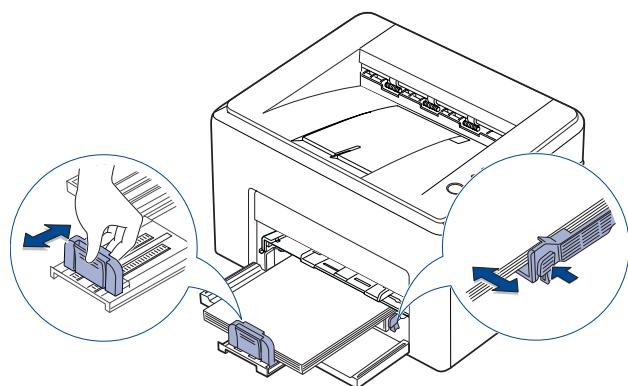


3. Load paper with the print side facing up. Make sure that all four corners are flat in the tray.

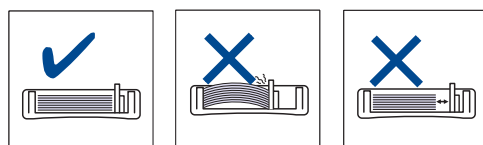


 Pay attention not to overload paper. Paper overloading may cause paper jams.

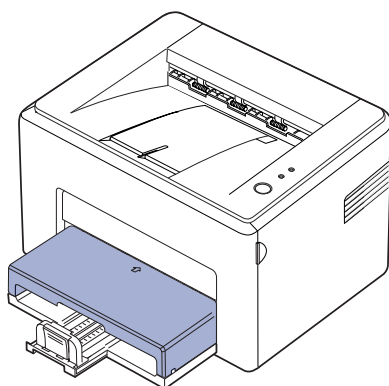
4. Pinch the rear guide to adjust for the paper length and pinch the side guide and slide it to the left flush against the paper.



- Do not push the width guide far enough to cause the material to warp.
- If you do not adjust the width guide, it may cause paper jam.



5. If necessary, close the paper cover to keep the paper loaded in the tray from dust.

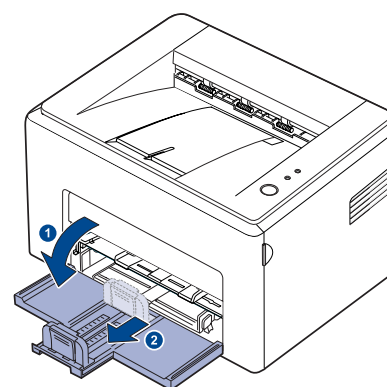


PRINTING ON SPECIAL PRINT MEDIAS

The machine can hold special sizes and types of print material, such as postcards, note cards, and envelopes. Especially, it is useful for single page printing on letterhead or colored paper.

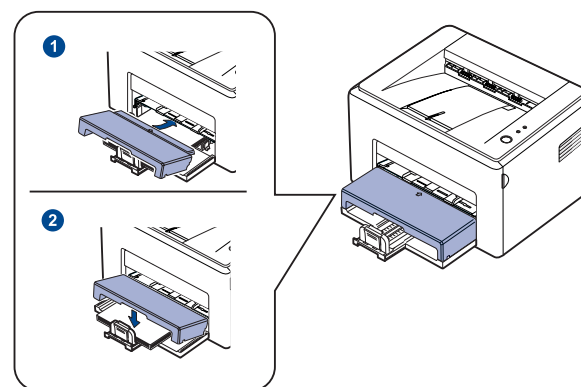
Feeding the print material manually

- Load only one size of print media at a time in the tray.
 - To prevent paper jams, do not add paper when there is still paper in the tray. This also applies to other types of print media.
 - Print media should be loaded face up with the side you want to print, and the top edge going into the tray first. Place print materials in the center of the tray.
 - Always load only the specified print media to avoid paper jams and print quality problems. (See "Selecting print media" on page 18.)
 - Flatten any curl on postcards, envelopes, and labels before loading them into the tray.
1. Grasp the paper input tray and pull it toward you to open. Pinch the rear guide and pull it out to extend the tray.

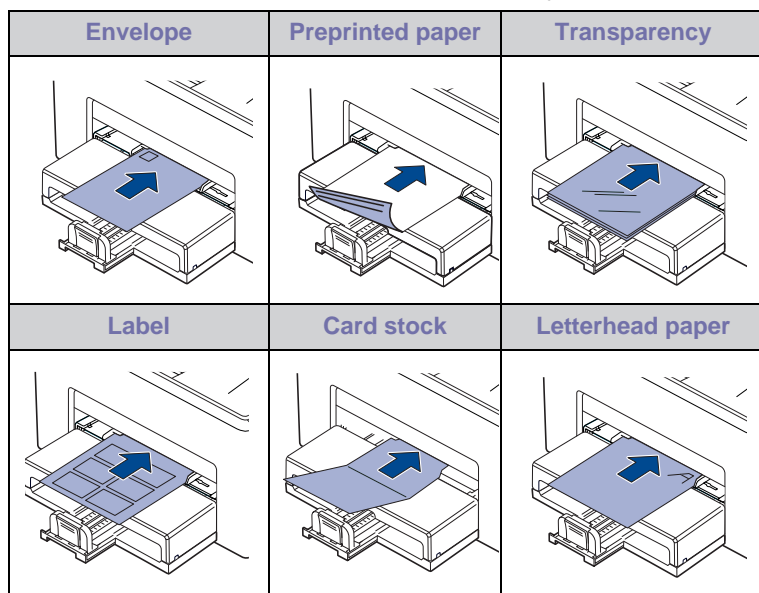



- Because the machine is very light, it may be moved when you use it; for example, when opening/closing the tray or installing/removing the toner cartridge. Be careful not to move the machine.

2. Place the dust cover on the paper input tray.
(For ML-1640 Series, skip this step and go to the next step.)





- Load the paper in the manual tray.
(For ML-1640 Series, load paper in the paper input tray.)





 For printing on labels or cardstocks using the manual tray, feed one paper at a time. We recommend you to first fill the paper input tray with papers for smooth printing.

- When you print in application, start the print menu.
- Open printer properties.
- Press the **Paper** tab in printer properties, and select an appropriate paper type.

 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.
- Press and hold the  **Cancel** button until machine starts operating.


-  • If you are printing multiple pages, load the next sheet after first page prints out, and press the  **Cancel** button. Repeat this step for every page to be printed.
- The settings you change remain in effect only while you are using the current application.

SETTING THE PAPER SIZE AND TYPE

After loading paper in the paper tray, you need to set the paper size and type using the printer driver. Follow these steps to make your changes permanent.

 The following procedure is for Windows XP. For other Windows OS, refer to the corresponding Windows User's Guide or online help.

- Click the **Start** button on the computer screen.
- Select **Printers and Faxes**.
- Right-click on the printer driver icon and select **Printing Preferences**.
- Click the **Paper** tab, and change the settings on **Paper Options**.
- Click **OK**.

 If you want to use special sized paper such as a billing paper, select **Custom** in the **Paper** tab in the printer properties. See Software section.

basic printing

This chapter explains common printing tasks.

This chapter includes:

- Printing a document
- Canceling a print job

PRINTING A DOCUMENT

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.

For details about printing, see the *Software section*.


CANCELING A PRINT JOB

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

1. Click the Windows **Start** menu.
2. For Windows 2000, select **Settings** and then **Printers**.
For Windows XP/2003, select **Printers and Faxes**.
For Windows Vista/2008, select **Control Panel > Hardware and Sound > Printers**.
For Windows 7, select **Control Panel → Hardware and Sound → Devices and Printers**.
For Windows Server 2008 R2, select **Control Panel → Hardware → Devices and Printers**.
3. For Windows 2000, XP, 2003, 2008 and Vista, double-click your machine.
For Windows 7 and Windows Server 2008 R2, right click your printer icon → context menus → **See what's printing**.
4. From the **Document** menu, select **Cancel**.



You can also access this window by simply double-clicking the printer icon at the bottom right corner of the Windows desktop.

You can also cancel the current job by pressing  **Cancel** on the control panel.

maintenance

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

This chapter includes:

- Cleaning your machine
- Maintaining the cartridge
- Replacing the toner cartridge



The illustrations of the machine are based on ML-2240 series. ML-1640 series does not have a manual tray.

CLEANING YOUR MACHINE

To maintain print quality, follow the cleaning procedures below each time the toner cartridge is replaced or if print quality problems occur.



- 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 its surrounding is contaminated with toner, we recommend you to use cloth or tissue dampened with water to clean it. If you use a vacuum cleaner, toner blown into the air may be harmful.

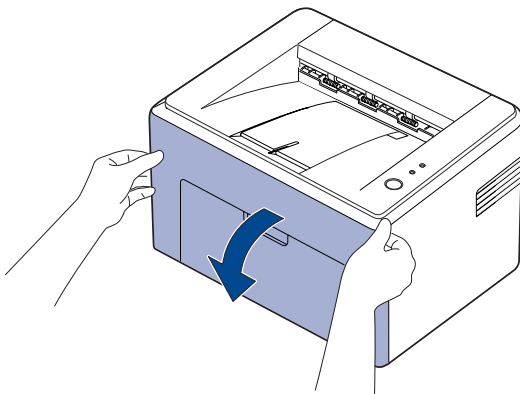
Cleaning the outside

Clean the cabinet of the machine with a soft lint-free cloth. You can dampen the cloth slightly with water, but be careful not to let any water drip onto or into the machine.

Cleaning the inside

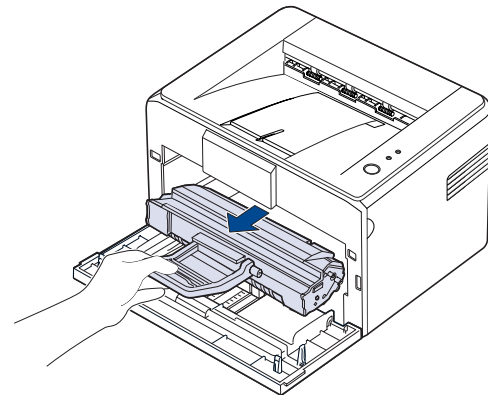
During the printing process, paper, toner, and dust particles can accumulate inside the machine. This buildup can cause print quality problems, such as toner specks or smearing. Cleaning the inside of the machine clears or reduces these problems.

1. Turn the machine off and unplug the power cord, then wait for the machine to cool down.
2. Open the front cover.



For ML-2240 Series, if you have installed the dust cover, remove the dust cover before opening the front cover.

3. Pull the toner cartridge out and remove it from the machine.



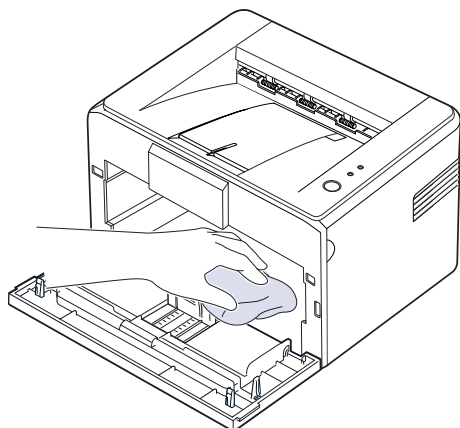
Because the machine is very light, it may be moved when you use it; for example, when opening/closing the tray or installing/removing the toner cartridge. Be careful not to move the machine.


4. Remove the manual tray by pulling it out.



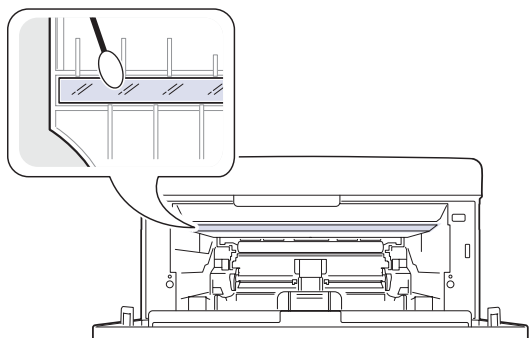
ML-1640 series does not have a manual tray, go to step 5.

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



-  To prevent damage to the toner cartridge, do not expose it to light for more than few minute. Cover it with a piece of paper, if necessary. Also, do not touch the black transfer roller inside the machine.

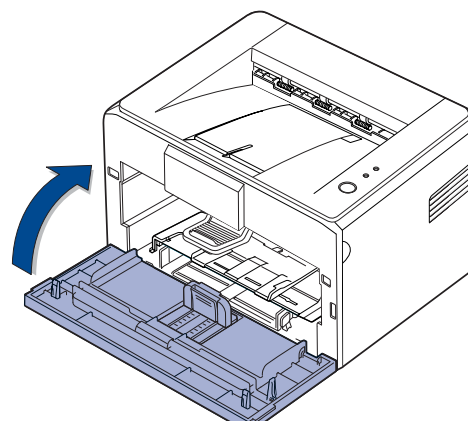
6. Locate the long strip of glass (LSU) inside the top of the cartridge compartment, and gently swab the glass to see if dirt turns the white cotton black.



7. After inserting the manual tray and the toner cartridge, close the cover. Make sure that the cover is securely closed. If it is not firmly closed, printing errors may occur when you print.



If it is not firmly closed, printing errors may occur when you print.



8. Plug in the power cord, and turn the machine on.

MAINTAINING THE CARTRIDGE

Toner cartridge storage

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.

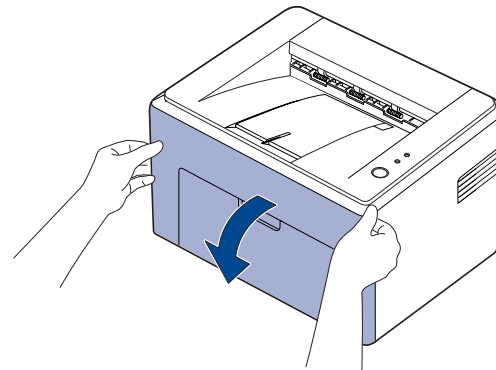
Estimated cartridge life


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.

Redistributing toner

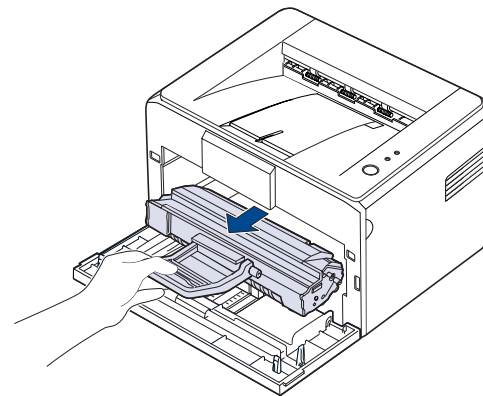
Small amount of toner is left in the cartridge. You can temporarily improve print quality by redistributing the toner.


1. Open the front cover.





-  For ML-2240 Series, if you have installed the dust cover, remove the dust cover before opening the front cover.

2. Pull the toner cartridge out and remove it from the machine.

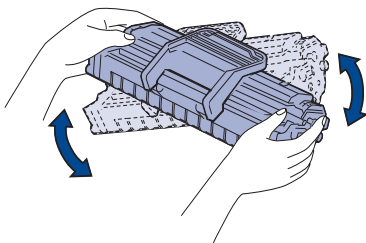



-  • Avoid reaching too far into the machine. The fusing area may be hot.
- To prevent damage to the toner cartridge, do not expose it to light for more than few minutes.

