



4. Troubleshooting

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

- **Tips for avoiding paper jams** 62
- **Clearing paper jams** 63
- **Understanding the status LED** 69
- **Understanding display messages** 71



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

Check the message on the display screen first to solve the error. If you cannot find a solution to your problem in this chapter, refer to the **Troubleshooting** chapter in the Advanced User's Guide.

If you cannot find a solution in the User's Guide or the problem persists, call for service.



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

- Ensure that the adjustable guides are positioned correctly (see "Tray overview" on page 27).
- Do not overload the tray. Ensure that the paper level is below the paper capacity mark on the inside of the tray.
- Do not remove paper from the tray while your machine is printing.
- Flex, fan, and straighten paper before loading.
- Do not use creased, damp, or highly curled paper.
- Do not mix paper types in a tray.
- Use only recommended print media (see "Print media specifications" on page 79).

Clearing paper jams



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



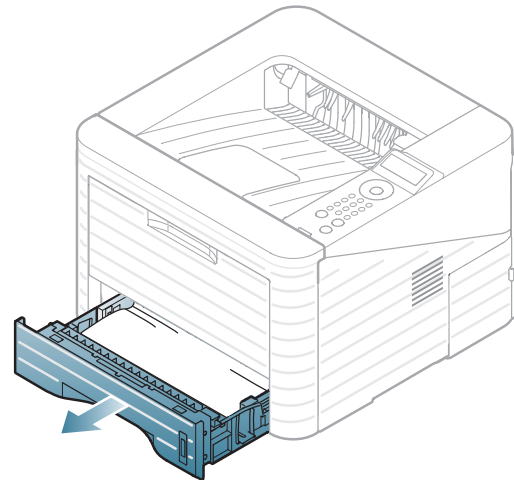
In tray 1



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

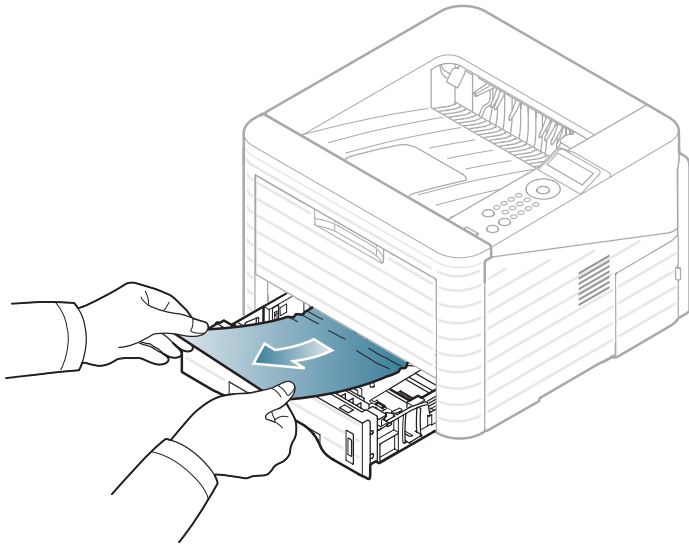
- 1 Open and close the front cover. The jammed paper is automatically ejected from the machine.
If the paper does not exit, go to the next step.

- 2 Pull out tray 1 .



Clearing paper jams

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



If the paper does not move when you pull, or if you do not see the paper in this area, check the fuser area around the toner cartridge (see "Inside the machine" on page 65).

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

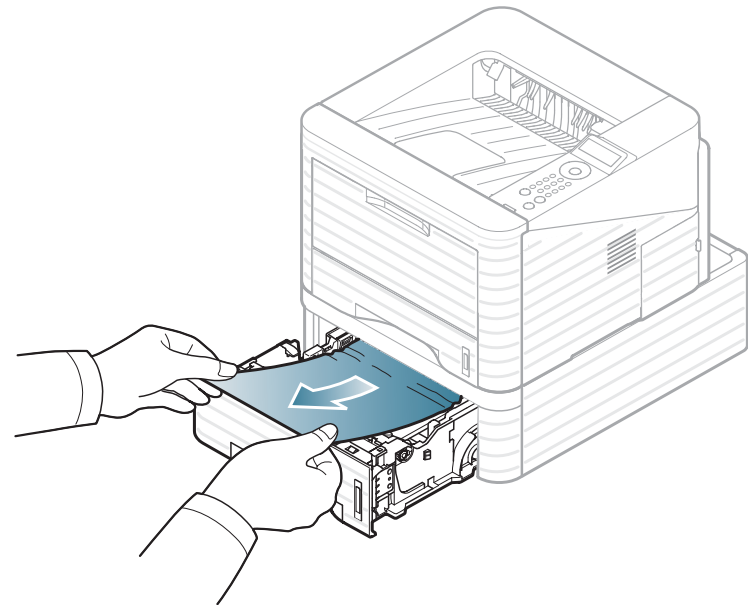


In optional tray2



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

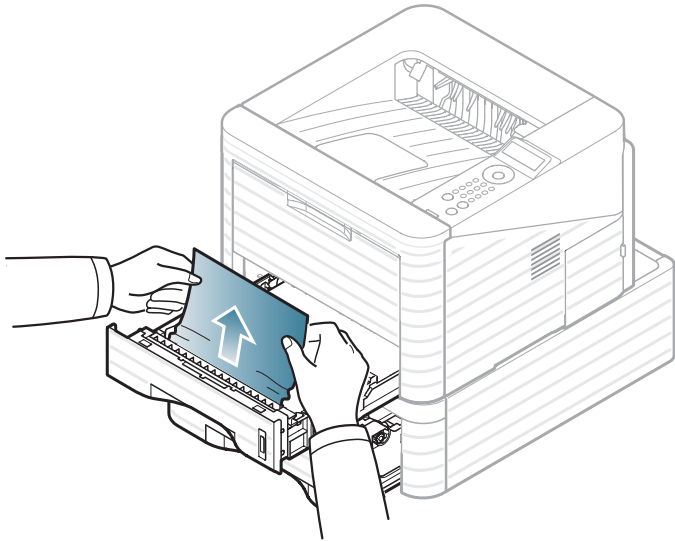
- 1 Pull out optional tray 2.
- 2 Remove the jammed paper from the machine.