-  • Do not touch the green surface (or sky blue), the OPC drum, with your hands or any other material. Use the handle on the cartridge to avoid touching this area.
- Be careful not to expose the green surface (or sky blue), the OPC drum, into light. This will cause damage to the OPC drum. Cover the toner cartridge's OPC drum with paper to avoid damaging it from the light.
- Do not turn the toner cartridge over.

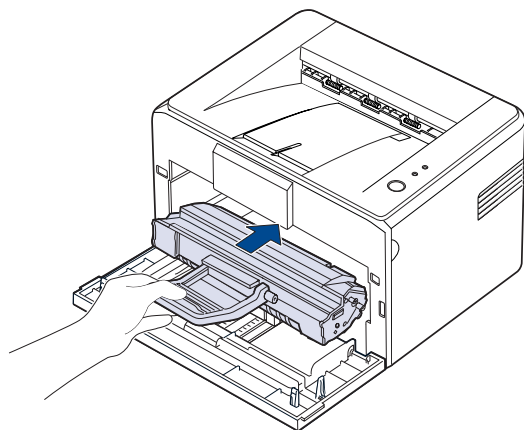
-  Because the machine is very light, it may be moved when you use it; for example, when opening/closing the tray or installing/removing the toner cartridge. Be careful not to move the machine.

3. Gently shake the toner cartridge from side to side five or six times to redistribute the toner.

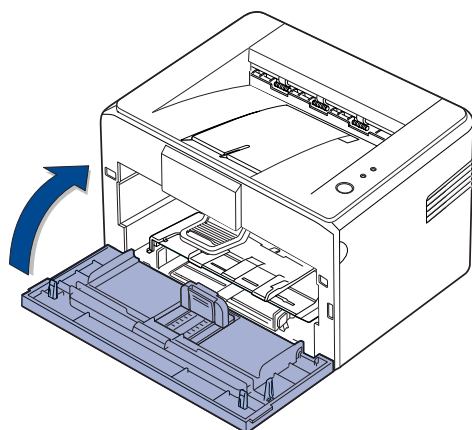


 If toner gets on your clothing, wipe it off with a dry cloth and wash it in cold water. Hot water sets toner into fabric.

4. Reinsert the toner cartridge into the machine. Ensure that the toner cartridge snaps into place.



5. Close the front cover. Make sure that the cover is securely closed. If it is not firmly closed, printing errors may occur when you print.



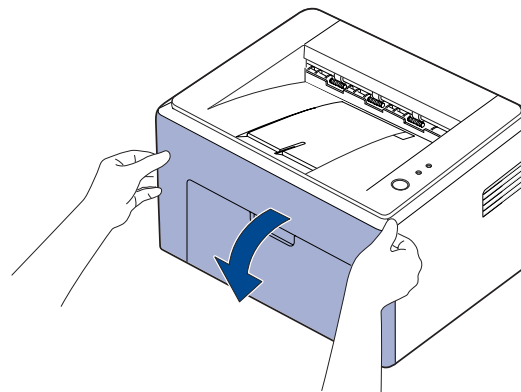
REPLACING THE TONER CARTRIDGE


When the toner LED lights red, a toner cartridge has reached its estimated cartridge life. Your machine stops printing.


Also, the Smart Panel program window appears on the computer telling you to replace the cartridge.

At this stage, the toner cartridge needs to be replaced. Check the type of toner cartridge for your machine. (See "Supply" on page 39.)

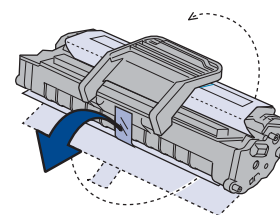
1. Turn the machine off, then wait a few minutes for the machine to cool.
2. Grasp the front cover and pull it toward you to open.




 For ML-2240 Series, if you have installed the dust cover, remove the dust cover before opening the front cover.

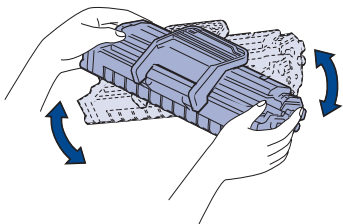
 Because the machine is very light, it may be moved when you use it; for example, when opening/closing the tray or installing/removing the toner cartridge. Be careful not to move the machine.

3. Remove the toner cartridge from its bag and remove the paper protecting the cartridge by pulling the packing tape.



-  Do not touch the green surface (or sky blue), the OPC drum, with your hands or any other material. Use the handle on the cartridge to avoid touching this area.
- Be careful not to expose the green surface (or sky blue), the OPC drum, into light. This will cause damage to the OPC drum. Cover the toner cartridge's OPC drum with paper to avoid damaging it from the light.
- Do not turn the toner cartridge over.

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

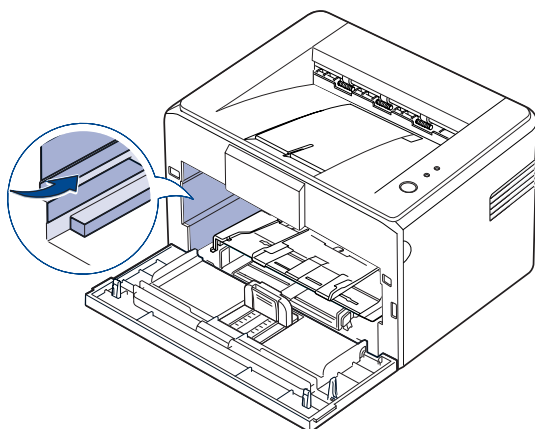


If toner gets on your clothing, wipe it off with a dry cloth and wash it in cold water. Hot water sets toner into fabric.

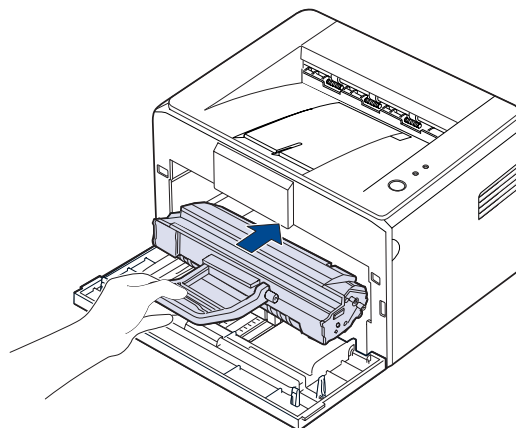


- Don't use sharp objects, such as a knife or scissors, to open the toner cartridge package. You could damage the surface of the toner cartridge.
- To prevent damage, do not expose the toner cartridge to light for more than a few minutes. Cover it with a piece of paper to protect it if necessary.

5. Locate the cartridge slots inside the machine, one on each side.



6. Unfold the toner cartridge handle and grasp it. Insert the cartridge in the machine until it snaps into place.

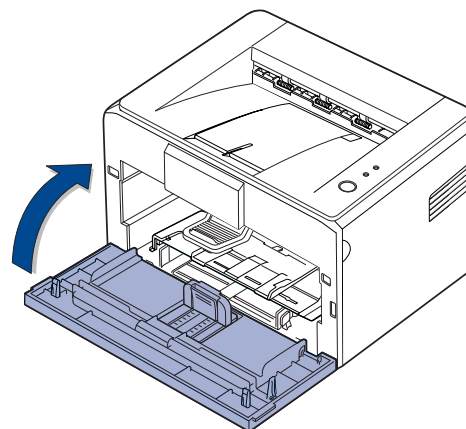


Carefully insert or pull out the toner cartridge not to scratch against the machine.



- Do not touch the green surface (or sky blue), the OPC drum, with your hands or any other material. Use the handle on the cartridge to avoid touching this area.
- Be careful not to expose the green surface (or sky blue), the OPC drum, into light. This will cause damage to the OPC drum. Cover the toner cartridge's OPC drum with paper to avoid damaging it from the light.
- Do not turn the toner cartridge over.

7. Close the front cover. Make sure that the cover is securely closed. If the cover is not firmly closed, printing errors may occur when you print.



Average yield for a new toner cartridge is 1,500 standard pages in accordance with the ISO/IEC 19752 standard. (Average yield for the original toner cartridge supplied with the machine is 700 standard pages.)

troubleshooting

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

This chapter includes:

- Tips for avoiding paper jams
- Clearing paper jams
- Solving other problems



The illustrations of the machine are based on ML-2240 series. ML-1640 series does not have a manual tray.

TIPS FOR AVOIDING PAPER JAMS

By selecting the correct media types, most paper jams can be avoided. When a paper jam occurs, follow the steps outlined on page 30.

- Follow the procedures on page 21. Ensure that the adjustable guides are positioned correctly.
- 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 23.)
- Ensure that the recommended side of the print media is facing up in the tray.

If a paper jam occurs, the error LED on the control panel lights **orange**. Find and remove the jammed paper.

To resume printing after clearing paper jams, you must open and close the front cover.

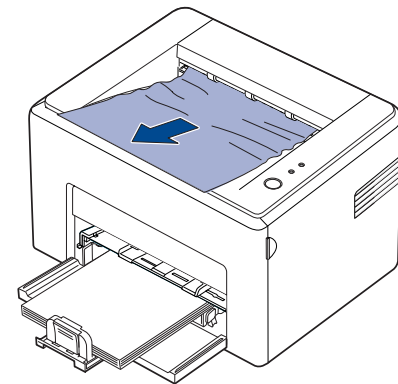
CLEARING PAPER JAMS

In the paper exit area



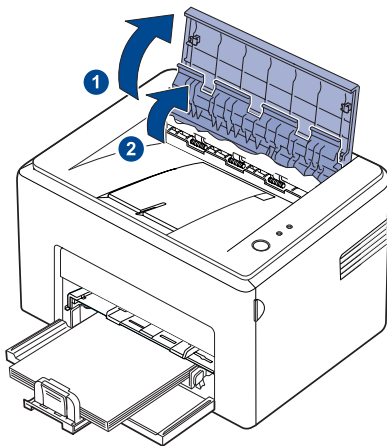
Paper jams in this area may result in loose toner on the page. If you get any toner on your clothes, wash them in cold water as hot water will set the toner into the fabric.

1. If the paper jams as it exits to the output tray and a long portion of the paper is visible, pull the paper straight out.



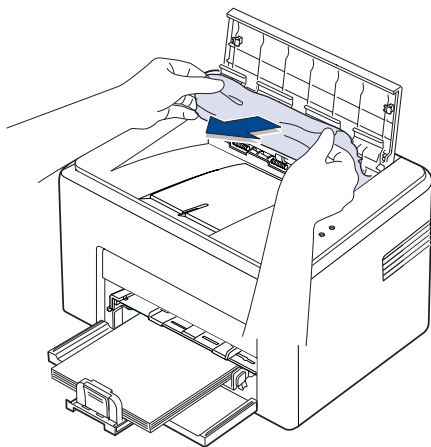
When you pull the jammed paper, if there is resistance and the paper does not move immediately, stop pulling. Continue with the next step.

2. Open the top cover and the inner cover.

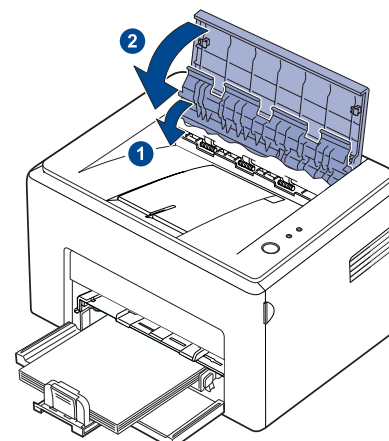


- When removing the jammed paper, be careful not to touch the heat roller (located underneath the inner cover). It is hot and could cause burns!
- The top and inner cover themselves may also be hot due to the heat roller. Allow the machine to cool before opening the covers.

3. Loosen the paper if it is caught in the heat rollers. Then pull the paper gently out.



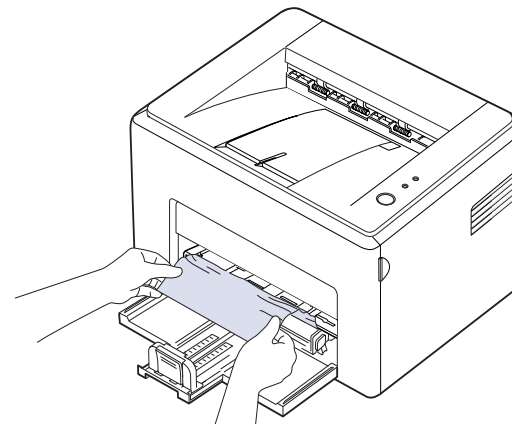
4. Close the inner cover and the top cover. Printing resumes automatically.



Failed pages will not reprint. Try printing the pages.

In the paper feed area

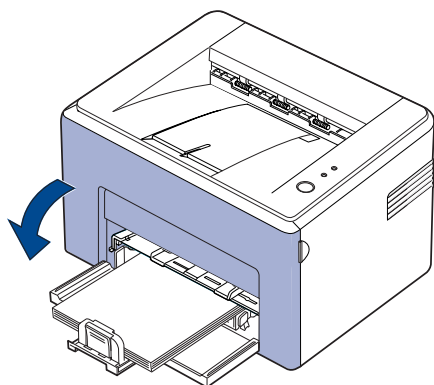
1. Remove any misfeed paper by pulling it out by the visible edge from the tray. Make sure that all of the paper is properly aligned in the tray.




2. Open and close the front or top cover to resume printing the document from failed pages.

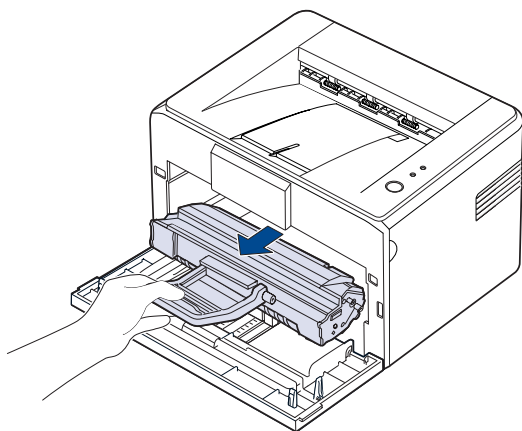
Around the toner cartridge


1. Open the front cover.



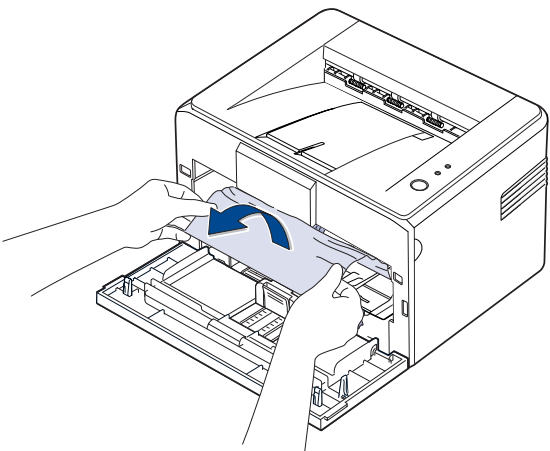
 For ML-2240 Series, if you have installed the dust cover, remove the dust cover before opening the front cover.