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

Clearing paper jams

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



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

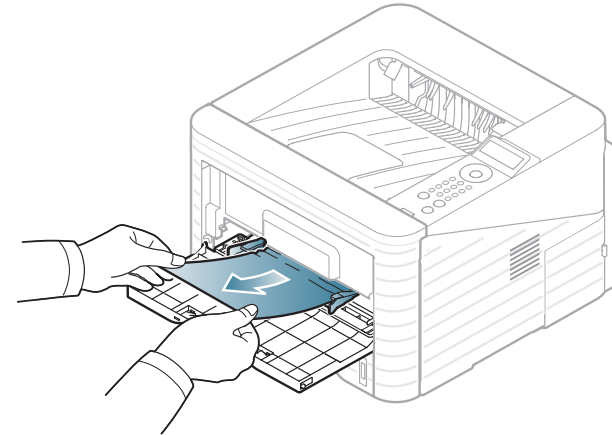


In the multi-purpose tray



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

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



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



Inside the machine



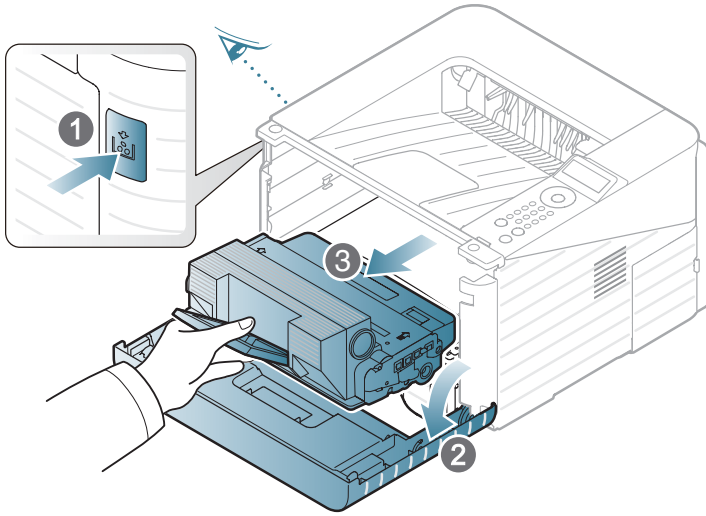
Click this link to open an animation about clearing a jam.



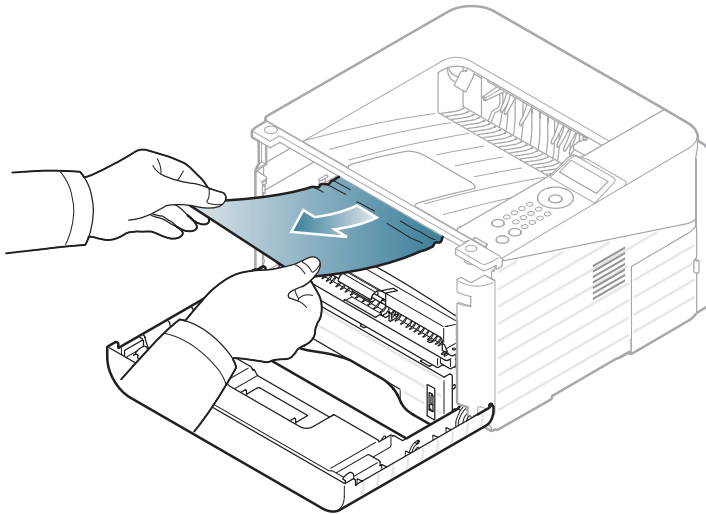
The fuser area is hot. Take care when removing paper from the machine.

Clearing paper jams

- 1 Open the front cover and pull the toner cartridge out.



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



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



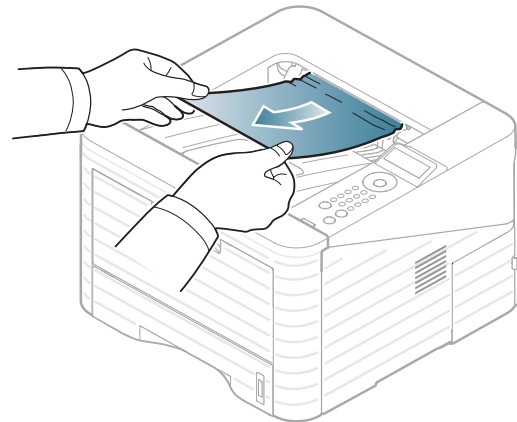
In the exit area



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

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

- 2 Gently pull the paper out of the output tray.

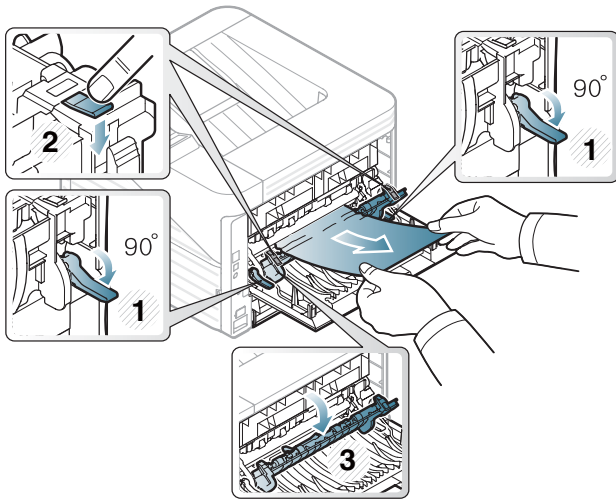


Clearing paper jams

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

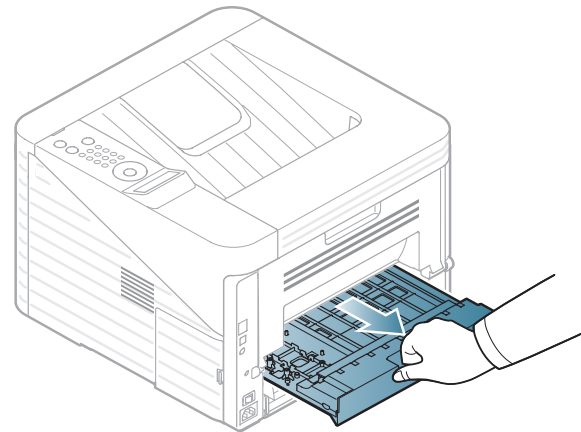
3 Open the rear cover.