2. Pull the toner cartridge out and remove it from the machine.



-  • Do not touch the green surface (or sky blue), the OPC drum, with your hands or any other material. Use the handle on the cartridge to avoid touching this area.
- Be careful not to expose the green surface (or sky blue), the OPC drum, into light. This will cause damage to the OPC drum. Cover the toner cartridge's OPC drum with paper to avoid damaging it from the light.
 - Do not turn the toner cartridge over.

3. Gently pull the paper toward you.



4. Check that there is no other paper in the machine.

5. Reinstall the toner cartridge and close the front cover. Your machine resumes printing the document from failed pages.

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


| CONDITION | SUGGESTED SOLUTIONS |
|---------------------------------------|--|
| Paper is jammed during printing. | Clear the paper jam. See page 30. |
| Paper sticks together. | <ul style="list-style-type: none">• Ensure there is not too much paper in the tray. The tray can hold up to 150 sheets of paper, depending on the thickness of your paper.• Make sure that you are using the correct type of paper. See page 23.• Remove paper from the tray and flex or fan the paper.• Humid conditions may cause some paper to stick together. |
| Multiple sheets of paper do not feed. | <ul style="list-style-type: none">• Different types of paper may be stacked in the tray. Load paper of only one type, size, and weight.• If multiple sheets have caused a paper jam, clear the paper jam. See page 30. |
| Paper does not feed into the machine. | <ul style="list-style-type: none">• Remove any obstructions from inside the machine.• Paper has not been loaded correctly. Remove paper from the tray and reload it correctly.• There is too much paper in the tray. Remove excess paper from the tray.• The paper is too thick. Use only paper that meets the specifications required by the machine. See page 18. |

| CONDITION | SUGGESTED SOLUTIONS |
|--|---|
| The paper keeps jamming. | <ul style="list-style-type: none"> There is too much paper in the tray. Remove excess paper from the tray. If you are printing on special materials, load only one size of print media at a time in the tray. An incorrect type of paper is being used. Use only paper that meets the specifications required by the machine. See page 19. There may be debris inside the machine. Open the front cover and remove the debris. |
| Envelopes skew or fail to feed correctly. | Ensure the paper guides are against both sides of the envelopes. |

Printing problems


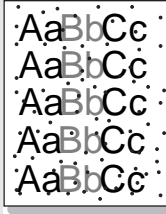
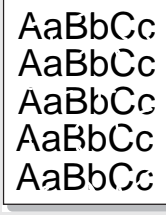
| CONDITION | POSSIBLE CAUSE | SUGGESTED SOLUTIONS |
|--|---|---|
| The machine does not print. | The machine is not receiving power. | Check the power cord connections. Check the power switch and the power source. |
| | The machine is not selected as the default printer. | Select Samsung ML-2240 Series as your default printer in your Windows. |
| | <ul style="list-style-type: none"> Check the machine for the following: <ul style="list-style-type: none"> The front cover is not closed. Close the cover. Paper is jammed. Clear the paper jam. See page 30. No paper is loaded. Load paper. See page 21. The toner cartridge is not installed. Install the toner cartridge. If a system error occurs, contact your service representative. | |
| | The connection cable between the computer and the machine is not connected properly. | Disconnect the printer 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 printer 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 printer properties to ensure that all of the print settings are correct. |
| | The printer driver may be incorrectly installed. | Repair the printer software. See the <i>Software section</i> . |
| | The machine is malfunctioning. | Check the LEDs status on the control panel to see if the machine is indicating a system error. |
| The machine does not print special sized paper such as a billing paper. | Paper size and paper size setting do not match. | Set the correct paper size in the Custom in the Paper tab in the printer properties. See Software section |

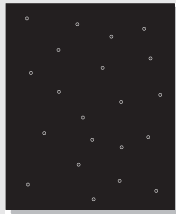
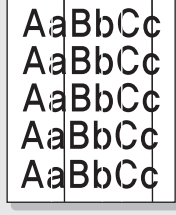
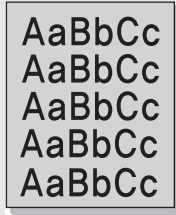
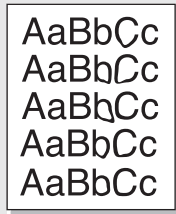
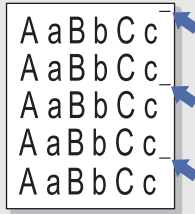
| CONDITION | POSSIBLE CAUSE | SUGGESTED SOLUTIONS |
|---|--|--|
| The machine selects print materials from the wrong paper source. | The paper source selection in the printer properties may be incorrect. | For many software applications, the paper source selection is found under the Paper tab within the printer properties. Select the correct paper source. See the printer driver help screen. |
| A print job is extremely slow. | The job may be very complex. | Reduce the complexity of the page or try adjusting the print quality settings. |
| Half the page is blank. | The page orientation setting may be incorrect. | Change the page orientation in your application. See 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. |
| The machine prints, but the text is wrong, garbled, or incomplete. | The printer cable is loose or defective. | Disconnect the printer cable and reconnect. Try a print job that you have already printed successfully. If possible, attach the cable and the machine to another computer and try a print job that you know works. Finally, try a new printer 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 then back on again. |
| Pages print, but are blank. | The toner cartridge is defective or out of toner. | Redistribute the toner, if necessary. See page 27. 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. |


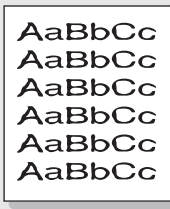

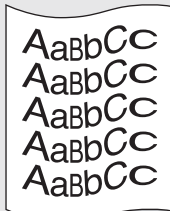
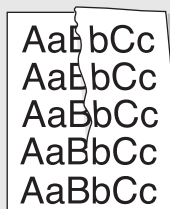
| CONDITION | POSSIBLE CAUSE | SUGGESTED SOLUTIONS |
|---|--|---|
| The machine does not print PDF file correctly. Some parts of graphics, text, or illustrations are missing. | Incompatibility between the PDF file and the Acrobat products. | Printing the PDF file as an image may solve this problem. Turn on Print As Image from the Acrobat printing options.  It will take longer to print when you print a PDF file as an image. |
| Your machine has an odd smell during initial use. | The oil used to protect the fuser is evaporating. | It is a temporary issue. |
| 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. |

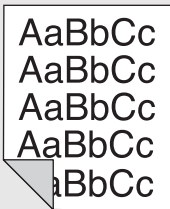

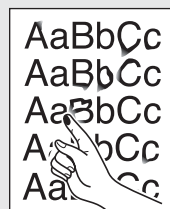

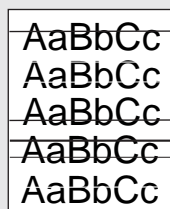
Printing quality problems

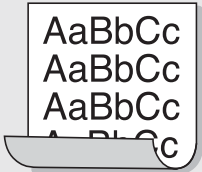
If the inside of the machine is dirty or paper has been loaded improperly, you may notice a reduction in print quality. See the table below to clear the problem.

| CONDITION | SUGGESTED SOLUTIONS |
|--|--|
| Light or faded print  | <p>If a vertical white streak or faded area appears on the page:</p> <ul style="list-style-type: none">The toner supply is low. You may be able to temporarily extend the toner cartridge life. See page 27. If this does not improve the print quality, install a new toner cartridge.The paper may not meet paper specifications; for example, the paper is too moist or too rough. See page 18.If the entire page is light, the print resolution setting is too low. Adjust the print resolution. See the help screen of the printer driver.A combination of faded or smeared defects may indicate that the toner cartridge needs cleaning.The surface of the LSU part inside the machine may be dirty. Clean the LSU by opening and closing the front cover several times and if the problem still occurs call the contact a service representative. |
| Toner specks  | <ul style="list-style-type: none">The paper may not meet specifications; for example, the paper is too moist or too rough. See page 18.The paper path may need cleaning. See "Cleaning the inside" on page 25. |
| Dropouts  | <p>If faded areas, generally rounded, occur randomly on the page:</p> <ul style="list-style-type: none">A single sheet of paper may be defective. Try reprinting the job.The moisture content of the paper is uneven or the paper has moist spots on its surface. Try a different brand of paper. See page 18.The paper lot is bad. The manufacturing processes can cause some areas to reject toner. Try a different kind or brand of paper.Change the printer option and try again. Go to printer properties, click Paper tab, and set type to Thick. Refer to the <i>Software section</i> for details. <p>If these steps do not correct the problem, contact a service representative.</p> |

| CONDITION | SUGGESTED SOLUTIONS |
|---|--|
| White Spots  | <p>White spots appear on the page:</p> <ul style="list-style-type: none">The paper is too rough and a lot of dirt from the paper falls to the inner devices within the machine, which means the transfer belt may be dirty. Clean the inside of your machine. Contact a service representative.The paper path may need cleaning. Contact a service representative. |
| Vertical lines  | <p>If white vertical streaks appear on the page:</p> <ul style="list-style-type: none">The surface of the LSU part inside the machine may be dirty. Clean the LSU by opening and closing the front cover several times and if the problem still occurs contact a service representative. |
| Black background  | <p>If the amount of background shading becomes unacceptable:</p> <ul style="list-style-type: none">Change to a lighter weight paper. See page 18.Check the machine's environment: very dry (low humidity) or high humidity (higher than 80% RH) conditions can increase the amount of background shading.Remove the old toner cartridge and install a new one. See page 28. |
| Toner smear  | <ul style="list-style-type: none">Clean the inside of the machine. See page 25.Check the paper type and quality. See page 18.Remove the toner cartridge and install a new one. See page 28. |
| Vertical repetitive defects  | <p>If marks repeatedly appear on the printed side of the page at even intervals:</p> <ul style="list-style-type: none">The toner cartridge may be damaged. If a repetitive mark occurs on the page, print a cleaning sheet several times to clean the cartridge. After the printout, if you still have the same problems, remove the toner cartridge and install a new one. See page 28.Parts of the machine may have toner on them. If the defects occur on the back of the page, the problem will likely correct itself after a few more pages.The fusing assembly may be damaged. Contact a service representative. |


| CONDITION | SUGGESTED SOLUTIONS |
|---|---|
| Background scatter  | <p>Background scatter results from bits of toner randomly distributed on the printed page.</p> <ul style="list-style-type: none"> The paper may be too damp. Try printing with a different batch of paper. Do not open packages of paper until necessary so that the paper does not absorb too much moisture. If background scatter occurs on an envelope, change the printing layout to avoid printing over areas that have overlapping seams on the reverse side. Printing on seams can cause problems. If background scatter covers the entire surface area of a printed page, adjust the print resolution through your software application or the printer properties. |
| Misformed characters  | <ul style="list-style-type: none"> If characters are improperly formed and producing hollow images, the paper stock may be too slick. Try a different paper. See page 18. |
| Page skew  | <ul style="list-style-type: none"> Ensure that the paper is loaded properly. Check the paper type and quality. See page 18. Ensure that the paper or other material is loaded correctly and the guides are not too tight or too loose against the paper stack. |
| Curl or wave  | <ul style="list-style-type: none"> Ensure that the paper is loaded properly. Check the paper type and quality. Both high temperature and humidity can cause paper curl. See page 18. Turn over the stack of paper in the tray. Also try rotating the paper 180° in the tray. |
| Wrinkles or creases  | <ul style="list-style-type: none"> Ensure that the paper is loaded properly. Check the paper type and quality. See page 18. Turn over the stack of paper in the tray. Also try rotating the paper 180° in the tray. |

| CONDITION | SUGGESTED SOLUTIONS |
|---|---|
| Back of printouts are dirty  | <ul style="list-style-type: none"> Check for leaking toner. Clean the inside of the machine. See page 25. |
| Black pages  | <ul style="list-style-type: none"> The toner cartridge may not be installed properly. Remove the cartridge and reinsert it. The toner cartridge may be defective and need replacing. Remove the toner cartridge and install a new one. See page 28. The machine may require repair. Contact a service representative. |
| Loose toner  | <ul style="list-style-type: none"> Clean the inside of the machine. See page 25. Check the paper type and quality. See page 18. Remove the toner cartridge and install a new one. See page 28. If the problem persists, the machine may require repair. Contact a service representative. |
| Character Voids  | <p>Character voids are white areas within parts of characters that should be solid black:</p> <ul style="list-style-type: none"> If you are using transparencies, try another type of transparency. Because of the composition of transparencies, some character voids are normal. You may be printing on the wrong surface of the paper. Remove the paper and turn it around. The paper may not meet paper specifications. See page 18. |
| Horizontal stripes  | <p>If horizontally aligned black streaks or smears appear:</p> <ul style="list-style-type: none"> The toner cartridge may be installed improperly. Remove the cartridge and reinsert it. The toner cartridge may be defective. Remove the toner cartridge and install a new one. See page 28. If the problem persists, the machine may require repair. Contact a service representative. |

| CONDITION | SUGGESTED SOLUTIONS |
|---|---|
| Curl  | <p>If the printed paper is curled or paper does not feed into the machine:</p> <ul style="list-style-type: none"> • Turn over the stack of paper in the tray. Also try rotating the paper 180° in the tray. • Change the printer option and try again. Go to printer properties, click Paper tab, and set type to Thin. Refer to the <i>Software</i> section for details. |
| An unknown image repetitively appears on a next few sheets or loose toner, light print, or contamination occurs. | <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. You can set this option through Paper or Printer tab in printer driver's properties.</p> |


Common Windows problems

| CONDITION | SUGGESTED SOLUTIONS |
|---|--|
| "File in Use" message appears during installation. | <p>Exit all software applications. Remove all software from the StartUp Group, then restart Windows. Reinstall the printer driver.</p> |
| "General Protection Fault", "Exception OE", "Spool32", or "Illegal Operation" messages appear. | <p>Close all other applications, reboot Windows and try printing again.</p> |
| "Fail To Print", "A printer timeout error occurred." messages appear. | <p>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.</p> |


 Refer to the Microsoft Windows documentation that came with your computer for further information on Windows error messages.


Common Linux problems

| CONDITION | SUGGESTED SOLUTIONS |
|---|--|
| The machine does not print. | <ul style="list-style-type: none"> • Check if the printer driver is installed in your system. Open Unified Driver Configurator and switch to the Printers tab in Printers configuration window to look at the list of available printers. Make sure that your machine is displayed on the list. If not, please, invoke Add new printer wizard to set up your device. • Check if the printer is started. Open Printers configuration and select your machine on the printers list. Look at the description in the Selected printer pane. If its status contains "(stopped)" string, please, press the Start button. After that normal operation of the printer should be restored. The "stopped" status might be activated when some problems in printing occurred. • 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" -> "Setup printer" and edit command line parameter in the command item. |
| The machine does not print whole pages and its output is half page printed. | <p>The problem is solved in AFPL Ghostscript v. 8.52 or above. Download the latest version of AFPL Ghostscript from http://sourceforge.net/projects/ghostscript/ and install it to solve this problem.</p> |
| I encounter error "Unable to open mfp port device file!" when printing a document. | <p>Please 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 mfp port while printing, the abrupt termination of the driver keeps the port locked and therefore unavailable for subsequent print jobs. If this situation occurred, please, try to release the mfp port.</p> |

 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 file correctly. Some parts of graphics, text, or illustrations are missing. | <div>Incompatibility between the PDF file and the Acrobat products: Printing the PDF file as an image may solve this problem. Turn on Print As Image from the Acrobat printing options.</div> <div> It will take longer to print when you print a PDF file as an image.</div> |
| The document has printed, but the print job has not disappeared from the spooler in Mac OS 10.3.2. | <div>Update your Mac OS to OS 10.3.3. or higher.</div> |
| Some letters are not displayed normally during the Cover page printing. | <div>This problem is caused because Mac OS cannot create the font during the Cover page printing. English alphabet and numbers are displayed normally at the Cover page.</div> |


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

ordering supplies and accessories

This chapter provides information on purchasing cartridges and accessories available for your machine.

This chapter includes:

- Supply
- Maintenance parts


 The optional parts or features may differ by countries. Contact your sales representatives whether the part you want is available in your country.

SUPPLY

When the toner runs out, you can order the following type of toner cartridge for your machine:

| TYPE | AVERAGE YIELD | PART NUMBER |
|--|---|--|
| Standard yield ^a toner unit | Average cartridge yield: 1,500 standard pages | MLT-D108S (Black) Region A^b MLT-D1082S (Black) |

- 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.

 When you purchase a new toner cartridge or supplies, you must purchase them in the same country you have purchased your machine. Otherwise, the toner cartridge or supplies will be incompatible with your machine since the configuration of the toner cartridge or supplies vary depending on the countries.

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 condition, the following items will need to be replaced after the specified number of pages, or when the life span of each item has expired.

| ITEMS | YIELD (AVERAGE) |
|-----------------|----------------------|
| Pick-up roller | Approx. 50,000 pages |
| Fuser unit | Approx. 50,000 pages |
| Transfer roller | Approx. 50,000 pages |

We highly recommend that this maintenance be performed by an authorized service provider, dealer or the retailer where you bought the machine. The warranty does not cover the replacement of the maintenance parts after their lifespan.

HOW TO PURCHASE

To order Samsung-authorized supplies or accessories, contact your local Samsung dealer or the retailer where you purchased your machine, or visit www.samsung.com/supplies and select your country/region to obtain information on calling for technical support.

specifications

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

This chapter include:

- ML-1640 Series specifications
- ML-2240 Series Specifications

ML-1640 SERIES SPECIFICATIONS

| ITEM | DESCRIPTION |
|-----------------------------------|--|
| Printing method | Laser beam printing |
| Printing speed ^a | Up to 16 ppm (A4), 17 ppm (Letter) |
| First print out time | <ul style="list-style-type: none">• From ready: Less than 10 seconds• From coldboot: Less than 30 seconds |
| Print resolution | Max. 1,200 x 600 dpi effective output |
| Printer language | SPL |
| OS compatibility ^b | <ul style="list-style-type: none">• Windows: 2000/XP/2003/Vista/2008/7/Server 2008 R2• Linux: RedHat 8.0~9.0, Mandrake 9.2~10.1, SuSE 8.2~9.2, Fedra Core 1~4, Ubuntu 6.0• Macintosh: Mac OS 10.3~10.6 |
| Interface | Full speed USB 2.0 |
| Paper input capacity | Tray: 150 sheets for plain paper, 75 g/m ² (20 lb bond) For details about paper input capacity, see 19 page. |
| Paper output capacity | Face down: 50 sheets 75 g/m ² (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">• Average operating mode: Less than 300 W• Ready mode: Less than 70 W• Sleep mode: Less than 6W• Power off mode: 0W |
| Noise Level ^c | <ul style="list-style-type: none">• Ready mode: Less than 26 dBA• Printing mode: Less than 50 dBA |
| Warm-up time | Less than 35 seconds |
| Operating environment | Temperature: 10 to 32.5 °C (50 to 90 °F) Humidity: 20 to 80% RH |
| Toner cartridge life ^d | Average cartridge yield: 1,500 standard pages (Shipped with 700 pages toner cartridge./ Chinese ships with 1,500 pages toner cartridge.) ^e |

| ITEM | DESCRIPTION |
|--------------------------------|--|
| External dimension (W x D x H) | 350.5 x 298.5 x 212 mm (13.8 x 11.75 x 8.35 inches) |
| Weight (Including consumables) | 5.66 Kg (12.47 lb) |
| Package weight | Paper: 1 Kg (2.2 lbs) Plastic: 0.19 Kg (0.42 lbs) |
| Fusing temperature | 180 °C (356 °F) |

- 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 to download the latest software version.
- c. Sound Pressure Level, ISO 7779
- d. 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.
- e. It varies depending on the product configuration.

ML-2240 SERIES SPECIFICATIONS

| ITEM | DESCRIPTION |
|-----------------------------------|--|
| Printing method | Laser beam printing |
| Printing speed ^a | Up to 22 ppm (A4), 23 ppm (Letter) |
| First print out time | <ul style="list-style-type: none">From ready: Less than 8.5 secondsFrom coldboot: Less than 18 seconds |
| Print resolution | Max. 1,200 x 600 dpi effective output |
| Printer language | SPL |
| OS compatibility ^b | <ul style="list-style-type: none">Windows: 2000/XP/2003/Vista/2008/7/Server 2008 R2Linux: RedHat 8.0~9.0, Mandrake 9.2~10.1, SuSE 8.2~9.2, Fedra Core 1~4, Ubuntu 6.0Macintosh: Mac OS 10.3~10.6 |
| Interface | Full speed USB 2.0 |
| Paper input capacity | Tray: 150 sheets for plain paper, 75 g/m ² (20 lb bond) For details about paper input capacity, see 19 page. |
| Paper output capacity | Face down: 100 sheets 75 g/m ² (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">Average operating mode: Less than 350 WReady mode: Less than 70WSleep mode: Less than 6WPower off mode: 0W |
| Noise Level ^c | <ul style="list-style-type: none">Ready mode: Less than 33 dBAPrinting mode: Less than 51 dBA |
| Warm-up time | Less than 25 seconds |
| Operating environment | Temperature: 10 to 32.5 °C (50 to 90 °F) Humidity: 20 to 80% RH |
| Toner cartridge life ^d | Average cartridge yield: 1,500 standard pages (Shipped with 700 pages toner cartridge./ Chinese ships with 1,500 pages toner cartridge.) ^e |
| External dimension (W x D x H) | 350.5 x 298.5 x 212 mm (13.8 x 11.75 x 8.35 inches) |

| ITEM | DESCRIPTION |
|--------------------------------|--|
| Weight (Including consumables) | 5.91 Kg (13.03 lb) |
| Package weight | Paper: 1 Kg (2.2 lbs) Plastic: 0.19 Kg (0.42 lbs) |
| Fusing temperature | 180 °C (356 °F) |

- 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 to download the latest software version.
- c. Sound Pressure Level, ISO 7779
- d. 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.
- e. It varies depending on the product configuration.

glossary



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

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.

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.

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.

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.

index

C

Cancel button 12

cleaning

inside 25

outside 25

control panel 12

D

demo page, print 15

driver

installation 17

J

jam

tips for avoiding paper jams 30

L

Linux problems 37

M

Maintenance

maintenance parts 39

toner cartridge 27

P

paper

clearing jam 30

loading in the tray1 21

printing special materials 22

paper type

setting 23

print quality problems, solve 35

printing

demo page 15

problem, solve

Linux 37

paper feeding 32

printing quality 35

Windows 37

R

replacing components

toner cartridge 28

S

Shows 12

W

Windows problems 37

contact samsung worldwide

If you have any comments or questions regarding Samsung products, contact the Samsung customer care center.

| COUNTRY/REGION | CUSTOMER CARE CENTER | WEB SITE |
|----------------|--|--|
| ARGENTINE | 0800-333-3733 | www.samsung.com/ar |
| AUSTRALIA | 1300 362 603 | www.samsung.com/au |
| AUSTRIA | 0810-SAMSUNG (7267864, € 0.07/min) | www.samsung.com/at |
| BELARUS | 810-800-500-55-500 | www.samsung.ua www.samsung.com/ua_ru |
| BELGIUM | 02 201 2418 | www.samsung.com/be (Dutch) www.samsung.com/be_fr (French) |
| BRAZIL | 0800-124-421 4004-0000 | www.samsung.com/br |
| CANADA | 1-800-SAMSUNG (726-7864) | www.samsung.com/ca |
| CHILE | 800-SAMSUNG (726-7864) | www.samsung.com/cl |
| CHINA | 400-810-5858 010-6475 1880 | www.samsung.com/cn |
| COLOMBIA | 01-8000112112 | www.samsung.com.co |
| COSTA RICA | 0-800-507-7267 | www.samsung.com/latin |
| CZECH REPUBLIC | 800-SAMSUNG (800-726786) Samsung Zrt., česká organizační složka, Oasis Florenc, Sokolovská394/17, 180 00, Praha 8 | www.samsung.com/cz |
| DENMARK | 8-SAMSUNG (7267864) | www.samsung.com/dk |
| ECUADOR | 1-800-10-7267 | www.samsung.com/latin |
| EL SALVADOR | 800-6225 | www.samsung.com/latin |
| ESTONIA | 800-7267 | www.samsung.com/ee |
| KAZAKHSTAN | 8-10-800-500-55-500 | www.samsung.com/kz_ru |
| KYRGYZSTAN | 00-800-500-55-500 | |
| FINLAND | 30-6227 515 | www.samsung.com/fi |
| FRANCE | 01 4863 0000 | www.samsung.com/fr |
| GERMANY | 01805 - SAMSUNG (726-7864 € 0,14/min) | www.samsung.de |
| GUATEMALA | 1-800-299-0013 | www.samsung.com/latin |
| HONDURAS | 800-7919267 | www.samsung.com/latin |
| HONG KONG | 3698-4698 | www.samsung.com/hk_en/ www.samsung.com/hk_en/ |

| COUNTRY/REGION | CUSTOMER CARE CENTER | WEB SITE |
|----------------|--|---|
| HUNGARY | 06-80-SAMSUNG (726-7864) | www.samsung.com/hu |
| INDIA | 3030 8282 1800 110011 1800 3000 8282 | www.samsung.com/in |
| INDONESIA | 0800-112-8888 | www.samsung.com/id |
| ITALIA | 800-SAMSUNG (726-7864) | www.samsung.com/it |
| JAMAICA | 1-800-234-7267 | www.samsung.com/latin |
| JAPAN | 0120-327-527 | www.samsung.com/jp |
| LATVIA | 8000-7267 | www.samsung.com/lv |
| LITHUANIA | 8-800-77777 | www.samsung.com/lt |
| LUXEBURG | 02 261 03 710 | www.samsung.com/lu |
| MALAYSIA | 1800-88-9999 | www.samsung.com/my |
| MEXICO | 01-800-SAMSUNG (726-7864) | www.samsung.com/mx |
| MOLDOVA | 00-800-500-55-500 | www.samsung.ua www.samsung.com/ua_ru |
| NETHERLANDS | 0900-SAMSUNG (0900-7267864) (€ 0,10/min) | www.samsung.com/nl |
| NEW ZEALAND | 0800 SAMSUNG (0800 726 786) | www.samsung.com/nz |
| NICARAGUA | 00-1800-5077267 | www.samsung.com/latin |
| NORWAY | 3-SAMSUNG (7267864) | www.samsung.com/no |
| PANAMA | 800-7267 | www.samsung.com/latin |
| PHILIPPINES | 1800-10-SAMSUNG (726-7864) 1-800-3-SAMSUNG (726-7864) 1-800-8-SAMSUNG (726-7864) 02-5805777 | www.samsung.com/ph |
| POLAND | 0 801 1SAMSUNG (172678) 022-607-93-33 | www.samsung.com/pl |
| PORTUGAL | 80820-SAMSUNG (726-7864) | www.samsung.com/pt |
| PUERTO RICO | 1-800-682-3180 | www.samsung.com/latin |
| REP. DOMINICA | 1-800-751-2676 | www.samsung.com/latin |
| EIRE | 0818 717 100 | www.samsung.com/ie |

| COUNTRY/REGION | CUSTOMER CARE CENTER | WEB SITE |
|------------------------------|--------------------------------------|--|
| RUSSIA | 8-800-555-55-55 | www.samsung.ru |
| SINGAPORE | 1800-SAMSUNG (726-7864) | www.samsung.com/sg |
| SLOVAKIA | 0800-SAMSUNG (726-7864) | www.samsung.com/sk |
| SOUTH AFRICA | 0860 SAMSUNG (726-7864) | www.samsung.com/za |
| SPAIN | 902-1-SAMSUNG(902 172 678) | www.samsung.com/es |
| SWEDEN | 0771 726 7864 (SAMSUNG) | www.samsung.com/se |
| SWITZERLAND | 0848-SAMSUNG (7267864, CHF 0.08/min) | www.samsung.com/ch |
| TADJIKISTAN | 8-10-800-500-55-500 | |
| TAIWAN | 0800-329-999 | www.samsung.com/tw |
| THAILAND | 1800-29-3232 02-689-3232 | www.samsung.com/th |
| TRINIDAD & TOBAGO | 1-800-SAMSUNG (726-7864) | www.samsung.com/latin |
| TURKEY | 444 77 11 | www.samsung.com/tr |
| U.A.E | 800-SAMSUNG (726-7864) 8000-4726 | www.samsung.com/ae |
| U.K | 0845 SAMSUNG (726-7864) | www.samsung.com/uk |
| U.S.A | 1-800-SAMSUNG (7267864) | www.samsung.com/us |
| UKRAINE | 8-800-502-0000 | www.samsung.ua www.samsung.com/ua_ru |
| UZBEKISTAN | 8-10-800-500-55-500 | www.samsung.com/kz_ru |
| VENEZUELA | 0-800-100-5303 | www.samsung.com/latin |
| VIETNAM | 1 800 588 889 | www.samsung.com/vn |

© 2008 Samsung Electronics Co., Ltd. All rights reserved.

This user's guide is provided for information purposes only. All information included herein is subject to change without notice. Samsung Electronics is not responsible for any direct or indirect damages, arising from or related to use of this user's guide.

- Samsung and Samsung logo are trademarks of Samsung Electronics Co., Ltd.
- Microsoft, Windows, Windows Vista, Windows 7 and Windows 2008 Server R2 are either registered trademarks or trademarks of Microsoft Corporation.
- UFST® and MicroType™ are registered trademarks of Monotype Imaging Inc.
- TrueType, LaserWriter and Macintosh are trademarks of Apple Computer, Inc.
- All other brand or product names are trademarks of their respective companies or organizations.
- Refer to the '**LICENSE.txt**' file in the provided CD-ROM for the open source license information.