4 Remove the jammed paper as shown in the following figure.

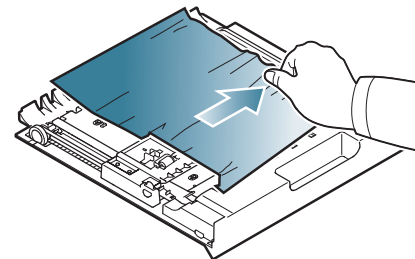


5 Close the rear cover. Printing automatically resumes.

1 Pull the duplex unit out of the machine.



2 Remove the jammed paper from the duplex unit.



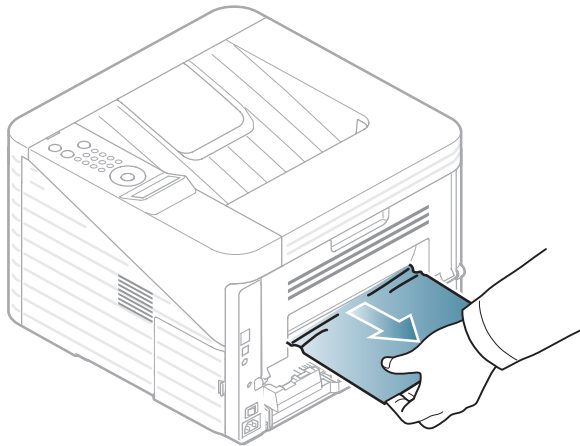
In the duplex unit area



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

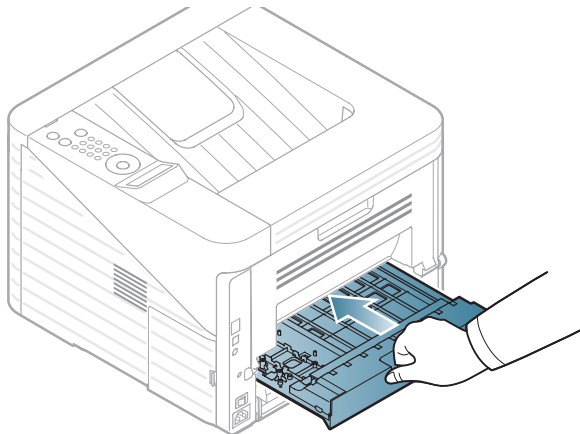
Clearing paper jams

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



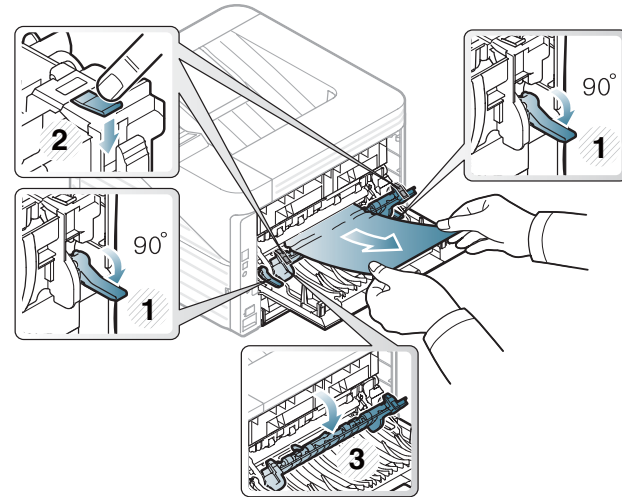
If you still do not see the paper, go to the next step.

- 3** Insert the duplex unit into the machine.



- 4** Open the rear cover.

- 5** Remove the jammed paper as shown in the following figure.



- 6** Close the rear cover. Printing automatically resumes.

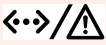
The color of the LED indicates the machine's current status.



- Some LEDs may not be available depending on model or country.
- To resolve the error, look at the error message and its instructions from the troubleshooting part.
- You also can resolve the error with the guideline from the computers's Samsung Printer Status or Smart Panel program window.
- If the problem persists, call a service representative.



Status LED

Status			Description
 (Status LED)	Off		The machine is off-line.
	Green	Blinking	The machine is receiving data from the computer or the machine is printing data.
		On	The machine is on-line and can be used.
	Red	Blinking	- A minor error has occurred and the machine is waiting for the error to be cleared. Check the display message. When the problem is cleared, the machine resumes. For some models that does not support the display screen on the control panel, this feature is not applicable. - 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 50).
		On	- A toner cartridge has almost reached its estimated cartridge life^a. It is recommended to replace the toner cartridge (see "Replacing the toner cartridge" on page 52). - The cover is opened. Close the cover. - There is no paper in the tray. Load paper in the tray. - The machine has stopped due to a major error. Check the display message (see "Understanding display messages" on page 71). - A paper jam has occurred (see "Clearing paper jams" on page 63).

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

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



Checking display messages



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

Paper Jam-related messages

Message	Meaning	Suggested solutions
Paper Jam in Tray 1	Paper has jammed in the paper feed area.	Clear the jam (see "In tray 1" on page 63).

Message	Meaning	Suggested solutions
Paper Jam in Tray 2	Paper has jammed in the optional tray.	Clear the jam (see "In optional tray2" on page 64).
Paper Jam in MP tray	Paper has jammed in the multi-purpose tray.	Clear the jam (see "In the multi-purpose tray" on page 65).
Paper Jam inside machine	Paper has jammed in the inside machine.	Clear the jam (see "Inside the machine" on page 65).
Paper Jam in exit area	Paper has jammed in the paper exit area.	Clear the jam (see "In the exit area" on page 66).
Paper Jam inside of duplex	Paper has jammed in the duplex area.	Clear the jam (see "In the duplex unit area" on page 67).

Toner-related messages

Message	Meaning	Suggested solutions
Install Toner	A toner cartridge is not installed.	Install a toner cartridge.
Not Compatible Toner cartridge	The toner cartridge you have installed is not for your machine.	Install a Samsung-genuine toner cartridge, designed for your machine.

Message	Meaning	Suggested solutions
Replace new cartridge	The indicated toner cartridge has almost reached its estimated cartridge life. The machine might stop printing.  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 "Available supplies" on page 47). The number of pages may be affected by operating environment, printing interval, media type, percentage of image area, and media size. Some amount of toner may remain in the cartridge even when replace new cartridge appears and the machine stops printing.	- You can choose Stop or Continue as shown on the control panel. If you select Stop, the printer stops printing and you cannot print any more without changing the cartridge. If you select Continue, the printer keeps printing but the printing quality cannot be guaranteed. - Replace the toner cartridge for the best print quality when this message appears. Using a cartridge beyond this stage can result in printing quality issues (see "Replacing the toner cartridge" on page 52).  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. - If the machine stops printing, replace the toner cartridge (See "Replacing the toner cartridge" on page 52).
Prepare new cartridge	Small amount of toner is left in the indicated cartridge. The estimated cartridge life of toner is close.	Prepare a new cartridge for a replacement. You may temporarily increase the printing quality by redistributing the toner (see "Redistributing toner" on page 50).

Tray-related messages

Message	Meaning	Suggested solutions
Paper Empty in Tray 1	There is no paper in tray 1.	Load paper in tray 1 (see "Loading paper in the tray/ optional tray" on page 29).
Paper Empty in Tray 2	There is no paper in tray 2.	Load paper in tray 2 (see "Loading paper in the tray/ optional tray" on page 29).
Paper Empty in MP tray	There is no paper in the multi-purpose tray.	Load paper in the multi-purpose tray (see "Loading in multi-purpose tray" on page 30).
Output bin full Remove paper	The output tray is full.	Remove papers from the output tray, the printer resumes printing.

Network-related messages

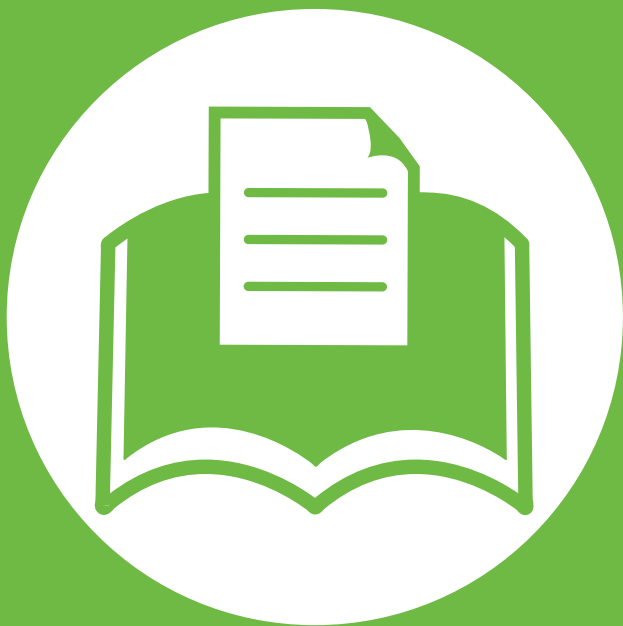
Message	Meaning	Suggested solutions
Network Problem IP Conflict	The network IP address you have set is being used by someone else.	Check the IP address and reset it if necessary (see Advanced Guide).
802.1x Network Error	Fail to authenticate.	Check the network authentication protocol. If the problem persists, contact your network administrator.