Software section

SOFTWARE SECTION

CONTENTS

Chapter 1: **INSTALLING PRINTER SOFTWARE IN WINDOWS**

| | |
|-------------------------------------|---|
| Installing Printer Software | 4 |
| Reinstalling Printer Software | 6 |
| Removing Printer Software | 6 |

Chapter 2: **BASIC PRINTING**

| | |
|--------------------------------|----|
| Printing a Document | 7 |
| Printing to a file (PRN) | 8 |
| Printer Settings | 8 |
| Layout Tab | 9 |
| Paper Tab | 9 |
| Graphics Tab | 10 |
| Extras Tab | 11 |
| About Tab | 12 |
| Printer Tab | 12 |
| Using a Favorite Setting | 12 |
| Using Help | 12 |

Chapter 3: **ADVANCED PRINTING**

| | |
|---|----|
| Printing Multiple Pages on One Sheet of Paper (N-Up Printing) | 13 |
| Printing Posters | 14 |
| Printing Booklets | 14 |
| Printing on Both Sides of Paper | 15 |
| Printing a Reduced or Enlarged Document | 15 |
| Fitting Your Document to a Selected Paper Size | 15 |
| Using Watermarks | 16 |
| Using an Existing Watermark | 16 |
| Creating a Watermark | 16 |

| | |
|-----------------------------------|----|
| Editing a Watermark | 16 |
| Deleting a Watermark | 16 |
| Using Overlays | 17 |
| What is an Overlay? | 17 |
| Creating a New Page Overlay | 17 |
| Using a Page Overlay | 17 |
| Deleting a Page Overlay | 17 |

Chapter 4: SHARING THE PRINTER LOCALLY

| | |
|------------------------------------|----|
| Setting Up a Host Computer | 18 |
| Setting Up a Client Computer | 18 |

Chapter 5: USING SMART PANEL

| | |
|---|----|
| Understanding Smart Panel | 19 |
| Opening the Troubleshooting Guide | 20 |
| Changing the Smart Panel Program Settings | 20 |

Chapter 6: USING YOUR PRINTER IN LINUX

| | |
|---|----|
| Getting Started | 21 |
| Installing the Unified Linux Driver | 21 |
| Installing the Unified Linux Driver | 21 |
| Uninstalling the Unified Linux Driver | 22 |
| Using the Unified Driver Configurator | 23 |
| Opening the Unified Driver Configurator | 23 |
| Printers Configuration | 23 |
| Ports Configuration | 24 |
| Configuring Printer Properties | 24 |
| Printing a Document | 25 |
| Printing from Applications | 25 |
| Printing Files | 25 |

Chapter 7: USING YOUR PRINTER WITH A MACINTOSH

| | |
|---------------------------|----|
| Installing Software | 26 |
|---------------------------|----|

Setting Up the Printer 27

Printing 28

 Printing a Document 28

 Changing Printer Settings 28

 Printing Multiple Pages on One Sheet of Paper 29

1 Installing Printer Software in Windows

This chapter includes:

- **Installing Printer Software**
- **Reinstalling Printer Software**
- **Removing Printer Software**

Installing Printer Software


You can install the printer software for local printing. To install the printer software on the computer, perform the appropriate installation procedure depending on the printer in use.

A printer driver is software that lets your computer communicate with your printer. The procedure to install drivers may differ depending on the operating system you are using.

All applications should be closed on your PC before beginning installation.

A local printer is a printer directly attached to your computer using the printer cable supplied with your printer, such as a USB or parallel cable.

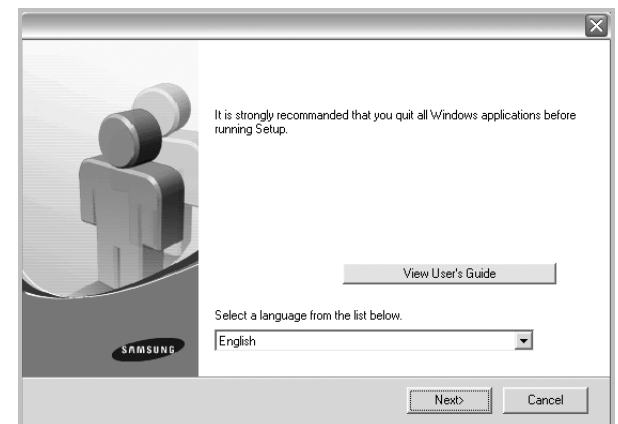
You can install the printer software using the typical or custom method.

NOTE: 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**.

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

- 1 Make sure that the printer is connected to your computer and powered on.
- 2 Insert the supplied CD-ROM into your CD-ROM drive.
The CD-ROM should automatically run, and an installation window appears.
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 and click **OK**.
If you use Windows Vista, Windows 7 and Windows 2008 Server R2 click **Start** → **All programs** → **Accessories** → **Run**, and type **X:\Setup.exe**.

If the **AutoPlay** window appears in Windows Vista, Windows 7 and Windows 2008 Server R2 click **Run Setup.exe** in **Install or run program** field, and click **Continue** in the **User Account Control** window.



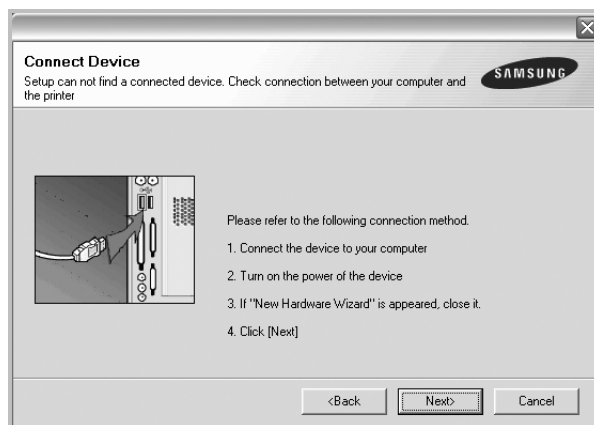
- 3 Click **Next**.
 - If necessary, select a language from the drop-down list.
 - **View User's Guide:** Allows you to view the User's Guide. If your computer doesn't have Adobe Acrobat, click on this option and it will automatically install Adobe Acrobat Reader for you.

- 4 Choose the type of installation. Click **Next**.



- **Typical:** Installs the most common software for your printer. This is recommended for most users.
- **Custom:** Allows you to choose the individual components you want to install.

NOTE: If your printer is not already connected to the computer, the following window will appear.



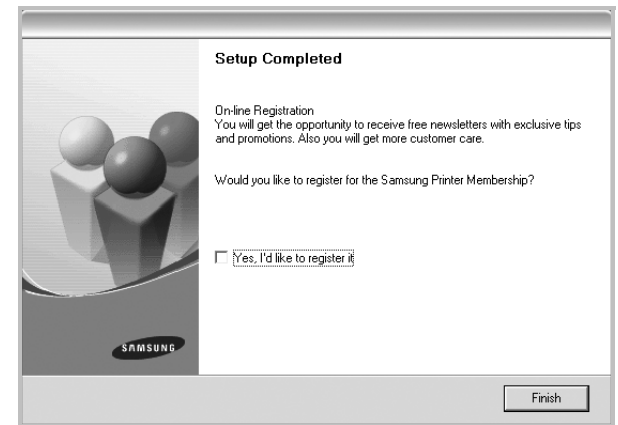
- After connecting the printer, click **Next**.
- If you don't want to connect the printer at this time, click **Next**, and **No** on the following screen. Then the installation will start and a test page will not be printed at the end of the installation.
- *The installation window that appears in this User's Guide may differ depending on the printer and interface in use.*

- 5 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 to step 7.

- 6 If the test page prints out correctly, click **Yes**.
If not, click **No** to reprint it.

- 7 To register yourself as a user of Samsung Printers in order to receive information from Samsung, select the checkbox and click **Finish**. You are now sent to the Samsung web site.

Otherwise, just click **Finish**.



NOTE: After setup is complete, if your printer driver doesn't work properly, reinstall the printer driver. See "Reinstalling Printer Software" on page 6.

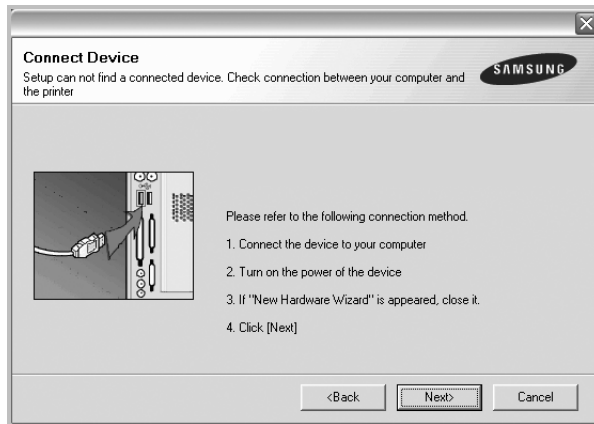
Reinstalling Printer Software

You can reinstall the software if installation fails.

- 1 Start Windows.
- 2 From the **Start** menu select **Programs** or **All Programs** → **your printer driver name** → **Maintenance**.
- 3 Select **Repair** and click **Next**.

You will see a component list so that you can reinstall any item individually.

NOTE: If your printer is not already connected to the computer, the following window will appear.



- After connecting the printer, click **Next**.
- If you don't want to connect the printer at this time, click **Next**, and **No** on the following screen. Then the installation will start and a test page will not be printed at the end of the installation.
- *The reinstallation window that appears in this User's Guide may differ depending on the printer and interface in use.*

- 4 Select the components you want to reinstall and click **Next**.

If you select **your printer driver name** and reinstall the printer software for local printing, the window asking you to print a test page appears. Do as follows:

- a. To print a test page, select the check box and click **Next**.
- b. If the test page prints out correctly, click **Yes**.
If it doesn't, click **No** to reprint it.

- 5 When the reinstallation is done, click **Finish**.

Removing Printer Software

- 1 Start Windows.
- 2 From the **Start** menu select **Programs** or **All Programs** → **your printer driver name** → **Maintenance**.
- 3 Select **Remove** and click **Next**.
You will see a component list so that you can remove any item individually.
- 4 Select the components you want to remove and then click **Next**.
- 5 When your computer asks you to confirm your selection, click **Yes**.
The selected driver and all of its components are removed from your computer.
- 6 After the software is removed, click **Finish**.

2 Basic Printing




This chapter explains the printing options and common printing tasks in Windows.

This chapter includes:

- **Printing a Document**
- **Printing to a file (PRN)**
- **Printer Settings**
 - Layout Tab
 - Paper Tab
 - Graphics Tab
 - Extras Tab
 - About Tab
 - Printer Tab
 - Using a Favorite Setting
 - Using Help

Printing a Document

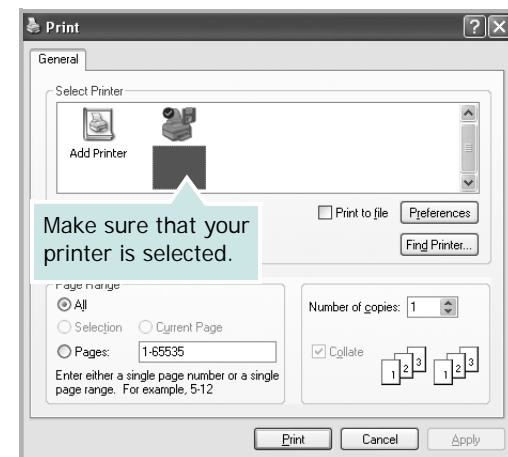
NOTES:

- Your printer driver **Properties** window that appears in this User's Guide may differ depending on the printer in use. However the composition of the printer properties window is similar.
- *Check the Operating System(s) that are compatible with your printer. Please refer to the OS Compatibility section of Printer Specifications in your Printer User's Guide.*
- If you need to know the exact name of your printer, you can check the supplied CD-ROM.
- When you select an option in printer properties, you may see an exclamationmark  or  mark. 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. The exact steps for printing a document may vary depending on the application program you are using. Refer to the User's Guide of your software application for the exact printing procedure.

- 1 Open the document you want to print.
- 2 Select **Print** from the **File** menu. The Print window is displayed. 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 printer driver** from the **Name** drop-down list.

To take advantage of the printer features provided by your printer driver, click **Properties** or **Preferences** in the application's Print window. For details, see "Printer Settings" on page 8.

If you see **Setup**, **Printer**, or **Options** in your Print window, click it instead. Then click **Properties** on the next screen.

Click **OK** to close the printer properties window.

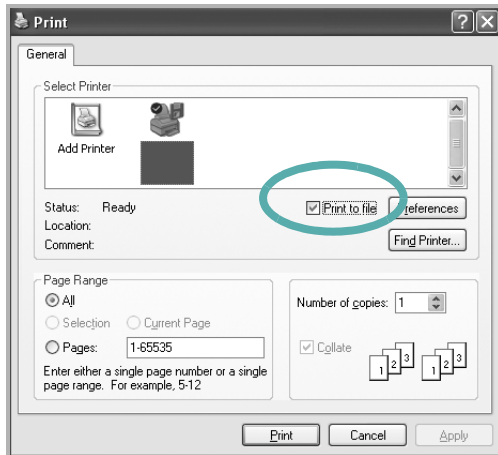
- 4 To start the print job, click **OK** or **Print** in the Print window.

Printing to a file (PRN)

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

To create a file:

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



- 2 Select the folder and assign a name of the file and then click OK.

Printer Settings

You can use the printer properties window, which allows you to access all of the printer options you need when using your printer. When the printer properties are displayed, you can review and change the settings needed for your print job.

Your printer properties window may differ, depending on your operating system. This Software User's Guide shows the Properties window for Windows XP.

Your printer driver **Properties** window that appears in this User's Guide may differ depending on the printer in use.

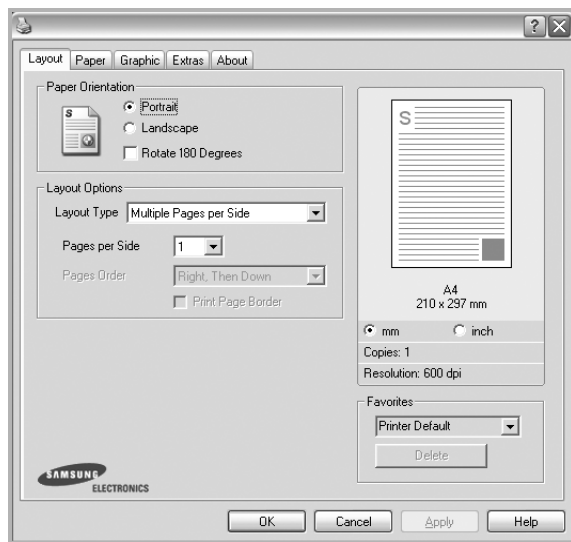
If you access printer properties through the Printers folder, you can view additional Windows-based tabs (refer to your Windows User's Guide) and the Printer tab (see "Printer Tab" on page 12).

NOTES:

- 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.
- The settings you change remain in effect only while you are using the current program. **To make your changes permanent**, make them in the Printers folder.
- The following procedure is for Windows XP. For other Windows OS, refer to the corresponding Windows User's Guide or online help.
 1. Click the Windows **Start** button.
 2. Select **Printers and Faxes**.
 3. Select **your printer driver icon**.
 4. Right-click on the printer driver icon and select **Printing Preferences**.
 5. Change the settings on each tab, click OK.

Layout Tab

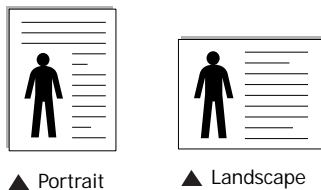
The **Layout** tab provides options to adjust how the document appears on the printed page. The **Layout Options** includes **Multiple Pages per Side**, **Poster Printing** and **Booklet Printing**. See “Printing a Document” on page 7 for more information on accessing printer properties.



Paper Orientation

Paper Orientation allows you to select the direction in which information is printed on a page.

- **Portrait** prints across the width of the page, letter style.
- **Landscape** prints across the length of the page, spreadsheet style.
- **Rotate** allows you to rotate the page the selected degrees.