Misc. messages

Message	Meaning	Suggested solutions
Door Open Close it	The front cover or rear cover is not securely latched.	Close the cover until it locks into place.
Error [error number] Call for service	A system error has occurred	Reboot the power and try the printing job again. If the problem persists, please call for service.

Understanding display messages

Message	Meaning	Suggested solutions
Error [error number] Turn off then on	The machine unit cannot be controlled.	Reboot the power and try the printing job again. If the problem persists, please call for service.



5. Appendix

This chapter provides product specifications and information concerning applicable regulations.

- **Specifications** 77
- **Regulatory information** 87
- **Copyright** 95





General specifications



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

Items		Description
Dimension	Width x Length x Height	366 x 368 x 272.9mm (14.40 x 14.48 x 10.74 inches) without optional tray
Weight	Machine with consumables	10.28 kg (22.66 lbs)
Noise Level^a	Ready mode	26 dB (A)
	Print mode	52 dB (A)
Temperature	Operation	10 to 32°C (50 to 90°F)
	Storage (packed)	-20 to 40°C (-4 to 104°F)
Humidity	Operation	20 to 80% RH
	Storage (packed)	10 to 90% RH
Power rating^b	110 volt models	AC 110 - 127 V
	220 volt models	AC 220 - 240 V

Items		Description
Power consumption	Average operating mode	Less than 550 W
	Ready mode	Less than 60 W
	Power save mode	Less than 1.9 W(Normal), 1.4 W(EEE)
	Power off mode	Less than 0.1 W

- a. Sound Pressure Level, ISO 7779. Configuration tested: basic machine installation, A4 paper, simplex printing.
- b. See the rating label on the machine for the correct voltage (V), frequency (hertz) and type of current (A) for your machine.



Print media specifications

Type	Size	Dimensions	Print media weight/Capacity ^a	
			Tray1 / Optional tray	Multi-purpose tray
Plain paper	Letter	216 x 279 mm (8.5 x 11 inches)	70 to 90 g/m ² (19 to 24 lbs bond) • 250 sheets of 80 g/m ² (20 lbs bond) for tray1. • 520 sheets of 80 g/m ² (20 lbs bond) for optional tray.	70 to 90 g/m ² (19 to 24 lbs bond) • 50 sheets of 80 g/m ² (20 lb bond)
	Legal	216 x 356 mm (8.5 x 14 inches)		
	US Folio	216 x 330 mm (8.5 x 13 inches)		
	A4	210 x 297 mm (8.27 x 11.69 inches)		
	Oficio	216 x 343 mm (8.5 x 13.5 inches)		
	JIS B5	182 x 257 mm (7.17 x 10.12 inches)		
	ISO B5	176 x 250 mm (6.93 x 9.84 inches)		
	Executive	184 x 267 mm (7.25 x 10.5 inches)		
	A5	148 x 210 mm (5.83 x 8.27 inches)		
	A6	105 x 148 mm (4.13 x 5.83 inches)	• 150 sheets of 75 g/m ² (20 lbs bond)	

Type	Size	Dimensions	Print media weight/Capacity ^a	
			Tray1 / Optional tray	Multi-purpose tray
Envelope	Envelope Monarch	98 x 191 mm (3.87 x 7.5 inches)	Not available in tray1/optional tray.	75 to 90 g/m ² (20 to 24 lbs bond)
	Envelope No. 10	105 x 241 mm (4.12 x 9.5 inches)		
	Envelope DL	110 x 220 mm (4.33 x 8.66 inches)		
	Envelope C5	162 x 229 mm (6.38 x 9.02 inches)		
	Envelope C6	114 x 162 mm (4.49 x 6.38 inches)		
Thick paper	Refer to the Plain paper section	Refer to the Plain paper section	91 to 105 g/m ² (24 to 28 lbs bond)	91 to 105 g/m ² (24 to 28 lbs bond)
Thicker paper	Refer to the Plain paper section	Refer to the Plain paper section	Not available in tray1/optional tray.	164 to 220 g/m ² (44 to 58 lbs bond)
Thin paper	Refer to the Plain paper section	Refer to the Plain paper section	60 to 70 g/m ² (16 to 19 lbs bond)	60 to 70 g/m ² (16 to 19 lbs bond)
Transparency	Letter, A4	Refer to the Plain paper section	Not available in tray1/optional tray.	138 to 146 g/m ² (36.81 to 38.91 lbs bond)

Type	Size	Dimensions	Print media weight/Capacity ^a	
			Tray1 / Optional tray	Multi-purpose tray
Labels ^b	Letter, Legal, US Folio, A4, JIS B5, ISO B5, Executive, A5	Refer to the Plain paper section	Not available in tray1/optional tray.	120 to 150 g/m ² (32 to 40 lbs bond)
Card stock	Letter, Legal, US Folio, A4, JIS B5, ISO B5, Executive, A5	Refer to the Plain paper section	121 to 163 g/m ² (32 to 43 lbs bond)	121 to 163 g/m ² (32 to 43 lbs bond)
Bond paper	Refer to the Plain paper section	Refer to the Plain paper section	106 to 120 g/m ² (28 to 32 lbs bond)	106 to 120 g/m ² (28 to 32 lbs bond)
Minimum size (custom)		• Multi-purpose tray: 76 x 127 mm (3 x 5 inches) • Tray 1: 98 x 148.5 mm (3.86 x 5.85 inches)	60 to 163 g/m ² (16 to 43 lbs bond) Not available in optional tray.	
Maximum size (custom)		216 x 356 mm (8.5 x 14 inches)		

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

b. The smoothness of the labels used in this machine is 100 to 250 (sheffield). This means the numeric level of smoothness.