Layout Options

Layout Options allows you to select advanced printing options. You can choose **Multiple Pages per Side** and **Poster Printing**.

- For details, see “Printing Multiple Pages on One Sheet of Paper (N-Up Printing)” on page 13.
- For details, see “Printing Posters” on page 14
- For details, see “Printing Booklets” on page 14

Double-sided Printing

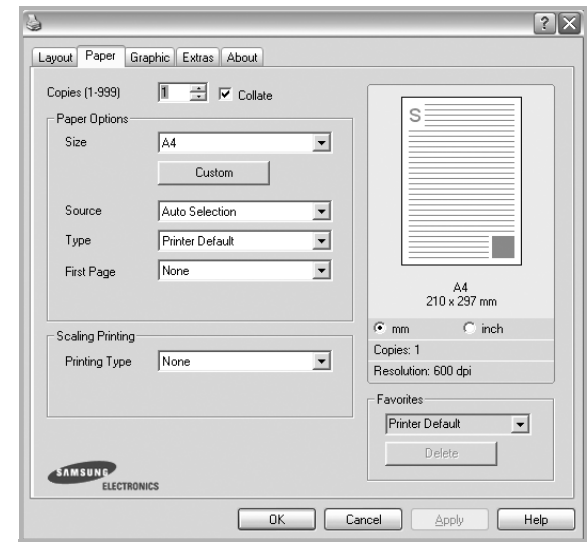
Double-sided Printing allows you to print on both sides of paper. *If this option does not appear, your printer does not have this feature.*

- For details, see “Printing on Both Sides of Paper” on page 15.

Paper Tab

Use the following options to set the basic paper handling specifications when you access the printer properties. See “Printing a Document” on page 7 for more information on accessing printer properties.

Click the **Paper** tab to access various paper properties.



Copies

Copies allows you to choose the number of copies to be printed. You can select 1 to 999 copies.

Paper Options

Size

Size allows you to set the size of paper you loaded in the tray. If the required size is not listed in the **Size** box, click **Custom**. When the **Custom Paper Setting** window appears, set the paper size and click **OK**. The setting appears in the list so that you can select it.

Source

Make sure that **Source** is set to the corresponding paper tray. Use **Manual Feeder** when printing on special materials like envelopes and transparencies. You have to load one sheet at a time into the Manual Tray or Multi-Purpose Tray. If the paper source is set to **Auto Selection**, the printer automatically picks up print material in the following tray order: Manual Tray or Multi-Purpose Tray, Tray n.

Type

Set **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 not, print quality may not be achieved as you want.

Thick Paper: 24 lb to 28 lb (90~105 g/m²) thick paper.

Thin Paper: 16 lb to 19 lb (60~70 g/m²) thin paper.

Cotton: 20 lb to 24 lb (75~90 g/m²) cotton paper such as Gilbert 25 % and Gilbert 100 %.

Plain Paper: Normal plain paper. Select this type if your printer is monochrome and printing on the 16 lb (60 g/m²) cotton paper.

Recycled Paper: 20 lb to 24 lb (75~90 g/m²) recycled paper.

Color Paper: 20 lb to 24 lb (75~90 g/m²) color-background paper.

Archive Paper: If you need to keep print-out for a long period time such as archives, select this option.

Scaling Printing

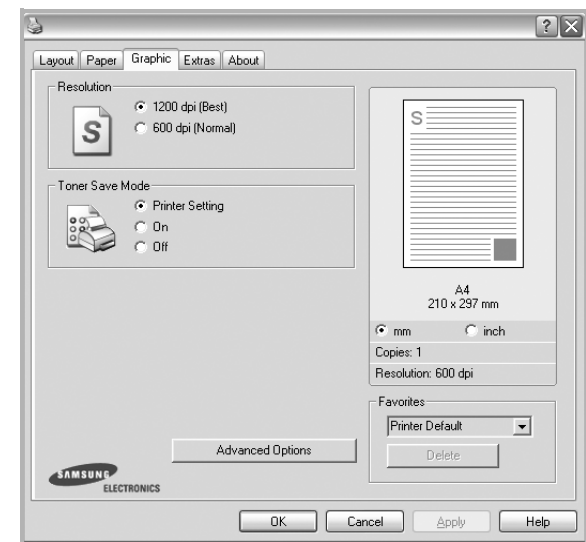
Scaling Printing allows you to automatically or manually scale your print job on a page. You can choose from **None**, **Reduce/Enlarge**, and **Fit to Page**.

- For details, see "Printing a Reduced or Enlarged Document" on page 15.
- For details, see "Fitting Your Document to a Selected Paper Size" on page 15.

Graphics Tab

Use the following Graphic options to adjust the print quality for your specific printing needs. See "Printing a Document" on page 7 for more information on accessing printer properties.

Click the **Graphic** tab to display the properties shown below.



Resolution

The Resolution options you can select may vary depending on your printer model. 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.

Toner Save Mode

Selecting this option extends the life of your toner cartridge and reduces your cost per page without a significant reduction in print quality. *Some printers do not support this feature.*

- **Printer Setting:** If you select this option, this feature is determined by the setting you've made on the control panel of the printer.
- **On:** Select this option to allow the printer to use less toner on each page.
- **Off:** If you don't need to save toner when printing a document, select this option.

Darkness

Use this option to lighten or darken your print job. *Some printers do not support this feature.*

- **Normal:** This setting is for normal documents.
- **Light:** This setting is for bolder line widths or darker gray-scale images.
- **Dark:** This setting is for finer line width, higher definition in graphics, and lighter gray-scale images.

Advanced Options

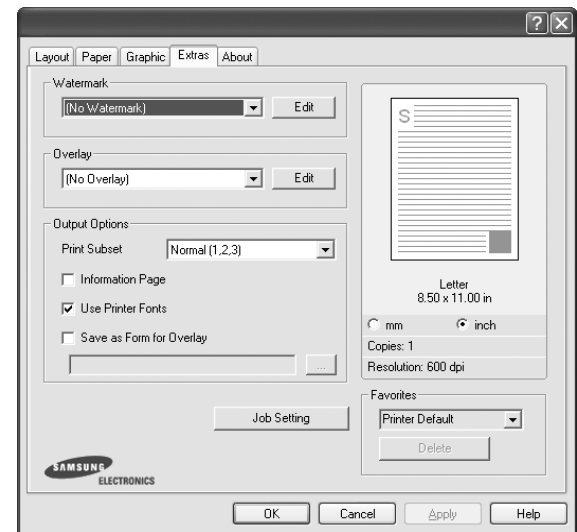
You can set advanced settings by clicking the **Advanced Options** button.

- **Print All Text To Black:** When the **Print All Text To Black** option is checked, all text in your document prints solid black, regardless of the color it appears on the screen.
- **Print All Text To Darken:** When the **Print All Text To Darken** option is checked, all text in your document is allowed to print darker than on a normal document. *Some printers do not support this feature.*

Extras Tab

You can select output options for your document. See “Printing a Document” on page 7 for more information about accessing the printer properties.

Click the **Extras** tab to access the following feature:



Watermark

You can create a background text image to be printed on each page of your document. For details, see “Using Watermarks” on page 16.

Overlay

Overlays are often used to take the place of preprinted forms and letterhead paper. For details, see “Using Overlays” on page 17.

Output Options

- **Print Subset:** You can set the sequence in which the pages print. Select the print order from the drop-down list.
 - **Normal (1,2,3):** Your printer prints all pages from the first page to the last page.
 - **Reverse All Pages (3,2,1):** Your printer prints all pages from the last page to the first page.
 - **Print Odd Pages:** Your printer prints only the odd numbered pages of the document.
 - **Print Even Pages:** Your printer prints only the even numbered pages of the document.
- **Reprint When Jammed:** Your printer retains the image of a page until the page has been successfully printed out. When the paper jam has occurred and this option is checked, the printer will reprint any incomplete pages after you have cleared the jam. *Some printers do not support this feature.*

About Tab

Use the **About** tab to display the copyright notice and the version number of the driver. If you have an Internet browser, you can connect to the Internet by clicking on the web site icon. See "Printing a Document" on page 7 for more information about accessing printer properties.

Printer Tab

If you access printer properties through the **Printers** folder, you can view the **Printer** tab. You can set the printer configuration.

The following procedure is for Windows XP. For other Windows OS, refer to the corresponding Windows User's Guide or online help.

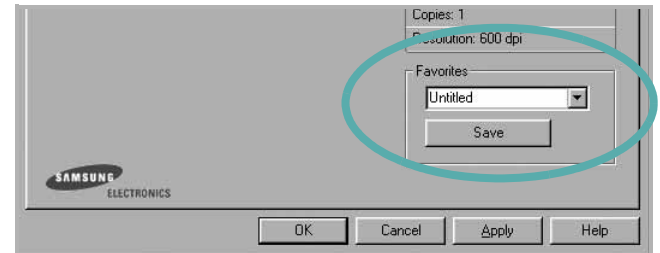
- 1 Click the Windows **Start** menu.
- 2 Select **Printers and Faxes**.
- 3 Select **your printer driver** icon.
- 4 Right-click on the printer driver icon and select **Properties**.
- 5 Click the **Printer** tab and set the options.

Using a Favorite Setting

The **Favorites** option, which is visible on each properties tab, allows you to save the current properties 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 the item from the **Favorites** drop down list. The printer is now set to print according to the Favorites setting you selected.

To delete a Favorites item, select it from the list and click **Delete**.

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

Using Help

Your printer has a help screen that can be activated by clicking the **Help** button in the printer properties window. These help screens give detailed information about the printer features provided by the printer driver.

You can also click  from the upper right corner of the window, and then click on any setting.

3 Advanced Printing

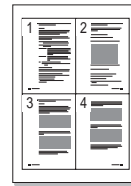
This chapter explains printing options and advanced printing tasks.

NOTE:

- Your printer driver **Properties** window that appears in this User's Guide may differ depending on the printer in use. However the composition of the printer properties window is similar.
- If you need to know the exact name of your printer, you can check the supplied CD-ROM.

This chapter includes:

- **Printing Multiple Pages on One Sheet of Paper (N-Up Printing)**
- **Printing Posters**
- **Printing Booklets**
- **Printing on Both Sides of Paper**
- **Printing a Reduced or Enlarged Document**
- **Fitting Your Document to a Selected Paper Size**
- **Using Watermarks**
- **Using Overlays**

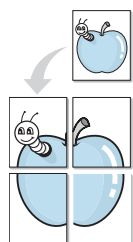


Printing Multiple Pages on One Sheet of Paper (N-Up Printing)

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.

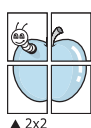
- 1 To change the print settings from your software application, access printer properties. See "Printing a Document" on page 7.
- 2 From the **Layout** tab, choose **Multiple Pages per Side** in the **Layout Type** drop-down list.
- 3 Select the number of pages you want to print per sheet (1, 2, 4, 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.
Check **Print Page Border** to print a border around each page on the sheet.
- 5 Click the **Paper** tab, select the paper source, size, and type.
- 6 Click **OK** and print the document.

Printing Posters

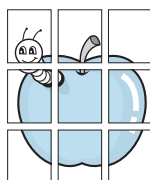


This feature allows you to print a single-page document onto 4, 9, or 16 sheets of paper, for the purpose of pasting the sheets together to form one poster-size document.

- 1 To change the print settings from your software application, access printer properties. See “Printing a Document” on page 7.
- 2 Click the **Layout** tab, select **Poster Printing** in the **Layout Type** drop-down list.
- 3 Configure the poster option:
You can select the page layout from **Poster<2x2>**, **Poster<3x3>** or **Poster<4x4>**. If you select **Poster<2x2>**, the output will be automatically stretched to cover 4 physical pages.

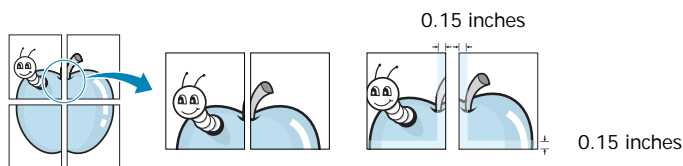


▲ 2x2



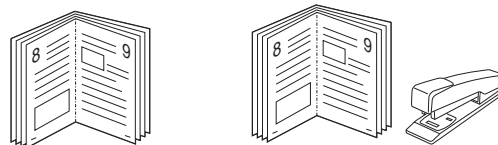
▲ 3x3

Specify an overlap in millimeters or inches to make it easier to pasting the sheets together.



- 4 Click the **Paper** tab, select the paper source, size, and type.
- 5 Click **OK** and print the document. You can complete the poster by pasting the sheets together.

Printing Booklets



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

- 1 To change the print settings from your software application, access the printer properties. See “Printing a Document” on page 7.
- 2 From the **Layout** tab, choose **Booklet Printing** from the **Layout Type** drop-down list.

NOTE: 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 paper size in the **Size** option on the **Paper** tab, then check if the **Booklet Printing** in a **Layout Type** drop-down list on the **Layout** tab is activated.

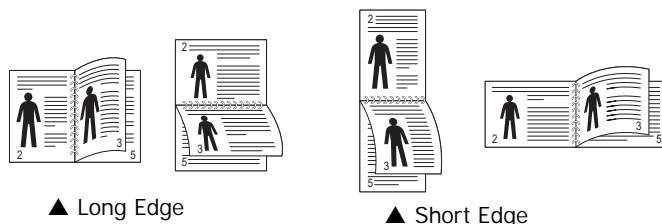
- 3 Click the **Paper** tab, and select the paper source, size, and type.
- 4 Click **OK** and print the document.
- 5 After printing, fold and staple the pages.

Printing on Both Sides of Paper

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

The options are:

- **None**
- **Long Edge**, which is the conventional layout used in book binding.
- **Short Edge**, which is the type often used with calendars.



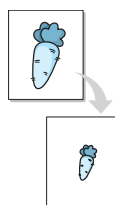
NOTE:

- Do not print on both sides of labels, transparencies, envelopes, or thick paper. Paper jamming and damage to the printer may result.

- 1 To change the print settings from your software application, access printer properties. "Printing a Document" on page 7.
- 2 From the **Layout** tab, select the paper orientation.
- 3 From the **Double-sided Printing** section, select the binding option you want.
- 4 Click the **Paper** tab and select the paper source, size, and type.
- 5 Click **OK** and print the document.

NOTE: If your printer does not have a duplex unit, you should complete the printing job manually. The printer prints every other page of the document first. After printing the first side of your job, the Printing Tip window appears. Follow the on-screen instructions to complete the printing job.

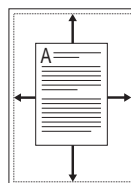
Printing a Reduced or Enlarged Document



You can change the size of a page's content to appear larger or smaller on the printed page.

- 1 To change the print settings from your software application, access printer properties. See "Printing a Document" on page 7.
- 2 From the **Paper** tab, select **Reduce/Enlarge** in the **Printing Type** drop-down list.
- 3 Enter the scaling rate in the **Percentage** input box.
You can also click the ▼ or ▲ button.
- 4 Select the paper source, size, and type in **Paper Options**.
- 5 Click **OK** and print the document.

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 digital 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 printer properties. See "Printing a Document" on page 7.
- 2 From the **Paper** tab, select **Fit to Page** in the **Printing Type** drop-down list.
- 3 Select the correct size from the **Output size** drop-down list.
- 4 Select the paper source, size, and type in **Paper Options**.
- 5 Click **OK** and print the document.