System requirements

Microsoft® Windows®

Operating system	Requirement (recommended)		
	CPU	RAM	free HDD space
Windows® 2000	Intel® Pentium® II 400 MHz (Pentium III 933 MHz)	64 MB (128 MB)	600 MB
Windows® XP	Intel® Pentium® III 933 MHz (Pentium IV 1 GHz)	128 MB (256 MB)	1.5 GB
Windows Server® 2003	Intel® Pentium® III 933 MHz (Pentium IV 1 GHz)	128 MB (512 MB)	1.25 GB to 2 GB
Windows Server® 2008	Intel® Pentium® IV 1 GHz (Pentium IV 2 GHz)	512 MB (2 GB)	10 GB
Windows Vista®	Intel® Pentium® IV 3 GHz	512 MB (1 GB)	15 GB
Windows® 7	Intel® Pentium® IV 1 GHz 32-bit or 64-bit processor or higher	1 GB (2 GB)	16 GB
	• Support for DirectX® 9 graphics with 128 MB memory (to enable the Aero theme). • DVD-R/W Drive		
Windows Server® 2008 R2	Intel® Pentium® IV 1 GHz (x86) or 1.4 GHz (x64) processors (2 GHz or faster)	512 MB (2 GB)	10 GB



- Internet Explorer 6.0 or higher is the minimum requirement for all Windows operating systems.
- Users who have administrator rights can install the software.

- **Windows Terminal Services** is compatible with your machine.
- For Windows 2000, Services Pack 4 or higher is required.

Macintosh

Operating system	Requirements (Recommended)		
	CPU	RAM	Free HDD space
Mac OS X 10.3 ~ 10.4	• Intel® processors • PowerPC G4/ G5	• 128 MB for a powerPC based Mac (512 MB) • 512 MB for an Intel-based Mac (1 GB)	1 GB
Mac OS X 10.5	• Intel® processors • 867 MHz or faster Power PC G4/ G5	512 MB (1 GB)	1 GB
Mac OS X 10.6	• Intel® processors	1 GB (2 GB)	1 GB
Mac OS X 10.7	• Intel® processors	2 GB	4 GB

Linux

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

Unix

Items	Requirements
Operating system	Sun Solaris 9, 10 (x86, SPARC) HP-UX 11.0, 11i v1, 11i v2, 11i v3 (PA-RISC, Itanium) IBM AIX 5.1, 5.2, 5.3, 5.4

Items	Requirements
Free HDD space	Up to 100 MB



Network environment



Network models only (see "Features by models" on page 5)

You need to set up the network protocols on the machine to use it as your network machine. The following table shows the network environments supported by the machine.

Items	Specifications
Network interface	Ethernet 10/100/1000 Base-TX
Network operating system	- Windows 2000/Server 2003 /Server 2008/XP/Vista/7/Server 2008 R2 - Various Linux OS - Mac OS X 10.3 ~ 10.7 - Unix

Items	Specifications
Network protocols	• TCP/IPv4 • DHCP, BOOTP • DNS, WINS, Bonjour, SLP, UPnP • Standard TCP/IP Printing (RAW), LPR, IPP, WSD • SNMPv 1/2/3, HTTP (S), IPSec • TCP/IPv6 (DHCP, DNS, RAW, LPR, SNMPv 1/2/3, HTTP (S), IPSec)

This machine is designed for a normal work environment and certified with several regulatory statements.



Laser safety statement

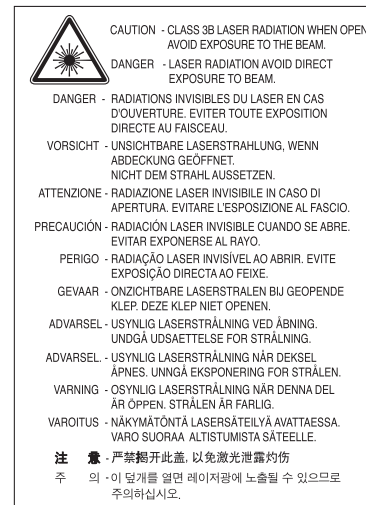
The printer is certified in the U.S. to conform to the requirements of DHHS 21 CFR, chapter 1 Subchapter J for Class I(1) laser products, and elsewhere is certified as a Class I laser product conforming to the requirements of IEC 60825-1 : 2007.

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

Warning

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

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



Taiwan only

警告使用者：

此為甲類資訊技術設備，於居住環境中使用時，可能會造成射頻擾動，在此種情況下，使用者會被要求採取某些適當的對策。



Ozone safety



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



Power saver



This printer contains advanced energy conservation technology that reduces power consumption when it is not in active use.

When the printer does not receive data for an extended period of time, power consumption is automatically lowered.

ENERGY STAR and the ENERGY STAR mark are registered U.S. marks.

For more information on the ENERGY STAR program see <http://www.energystar.gov>



Recycling



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



China only

回收和再循环

为了保护环境，我公司已经为废弃的产品建立了回收和再循环系统。我们会为您无偿提供回收同类废旧产品的服务。

当您要废弃您正在使用的产品时，请您及时与授权耗材更换中心取得联系，我们会及时为您提供服务。



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.

The United States of America only

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



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.



Taiwan only

低功率電波輻射性電機管理辦法

第十二條 經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

第十四條 低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前項合法通信，指依電信法規定作業之無線電通信。低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。



Russia only



Germany only

Das Gerät ist nicht für die Benutzung am Bildschirmarbeitsplatz gemäß BildscharbV vorgesehen.



Turkey only

- **RoHS**

EEE Yönetmeliğine Uygundur.
This EEE is compliant with RoHS.

- Bu ürünün ortalama yaşam süresi 7 yıl, garanti süresi 2 yıldır.



Replacing the fitted plug (for UK only)

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



Hereby, Samsung Electronics, declares that this [ML-375x Series] is in compliance with the essential requirements and other relevant provisions of Low Voltage Directive (2006/95/EC), EMC Directive (2004/108/EC).

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

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

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

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

EC Certification

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

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

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

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



Israel only

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



China only

产品中有毒有害物质或元素的名称及含量

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

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

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

© 2011 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 the Samsung logo are trademarks of Samsung Electronics Co., Ltd.
- Microsoft, Windows, Windows Vista, Windows 7, and Windows Server 2008 R2 are either registered trademarks or trademarks of Microsoft Corporation.
- 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.

REV. 1.00

User's Guide Advanced

imagine the possibilities

This guide provides information about installation, advanced configuration, operation and troubleshooting on various OS environments.

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



1. Software installation

This chapter provides instructions for installing essential and helpful software for use in an environment where the machine is connected via a cable. A locally connected machine is a machine directly attached to your computer using the cable. If your machine is attached to a network, skip the following steps below and go on to installing a network connected machine's driver (see Installing driver over the network¹⁵).

- **Installation for Macintosh** 3
- **Reinstallation for Macintosh** 5
- **Installation for Linux** 6
- **Reinstallation for Linux** 8



- If you are a Windows OS user, refer to the Basic Guide for installing the machine's driver.
- Only use a USB cable no longer than 3 meter (118 inches).

- 1 Make sure that the machine is connected to your computer and powered on.
- 2 Insert the supplied software CD into your CD-ROM drive.
- 3 Double-click the CD-ROM icon that appears on your Macintosh desktop.
- 4 Double-click the **MAC_Installer** folder > **Installer OS X** icon.
- 5 Enter the password and click **OK**.
- 6 Click **Continue**.
- 7 Read the license agreement and click **Continue**.
- 8 Click **Agree** to agree to the license agreement.
- 9 Select **Easy Install** and click **Install**. **Easy Install** is recommended for most users. All components necessary for machine operations will be installed.
If you select **Custom Install**, you can choose individual components to install.
- 10 When the message that warns that all applications will close on your computer appears, click **Continue**.
- 11 Select **Typical installation for a local printer** and then click **OK**.
- 12 Click **Continue** on the **Read Me** window.
- 13 After the installation is finished, click **Quit**.
- 14 Open the **Applications** folder > **Utilities** > **Print Setup Utility**.
 - For Mac OS X 10.5-10.7, open the **Applications** folder > **System Preferences** and click **Print & Fax**.
- 15 Click **Add** on the **Printer List**.
 - For Mac OS X 10.5-10.7, click the “+” icon; a display window will pop up.
- 16 For Mac OS X 10.3, select the **USB** tab.
 - For Mac OS X 10.4, click **Default Browser** and find the USB connection.
 - For Mac OS X 10.5-10.7, click **Default** and find the USB connection.

17 For Mac OS X 10.3, if Auto Select does not work properly, select **Samsung** in **Printer Model** and your machine name in **Model Name**.

- For Mac OS X 10.4, if Auto Select does not work properly, select **Samsung** in **Print Using** and your machine name in **Model**.
- For Mac OS X 10.5-10.7, if Auto Select does not work properly, select **Select a driver to use...** and your machine name in **Print Using**.

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

18 Click **Add**.

Reinstallation for Macintosh

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

- 1 Make sure that the machine is connected to your computer and powered on.
- 2 Insert the supplied software CD into your CD-ROM drive.
- 3 Double-click the CD-ROM icon that appears on your Macintosh desktop.
- 4 Double-click the **MAC_Installer** folder > **Installer OS X** icon.
- 5 Enter the password and click **OK**.
- 6 Click **Continue**.
- 7 Read the license agreement and click **Continue**.
- 8 Click **Agree** to agree to the license agreement.
- 9 Select **Uninstall** and click **Uninstall**.
- 10 When the message which warns that all applications will close on your computer appears, click **Continue**.
- 11 When the uninstall is done, click **Quit**.



If a machine has already been added, delete it from the **Print Setup Utility** or **Print & Fax**.

Installation for Linux

You need to download Linux software packages from the Samsung website to install the printer software (<http://www.samsung.com/printer>).



Installing the Unified Linux Driver

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



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

- 3 From the Samsung website, download the Unified Linux Driver package to your computer.
- 4 Right-click the **Unified Linux Driver** package and extract the package.
- 5 Double click **cdroot** > **autorun**.

6

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

7

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

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



Installing the Smart Panel

1

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

2

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



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

3

From the Samsung website, download the **Smart Panel** package to your computer.

- 4 Right-click the Smart Panel package and extract the package.
- 5 Double click **cdroot** > **Linux** > **smartpanel** > **install.sh**.



Installing the Printer Settings Utility

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



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

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

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

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

You must log in as a super user (root) to uninstall the printer driver. If you are not a super user, ask your system administrator.
- 3 Click the icon at the bottom of the desktop. When the Terminal screen appears, type in the following.

[root@localhost root]#cd /opt/Samsung/mfp/uninstall/
[root@localhost uninstall]#./uninstall.sh
- 4 Click **Uninstall**.
- 5 Click **Next**.
- 6 Click **Finish**.



2. Using a network-connected machine

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

- **Useful network programs** 10
- **Wired network setup** 11
- **Installing driver over the network** 15
- **IPv6 configuration** 22

Useful network programs

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



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



SyncThru™ Web Service

The web server embedded on your network machine allows you to do the following tasks (see "Using SyncThru™ Web Service" on page 24):

- Check the supplies information and status.
- Customize machine settings.
- Set the email notification option. When you set this option, the machine status (toner cartridge shortage or machine error) will be sent to a certain person's email automatically.
- Configure the network parameters necessary for the machine to connect to various network environments.



SyncThru™ Web Admin Service

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



SetIP

This utility program allows you to select a network interface and manually configure the IP addresses for use with the TCP/IP protocol.

- See "IPv4 configuration using SetIP (Windows)" on page 11.
- See "IPv4 configuration using SetIP (Macintosh)" on page 12.
- See "IPv4 configuration using SetIP (Linux)" on page 13.



TCP/IPv6 is not supported by this program.

Wired network setup

You must set up the network protocols on your machine to use it on your network.

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

- For models that do not have the display screen on the control panel, use the SyncThru™ Web Service or SetIP program.
 - See "Using SyncThru™ Web Service" on page 62.
 - See "Setting IP address" on page 11.
- For models that have the display screen on the control panel, configure the network setting by pressing  (**Menu**) button > **Network** on the control panel (see "Network" on page 36).



Printing a network configuration report

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

- **The machine has the display screen:** Press the  (**Menu**) button on the control panel and select **Network** > **Network Config. (Network Configuration)** > **Yes**.
- **The machine does not have the display screen:** Press the  (**Cancel** or **Stop/Clear**) button for more than five seconds on the control panel.

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

For example:

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



Setting IP address

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

IPv4 configuration using SetIP (Windows)

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

- 1 Install this program from the supplied CD-ROM by double-click **Application** > **SetIP** > **Setup.exe**.
- 2 Follow the instructions in the installation window.
- 3 Connect your machine to the network with a network cable.

- 4 Turn on the machine.
- 5 From the Windows **Start** menu, select **All Programs** > **Samsung Printers** > **SetIP** > **SetIP**.
- 6 Click the  icon (third from left) in the SetIP window to open the TCP/IP configuration window.
- 7 Enter the machine's new information into the configuration window as follows. In a corporate intranet, you may need to have this information assigned by a network manager before proceeding.



Find the machine's MAC address from the **Network Configuration Report** (see "Printing a network configuration report" on page 11) and enter it without the colons. For example, 00:15:99:29:51:A8 becomes 0015992951A8.

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

IPv4 configuration using SetIP (Macintosh)

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



The following instructions may vary from your model.

- 1 Connect your machine to the network with a network cable.
- 2 Insert the Installation CD-ROM, and open the disk window, select **MAC_Installer** > **MAC_Printer** > **SetIP** > **SetIPApplet.html**.

Wired network setup

- 3 Double-click the file and **Safari** will automatically open, then select **Trust**. The browser will open the **SetIPApplet.html** page that shows the printer's name and IP address information.
- 4 Click the  icon (third from left) in the SetIP window to open the TCP/IP configuration window.
- 5 Enter the machine's new information into the configuration window. In a corporate intranet, you may need to have this information assigned by a network manager before proceeding.



Find the machine's MAC address from the **Network Configuration Report** (see "Printing a network configuration report" on page 11) and enter it without the colons. For example, 00:15:99:29:51:A8 becomes 0015992951A8.

- 6 Select **Apply**, then **OK**, and **OK** again.
- 7 Quit **Safari**.

IPv4 configuration using SetIP (Linux)

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



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

- 1 Open **/opt/Samsung/mfp/share/utls/**.
- 2 Double-click the **SetIPApplet.html** file.
- 3 Click to open the TCP/IP configuration window.
- 4 Enter the machine's new information into the configuration window. In a corporate intranet, you may need to have this information assigned by a network manager before proceeding.