Using Watermarks

The Watermark option allows you to print text over an existing document. For example, you may 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 printer, and 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 printer properties. See "Printing a Document" on page 7.
- 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** and start printing.

NOTE: The preview image shows how the page will look when it is printed.

Creating a Watermark

- 1 To change the print settings from your software application, access printer properties. See "Printing a Document" on page 7.
- 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 window.
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, or grayscale level from the **Font Attributes** section and set the angle of the watermark from the **Message Angle** section.
- 5 Click **Add** to add a new watermark to the list.
- 6 When you have finished editing, click **OK** and start printing.

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 printer properties. See "Printing a Document" on page 7.
- 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** until you exit the Print window.

Deleting a Watermark

- 1 To change the print settings from your software application, access printer properties. See "Printing a Document" on page 7.
- 2 From the **Extras** tab, 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** until you exit the Print window.

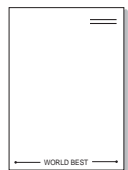
Using Overlays

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 preprinted forms and letterhead paper. Rather than using preprinted letterhead, you can create an overlay containing the exact 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 printer. You need only tell the printer to 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 printer properties. See "Printing a Document" on page 7.
- 3 Click the **Extras** tab, and click **Edit** button in the **Overlay** section.
- 4 In the Edit Overlay window, click **Create Overlay**.
- 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** box.
- 7 Click **OK** or **Yes** to finish creating.
The file is not printed. Instead it is stored on your computer hard disk drive.

NOTE: The overlay document size must be the same as the documents 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 printer properties. See "Printing a Document" on page 7.
- 3 Click the **Extras** tab.
- 4 Select the desired overlay from the **Overlay** drop-down list box.
- 5 If the overlay file you want does not appear in the **Overlay** list, click **Edit** button and **Load Overlay**, and select the overlay file.

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, click **Confirm Page Overlay When Printing**. 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 **Yes** until printing begins.
The selected overlay downloads with your print job and prints on your document.

NOTE: 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 printer properties window, click the **Extras** tab.
- 2 Click the **Edit** button in the **Overlay** section.
- 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** until you exit the Print window.

4 Sharing the Printer Locally

You can connect the printer directly to a selected computer, which is called "host computer," on the network.

The following procedure is for Windows XP. For other Windows OS, refer to the corresponding Windows User's Guide or online help.

NOTES:

- Check the Operating System(s) that are compatible with your printer. Please refer to the OS Compatibility section of Printer Specifications in your Printer User's Guide.
 - If you need to know the exact name of your printer, you can check the supplied CD-ROM.
-

Setting Up a Host Computer

- 1 Start Windows.
- 2 From the **Start** menu select **Printers and Faxes**.
- 3 Double-click **your printer driver icon**.
- 4 From the **Printer** menu, select **Sharing**.
- 5 Check the **Share this printer** box.
- 6 Fill in the **Shared Name** field, and then click **OK**.

Setting Up a Client Computer

- 1 Right-click the Windows **Start** button and select **Explore**.
- 2 Select **My Network Places** and then right-click **Search for Computers**.
- 3 Fill in the IP address of host computer in **Computer name** field, and click **Search**. (In case host computer requires **User name** and **Password**, fill in User ID and password of host computer account.)
- 4 Double-click **Printers and Faxes**.
- 5 Right-click printer driver icon, select **Connect**.
- 6 Click **Yes**, if the installation confirm message appears.

5 Using Smart Panel

Smart Panel is a program that monitors and informs you of the status of the printer, and allows you to customize the printer's settings. If you are a Windows or Macintosh OS user, Smart Panel is installed automatically when you install the printer software. If you are a Linux OS user, download Smart Panel from the Samsung website (www.samsung.com/printer) and install.

NOTES:

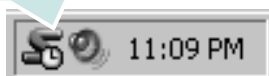
- To use this program, you need:
 - To check for Operating System(s) that are compatible with your printer, refer to Printer Specifications in your Printer User's Guide.
 - Mac OS X 10.3 or higher
 - Linux. To check for Linux systems that are compatible with your printer, refer to Printer Specifications in your Printer User's Guide.
 - Internet Explorer version 5.0 or higher for flash animation in HTML Help.
- If you need to know the exact name of your printer, you can check the supplied CD-ROM.

Understanding Smart Panel

If an error occurs while printing, Smart Panel appears automatically, showing the error.

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).

Double-click this icon in Windows.



Click this icon in Mac OS X.



Click this icon in Linux.

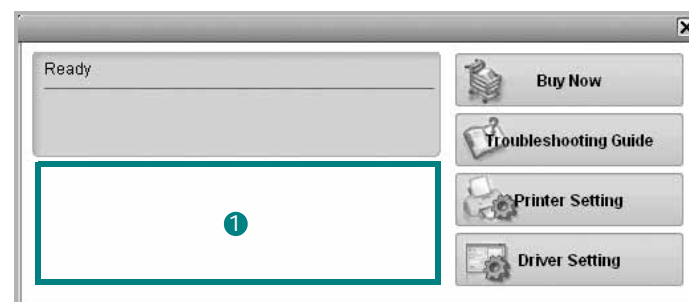


If you are a Windows user, from the **Start** menu, select **Programs** or **All Programs** → **your printer driver name** → **Smart Panel**.

NOTES:

- If you have already installed more than one Samsung printer, first select the printer model you want in order to use the corresponding Smart Panel. Right-click (in Windows or Linux) or click (in Mac OS X) the Smart Panel icon and select **your printer name**.
- The Smart Panel window and its contents shown in this Software User's Guide may differ depending on the printer or Operating System in use.

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



① Toner Level

You can view the level of toner remaining in the toner cartridge(s). The printer and the number of toner cartridge(s) shown in the above window may differ depending on the printer in use. Any printers do not have this feature.

Buy Now

You can order replacement toner cartridge(s) online.

Troubleshooting Guide

You can view Help to solve problems.

Driver Setting (Only for Windows)

You can use the printer properties window, which allows you to access all of the printer options you need for using your printer. For details, See "Printer Settings" on page 8.

Opening the Troubleshooting Guide

Using the troubleshooting guide, you can view solutions for error status problems.

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.

6 Using Your Printer in Linux

You can use your machine in a Linux environment.

This chapter includes:

- **Getting Started**
- **Installing the Unified Linux Driver**
- **Using the Unified Driver Configurator**
- **Configuring Printer Properties**
- **Printing a Document**

Getting Started

You need to download Linux software package from the Samsung website (www.samsung.com/printer) to install the printer softwares.

After the driver is installed on your Linux system, the driver package allows you to monitor a number of machine devices via fast ECP parallel ports and USB simultaneously.


The Unified Linux Driver package is supplied with a smart and flexible installation program. You don't need to search for additional components that might be necessary for the Unified Linux Driver software: all required packages will be carried onto your system and installed automatically; this is possible on a wide set of the most popular Linux clones.

Installing the Unified Linux Driver

Installing the Unified Linux Driver

- 1 Make sure that you connect your machine to your computer. Turn both the computer and the machine on.
- 2 When the Administrator Login window appears, type in *root* in the Login field and enter the system password.

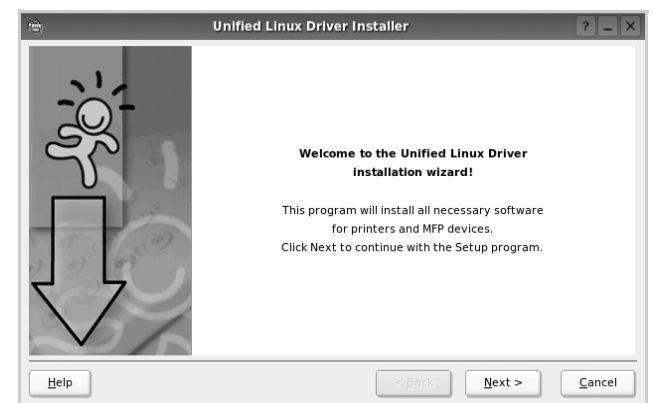
NOTE: You must log in as a super user (root) to install the printer software. If you are not a super user, ask your system administrator.

- 3 From the Samsung website, download and unpack the Unified Linux Driver package to your computer.
- 4 Click the  icon at the bottom of the desktop. When the Terminal screen appears, type in:

```
[root@localhost root]#tar zxf [FilePath]/
UnifiedLinuxDriver.tar.gz[root@localhost root]#cd
[FilePath]/cdroot/Linux[root@localhost Linux]#./
install.sh
```

NOTE: If you do not use the graphical interface and failed to install the software, you have to use the driver in the text mode. Follow the steps 3 to 4, and then follow the instructions on the terminal screen.

- 5 When the welcome screen appears, click **Next**.



- 6 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 onscreen help that is available through your system menu or can otherwise be called from the driver package Windows applications, such as **Unified Driver Configurator**.


NOTE: Installing the driver in the text mode:

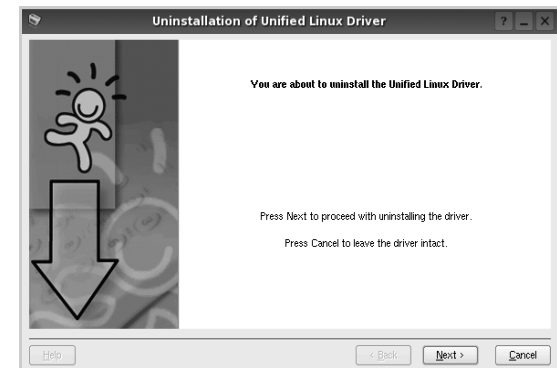
- If you do not use the graphical interface or have failed the driver installation, you have to use the driver in the text mode.
- Follow the step 1 to 3, then type `[root@localhost Linux]# ./install.sh`, than follow the instruction on the terminal screen. Then the installation completes.
- When you want to uninstall the driver, follow the installation instruction above, but type `[root@localhost Linux]# ./uninstall.sh` on the terminal screen.

Uninstalling the Unified Linux Driver

- 1 When the Administrator Login window appears, type in *root* in the Login field and enter the system password.

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

- 2 Click the  icon at the bottom of the desktop. When the Terminal screen appears, type in:
- ```
[root@localhost root]#cd /opt/Samsung/mfp/uninstall/
[root@localhost uninstall]#./uninstall.sh
```
- 3 Click **Uninstall**.
- 4 Click **Next**.



- 5 Click **Finish**.

## Using the Unified Driver Configurator

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

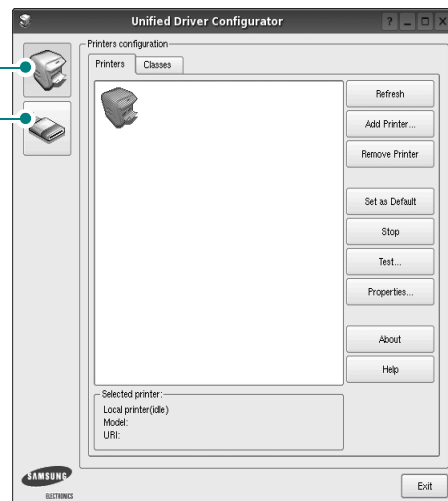
After installing the Unified Linux driver, the Unified Linux Driver Configurator icon will automatically be created on your desktop.

### Opening the Unified Driver Configurator

- 1 Double-click **Unified Driver Configurator** on the desktop.  
You can also click the Startup Menu icon and select **Samsung Unified Driver** and then **Unified Driver Configurator**.
- 2 Press each button on the Modules pane to switch to the corresponding configuration window.

Printers Configuration button

Ports Configuration button



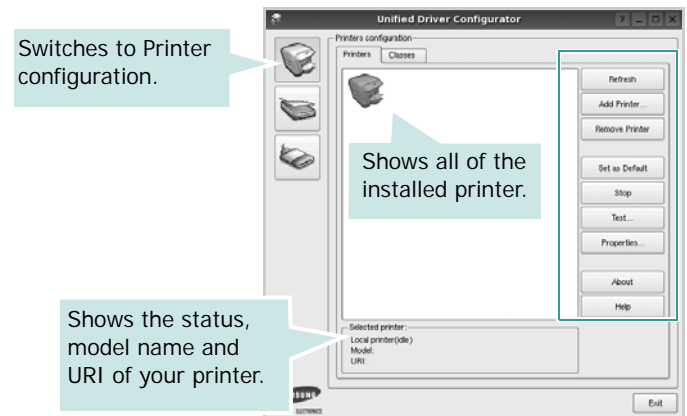
- You can use the onscreen help by clicking **Help**.
- 3 After changing the configurations, click **Exit** to close the Unified Driver Configurator.

## Printers Configuration

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

### Printers Tab

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

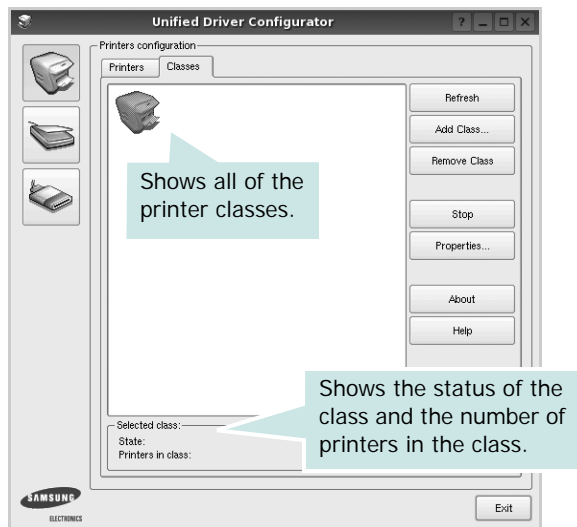


You can use the following printer control buttons:

- **Refresh:** renews the available printers list.
- **Add Printer:** allows you to add a new printer.
- **Remove Printer:** removes the selected printer.
- **Set as Default:** sets the current printer as a default printer.
- **Stop/Start:** stops/starts the printer.
- **Test:** allows you to print a test page to check if the machine is working properly.
- **Properties:** allows you to view and change the printer properties. For details, see page 24.

## Classes Tab

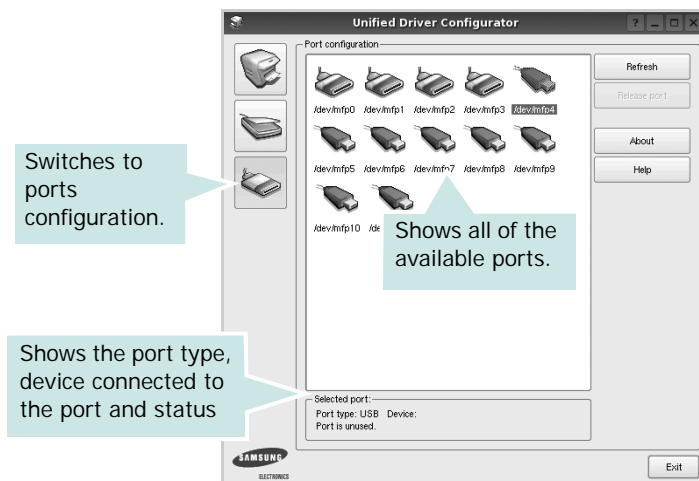
The Classes tab shows a list of available printer classes.