Find the machine's MAC address from the **Network Configuration Report** (see "Printing a network configuration report" on page 11) and enter it without the colons. For example, 00:15:99:29:51:A8 becomes 0015992951A8.

- 5 The machine will automatically print the **Network Configuration Report**.



Windows

- 1 Make sure that the machine is connected to the network and powered on. Also, your machine's IP address should have been set (see "Setting IP address" on page 11).



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

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

- 3 Select **Install Now**.



The **Custom Installation** allows you to select the machine's connection and choose individual components to install. Follow the instructions on the window.

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

The program searches for the machine.



If your machine is not found on the network or locally, an error message appears.

- **Check if you want to install the software without connection of the printer.**
 - Check this option to install this program without a machine connected. In this case, the print a test page window will be skipped, and completes the installation.
- **Search again**
When you press this button, the firewall notice window appears.
 - Turn off the firewall and **Search again**. For Windows operating system, click **Start > Control Panel > Windows Firewall**, and inactivate this option.
 - Turn off the firewall from the third party's program beside the operating system. Refer to the manual provided by individual programs.

- **Direct Input**

The **Direct Input** allows you to search for a specific machine on the network.

- **Search by IP address:** Enter the IP address or the host name. Then click **Next**.

To verify your machine's IP address, print a network configuration report (see "Printing a network configuration report" on page 11).

- **Search by network path:** To find a shared machine (UNC Path), enter the shared name manually or find a shared printer by clicking the **Browse** button. Then click **Next**.

- **Help**

If your machine is not connected to the computer or network, this help button gives detailed information about how to connect the machine.

- **SNMP Community Name**

If your system administrator set the new **SNMP Community Name** on the machine, you can find the machine in the network. Contact your system administrator for new **SNMP Community Name**.

- 5 The searched machines will be shown on the screen. Select the one you wish to use and click **OK**.



If the driver searched only one machine, the confirmation window appears.

- 6 Follow the instructions in the installation window.



Macintosh

- 1 Make sure that the machine is connected to your network and powered on. Also, your machine's IP address should have been set (see "Setting IP address" on page 11).
- 2 Insert the supplied software CD into your CD-ROM drive.
- 3 Double-click the CD-ROM icon that appears on your Macintosh desktop.
- 4 Double-click the **MAC_Installer** folder > **Installer OS X** icon.
- 5 Enter the password and click **OK**.
- 6 Click **Continue**.
- 7 Read the license agreement and click **Continue**.

Installing driver over the network

- 8 Click **Agree** to agree to the license agreement.
 - 9 Select **Easy Install** and click **Install**. **Easy Install** is recommended for most users. All components necessary for machine operations will be installed.

If you select **Custom Install**, you can choose individual components to install.
 - 10 When the message which warns that all applications will close on your computer appears, click **Continue**.
 - 11 Select **Typical installation for a network printer** and then click **OK**.
 - 12 The SetIP program automatically runs.
 - 13 Click **OK** to continue the installation.
 - 14 Click **Continue** on the **Read me** window.
 - 15 After the installation is finished, click **OK**.
 - 16 Open the **Applications** folder > **Utilities** > **Print Setup Utility**.
 - For Mac OS X 10.5-10.7, open the **Applications** folder > **System Preferences** and click **Print & Fax**.
 - 17 Click **Add** on the **Printer List**.
 - For Mac OS X 10.5-10.7, click the “+” icon. A display window will pop up.
 - 18 For Mac OS X 10.3, select the **IP Printing** tab.
 - For Mac OS X 10.4, click **IP Printer**.
 - For Mac OS X 10.5-10.7, click **IP**.
 - 19 Select **HP Jetdirect - Socket** in **Protocol**.
-
- When printing a document containing many pages, printing performance may be enhanced by choosing **Socket** for **Printer Type** option.
- 20 Enter the machine's IP address in the **Address** input field.
 - 21 Enter the queue name in the **Queue** input field. If you cannot determine the queue name for your machine server, try using the default queue first.

22 For Mac OS X 10.3, if Auto Select does not work properly, select **Samsung** in **Printer Model** and your machine name in **Model Name**.

- For Mac OS X 10.4, if Auto Select does not work properly, select **Samsung** in **Print Using** and your machine name in **Model**.
- For Mac OS X 10.5-10.7, if Auto Select does not work properly, choose **Select Printer Software** and your machine name in **Print Using**.

23 Click **Add**.

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



Linux

You need to download Linux software packages from the Samsung website to install the printer software (<http://www.samsung.com/printer>).



To install other software:

- See "Installing the Smart Panel" on page 6.
- See "Installing the Printer Settings Utility" on page 7.

Install the Linux driver and add network printer

- 1** Make sure that the machine is connected to your network and powered on. Also, your machine's IP address should have been set.
- 2** Download the Unified Linux Driver package from the Samsung website.
- 3** Extract the UnifiedLinuxDriver.tar.gz file and open the new directory.
- 4** Double-click the **Linux** folder > **install.sh** icon.
- 5** The Samsung installer window opens. Click **Continue**.
- 6** The add printer wizard window opens. Click **Next**.
- 7** Select network printer and click **Search** button.
- 8** The machine's IP address and model name appears on list field.
- 9** Select your machine and click **Next**.
- 10** Input the printer description and **Next**.

Installing driver over the network

11 After the machine is added, click **Finish**.

12 When installation is done, click **Finish**.

Add a network printer

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



UNIX



- Make sure your machine supports the UNIX operating system before installing the UNIX printer driver (see basic guide)
- The commands are marked with "", when typing the commands, do not type "".

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

Installing the UNIX printer driver package

The installation procedure is common for all variants of UNIX OS mentioned.

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

Installing driver over the network

- 3 Copy the appropriate driver archive to the target UNIX computer.



See administration guide of your UNIX OS for details.

- 4 Unpack the UNIX printer driver package.
For example, on IBM AIX, use the following commands.
"gzip -d < enter the package name | tar xf -"

- 5 Go to the unpacked directory.

- 6 Run the install script.
"./install"

install is the installer script file which is used to install or uninstall the UNIX Printer Driver package.

Use **"chmod 755 install"** command to give the permission to the installer script.

- 7 Execute the **"./install -c"** command to verify installation results.

- 8 Run **"installprinter"** from the command line. This will bring up the **Add Printer Wizard** window. Setup the printer in this window referring to the following procedures.



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

"accept <printer_name>"

"enable <printer_name>"

Uninstalling the printer driver package



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

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

Installing driver over the network

To re-install it, use the command “**. /install**” to reinstall the binaries.

Setting up the printer

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

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



IPv6 is supported properly only in Windows Vista or higher.



If the IPv6 network seems to not be working, set all the network setting to the factory defaults and try again using **Clear Setting** (see "Network" on page 36).