- **Refresh** : Renews the classes list.
- **Add Class...** : Allows you to add a new printer class.
- **Remove Class** : Removes the selected printer 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 busy state when its owner is terminated for any reason.

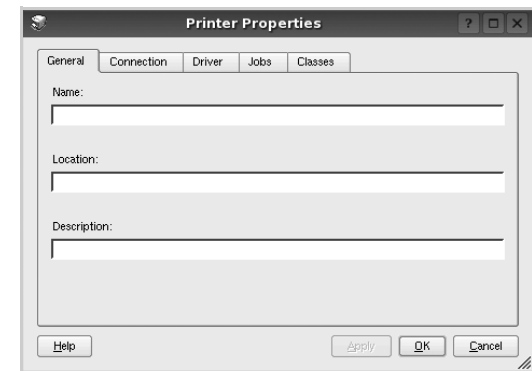


- **Refresh** : Renews the available ports list.
- **Release port** : Releases the selected port.

## Configuring Printer Properties

Using the 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:

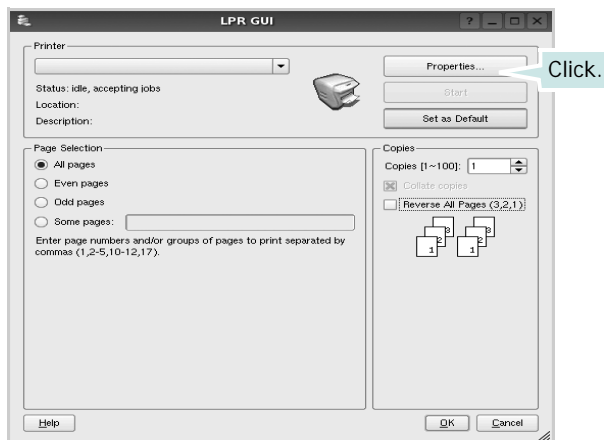
- **General**: allows you to change the printer location and name. The name entered in this tab displays on the printer list in Printers configuration.
  - **Connection**: allows you to view or select another port. If you change the printer port from USB to parallel or vice versa while in use, you must re-configure the printer 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**: shows the list of print jobs. Click **Cancel job** to cancel the selected job and select the **Show completed jobs** check box to see previous jobs on the job list.
  - **Classes**: shows the class that your printer is in. Click **Add to Class** to add your printer to a specific class or click **Remove from Class** to remove the printer from the selected class.
- 4 Click **OK** to apply the changes and close the Printer Properties Window.

# Printing a Document

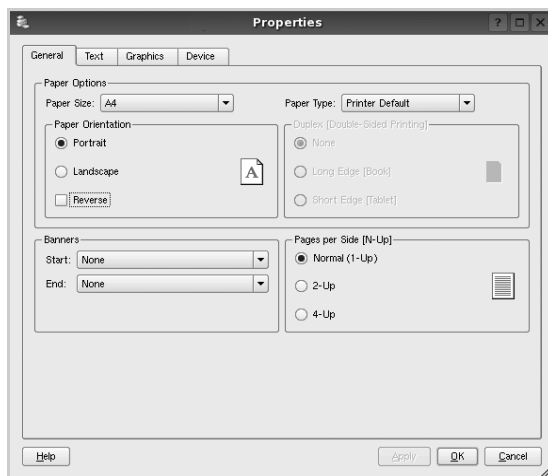
## Printing from Applications

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

- 1 From the application you are using, 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 printer and print job properties.



The following four tabs display at the top of the window.

- **General** - allows you to change the paper size, the paper type, and the orientation of the documents, enables the duplex feature, adds start and end banners, and changes the number of pages per sheet.
  - **Text** - allows you to specify the page margins and set the text options, such as spacing or columns.
  - **Graphics** - allows you to set image options that are used when printing images/files, such as color options, image size, or image position.
  - **Device**: allows you to set the print resolution, paper source, and destination.
- 5 Click **Apply** to apply the changes and close the Properties window.
  - 6 Click **OK** in the LPR GUI window to start printing.
  - 7 The Printing window appears, allowing you to monitor the status of your print job.

To abort the current job, click **Cancel**.

## Printing Files

You can print many different types of files on the Samsung machine device 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 printer from the list, and change the printer and print job properties.
- 3 Click **OK** to start printing.

For details about the properties window, see page 25.

# 7 Using Your Printer with a Macintosh

Your printer supports Macintosh systems with a built-in USB interface or 10/100 Base-TX network interface card. When you print a file from a Macintosh computer, you can use the CUPS driver by installing the PPD file.

---

**NOTE:** *Some printers do not support a network interface. Make sure that your printer supports a network interface by referring to Printer Specifications in your Printer User's Guide.*

---

This chapter includes:

- **Installing Software**
- **Setting Up the Printer**
- **Printing**

---

## Installing Software

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

## Printer driver

### Installing the Printer driver

- 1** Make sure that you connect your printer to the computer. Turn on your computer and printer.
- 2** Insert the CD-ROM which came with your printer into the CD-ROM drive.
- 3** Double-click **CD-ROM icon** that appears on your Macintosh desktop.
- 4** Double-click the **MAC\_Installer** folder.
- 5** Double-click the **Installer** icon.
- 6** Enter the 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 printer operations will be installed. If you select **Custom Install**, you can choose individual components to install.
- 9** The message which warns all application will close on your computer appears, Click **Continue**.
- 10** After the installation is finished, click **Quit**.

---

**NOTE:** After installation, you need to set up the connection between the printer and your computer. See "Setting Up the Printer" on page 27.

---

### Uninstalling the Printer driver

Uninstall is required if you are upgrading the software, or if installation fails.

- 1** Make sure that you connect your printer to the computer. Turn on your computer and printer.
- 2** Insert the CD-ROM which came with your printer into the CD-ROM drive.
- 3** Double-click **CD-ROM icon** that appears on your Macintosh desktop.
- 4** Double-click the **MAC\_Installer** folder.
- 5** Double-click the **Installer** icon.
- 6** Enter the password and click **OK**.
- 7** The Samsung Installer window opens. Click **Continue**.
- 8** Select **Uninstall** and then click **Uninstall**.
- 9** The message which warns all application will close on your computer appears, Click **Continue**.
- 10** When the uninstallation is done, click **Quit**.

## Setting Up the Printer

Follow the instructions on “Installing Software” on page 26 to install the PPD and Filter files on your computer.

- 1** Open the **Applications** folder → **Utilities**, and **Print Setup Utility**.
  - For MAC OS 10.5~10.6, open **System Preferences** from the **Applications** folder, and click **Print & Fax**.
- 2** Click **Add** on the **Printer List**.
  - For MAC OS 10.5~10.6, press the “+” icon then a display window will pop up.
- 3** For MAC OS 10.3, select the **USB** tab.
  - For MAC OS 10.4, click **Default Browser** and find the USB connection.
  - For MAC OS 10.5~10.6, click **Default** and find the USB connection.
- 4** For MAC OS 10.3, if Auto Select does not work properly, select **Samsung** in **Printer Model** and **your printer name** in **Model Name**.
  - For MAC OS 10.4, if Auto Select does not work properly, select **Samsung** in **Print Using** and **your printer name** in **Model**.
  - For MAC OS 10.5~10.6, if Auto Select does not work properly, select **Select a driver to use...** and **your printer name** in **Print Using**.

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

- 5** Click **Add**.

# Printing

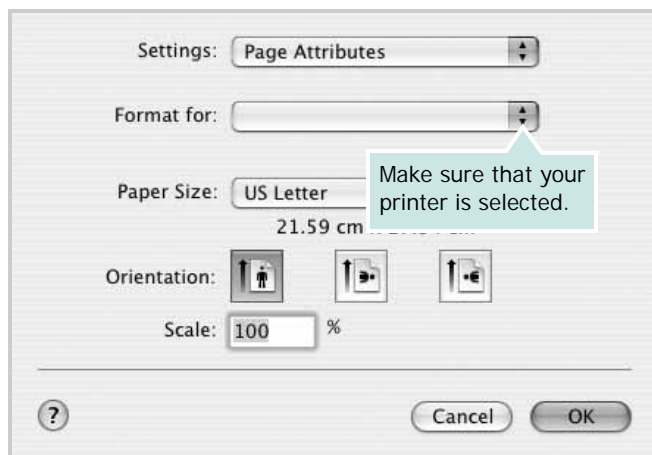
## NOTES:

- The Macintosh printer's properties window that appears in this User's Guide may differ depending on the printer in use. However the composition of the printer properties window is similar.
- *You can check your printer name in the supplied CD-ROM.*

## Printing a Document

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

- 1 Open a Macintosh 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, and other options and click **OK**.



▲ Mac OS 10.3

- 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** when you finish setting the options.

## Changing Printer Settings

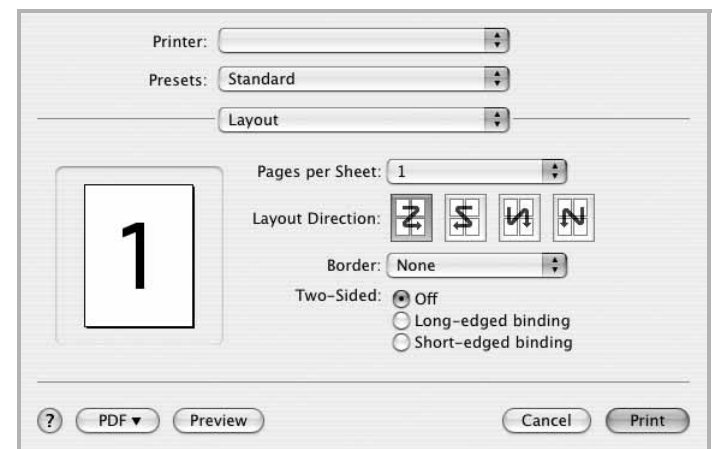
You can use advanced printing features when using your printer.

From your Macintosh application, select **Print** from the **File** menu. The printer name which appears in the printer properties window may differ depending on the printer in use. Except for the name, the composition of the printer properties window is similar.

**NOTES:** 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 **Presets** drop-down list to access the following features.



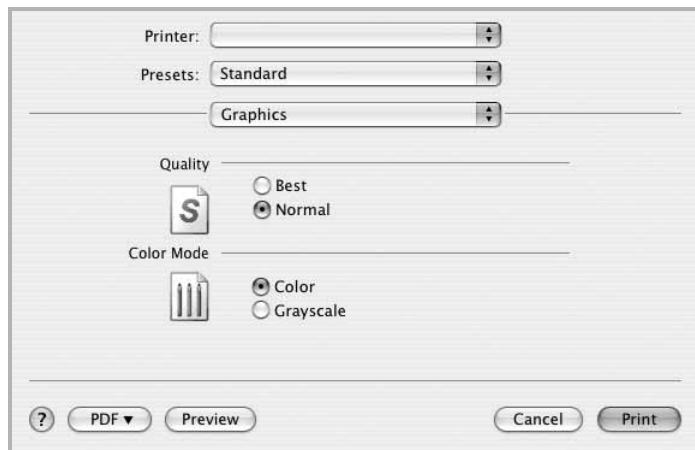
▲ Mac OS 10.4

- **Pages per Sheet:** This feature determines how many pages printed on one page. For details, see "Printing Multiple Pages on One Sheet of Paper" on the next column.
- **Layout Direction:** You can select the printing direction on a page as like the examples on UI.



## Graphics

The **Graphics** tab provides options for selecting **Resolution(Quality)** and **Color Mode**. Select **Graphics** from the **Presets**' drop-down list to access the graphic features.



▲ Mac OS 10.4

- **Resolution(Quality)**: You can 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.

## 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.

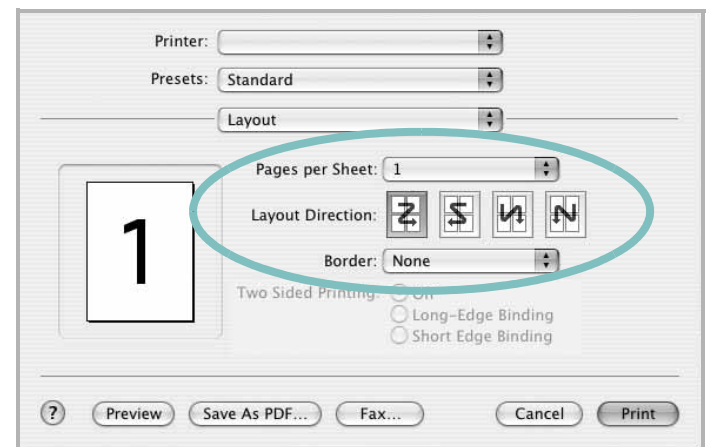


▲ Mac OS 10.4

## 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 From your Macintosh application, select **Print** from the **File** menu.
- 2 Select **Layout**.



▲ Mac OS 10.3

- 3 Select the number of pages you want to print on one sheet of paper on the **Pages per Sheet** drop-down list.
- 4 Select the page order from the **Layout Direction** option. To print a border around each page on the sheet, select the option you want from the **Border** drop-down list.
- 5 Click **Print**, and the printer prints the selected number of pages on one side of each page.

# SOFTWARE SECTION

## INDEX

### A

advanced printing, use 13

### B

booklet printing 14

### D

document, print  
    Macintosh 28  
    Windows 7  
double-sided printing 15

### E

Extras properties, set 11

### F

favorites settings, use 12

### G

Graphics properties, set 10

### H

help, use 12

### I

install  
    printer driver  
        Macintosh 26  
        Windows 4  
Installing 21  
installing  
    Linux software 21

### L

Layout properties, set

Windows 9  
Linux  
    driver, install 21  
    printer properties 24  
    printing 25

### M

Macintosh  
    driver  
        install 26  
        uninstall 26  
    printing 28  
    setting up the printer 27

### N

n-up printing  
    Macintosh 29  
    Windows 13

### O

orientation, print 25  
    Windows 9  
overlay  
    create 17  
    delete 17  
    print 17

### P

Paper properties, set 9  
paper size, set 9  
    print 25  
paper source, set 25  
    Windows 10  
paper type, set  
    print 25  
poster, print 14  
print  
    document 7  
    fit to page 15  
    from Macintosh 28

from Windows 7  
N-up  
    Macintosh 29  
    Windows 13  
overlay 17  
poster 16  
PRN 8  
scaling 15  
    watermark 16  
print resolution 25  
printer driver, install  
    Linux 21  
printer properties  
    Linux 25  
printer properties, set  
    Macintosh 28  
    Windows 8  
printer resolution, set  
    Windows 10  
printer software  
    install  
        Macintosh 26  
        Windows 4  
    uninstall  
        Macintosh 26  
        Windows 6  
printing  
    booklets 14  
    double-sided 15  
    from Linux 25

### R

resolution  
    printing 25

### S

setting  
    darkness 10  
    favorites 12  
    image mode 10  
    resolution  
        Windows 10  
    toner save 10

- true-type option 10
- software
  - install
    - Macintosh 26
    - Windows 4
  - reinstall
    - Windows 6
  - system requirements
    - Macintosh 26
  - uninstall
    - Macintosh 26
    - Windows 6
- status monitor, use 19

## T

- toner save, set 10

## U

- uninstall, software
  - Macintosh 26
  - Windows 6
- Uninstalling 22

## W

- watermark
  - create 16
  - delete 16
  - edit 16
  - print 16