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

- 1 Connect your machine to the network with a network cable.
- 2 Turn on the machine.
- 3 Print a **Network Configuration Report** that will check IPv6 addresses (see "Printing a network configuration report" on page 11).
- 4 Select **Start > Control Panel > Printers and Faxes**.
- 5 Click **Add a printer** in the left pane of the **Printers and Faxes** windows.
- 6 Click **Add a local printer** in the **Add Printer** windows.

7

The **Add Printer Wizard** window appears. Follow the instructions in the window.



If the machine does not work in the network environment, activate IPv6. Refer to the next section followed by.



Activating IPv6

- 1 Press the  (**Menu**) button on the control panel.
- 2 Press **Network > TCP/IP (IPv6) > IPv6 Activate**.
- 3 Select **On** and press **OK**.
- 4 Turn the machine off and turn it on again.
- 5 Reinstall your printer driver.



Setting IPv6 addresses

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

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

DHCPv6 address configuration (Stateful)

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

- 1 Press the  (**Menu**) button on the control panel.
- 2 Press **Network** > **OK** > **TCP/IP (IPv6)** > **OK** > **DHCPv6 Config**.

3 Press **OK** to select the required value you want.

- **DHCPv6 Addr.:** Always use DHCPv6 regardless of router request.
- **DHCPv6 Off:** Never use DHCPv6 regardless of router request.
- **Router:** Use DHCPv6 only when requested by a router.

Manual address configuration

- 1 Start a web browser, such as Internet Explorer, that supports IPv6 addressing as a URL.
- 2 When the **SyncThru™ Web Service** window opens, move the mouse cursor over the **Settings** of the top menu bar and then click **Network Settings**.
- 3 Click **TCP/IPv6** on the left pane of the website.
- 4 Select the **Manual Address** check box. Then, the **Address/Prefix** text box is activated.
- 5 Enter the rest of the address (e.g.,:3FFE:10:88:194::AAAA. "A" is the hexadecimal 0 through 9, A through F).
- 6 Click the **Apply** button.



Using SyncThru™ Web Service

- 1 Start a web browser, such as Internet Explorer, that supports IPv6 addressing as a URL.
- 2 Select one of the IPv6 addresses (**Link-local Address**, **Stateless Address**, **Stateful Address**, **Manual Address**) from **Network Configuration Report** (see "Printing a network configuration report" on page 11).
- 3 Enter the IPv6 addresses (e.g.,: http://[FE80::215:99FF:FE66:7701]).



Address must be enclosed in '[']' brackets.



3. Useful setting menus

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

• Before you begin reading a chapter	26
• Information	27
• Layout	28
• Paper	30
• Graphic	31
• System setup	32
• Emulation	35
• Network	36
• Admin setup	37

Before you begin reading a chapter

This chapter explains all the features available for this series' models to help users easily understand the features.

You can check the features available for each model in the Basic Guide.

The following are tips for using this chapter

- The control panel provides access to various menus to set up the machine or use the machine's functions. These menus can be accessed by pressing  (**Menu**).
- Some menus may not appear on the display depending on options or models. If so, it is not applicable to your machine.
- For models that do not have the  (**Menu**) on the control panel, this feature is not applicable.
- Some menu names may differ from your machine depending on its options or the models.



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

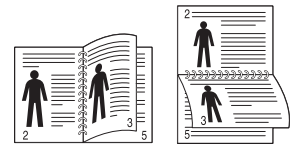
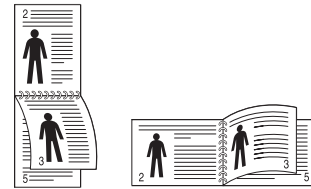
Item	Description
Menu Map	Prints the menu map which shows the layout and current settings of this machine.
Configuration	Prints a report on the machine's overall configuration.
Supplies Info.	Prints supplies' information page.
Demo Page	Prints the demo page to check whether your machine is printing properly or not.
PCL Font (PCL Font List)	Prints the PCL font list.
PS Font (PS Font List)	Prints the PS font list.
EPSON Font (EPSON Font List)	Prints the EPSON font list.
KSC5843 Font List	Prints the KS font list.
KSC5895 List	Prints the KS5895 font list.
KSSM Font List	Prints the KSSM font list.

Item	Description
Stored Job List	Prints jobs currently stored in the optional memory or on a hard disk (HDD).
Usage Counter	Prints a usage page. The usage page contains the total number of pages printed.
Completed Job	Prints list of completed jobs.
Account	This is used only available when Job Accounting is enabled from the SyncThru™ Web Admin Service. You can print a report of printout counts for each user.



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

Item	Description
Orientation	Selects the direction in which information is printed on a page.
Common Margin	• Simplex Margin: Sets the margin for one-sided printing. • Duplex: Sets the margin for double-sided printing. • Binding: When printing on both sides of the paper, side A's margin closest to the binding will be the same as side B's margin closest to the binding. Likewise, the sides' margins farthest from the binding will be the same.
MP Tray	Sets the paper margins in multi-purpose tray. • Simplex: Sets the margin for one-sided printing. • Duplex: Sets the margins for double-sided printing.

Item	Description
Tray X	Sets the paper margins in trays. • Simplex: Sets the margin for one-sided printing. • Duplex: Sets the margins for double-sided printing.
Emulation Mar. (Emulation Margin)	Sets the paper margins for emulation print page.
Duplex	To print on both sides of the paper, choose the binding edge. • Off: Disables this option. • Long Edge: This binding is the conventional layout used in bookbinding.  • Short Edge: This binding is the conventional layout used in calendars. 

Item	Description
Landscape Stapling Position	Selects the location of the staple.



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

Item	Description
Copies	Selects the number of copies.
MP Tray / [Tray<x>]	• Paper Size: Selects the default paper size. • Paper Type: Selects the paper type currently loaded in the tray.
Paper Source	Sets from which tray to use paper.
Tray Chaining (Auto Tray Switch)	When you select any other value except Auto from Paper Source and the selected tray is empty, you can set the machine to automatically print from other trays.  If you select Auto from Paper Source, this message does not appear.
Tray Confirm	Activates the tray confirmation message. If you open and close a tray, a window asking you whether to set the paper size and type for the tray just opened appears.



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

Item	Description
Resolution	Specifies the number of dots printed per inch (dpi). The higher the setting, the sharper printed characters and graphics.
Darken Text (Clear Text)	Prints text darker than on a normal document.
Darkness	Lightens or darkens the print on the page. The Normal setting usually produces the best result. Use the Light toner density setting to save toner.



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

Item	Description
Date & Time	Sets the date and time.
Clock Mode	Selects the format for displaying time between 12 hr and 24 hr.
Form Menu	• Off: Prints in normal mode. • Single Form: Prints all page using the first form. • Double Form: Prints the front page using the first form and the back page using the second form.
Select Form	Form overlay is images stored on the printer's hard disk as a special file format that can be printed in layers on any document.
Language	Sets the language of the text that appears on the control panel display.
Default Paper Size	You can set the default paper size to use.

Item	Description
Power Save	Sets how long the machine waits before going to power save mode. When the machine does not receive data for an extended period of time, power consumption is automatically lowered.
Wakeup Event	You can set the condition to wake up from power-save mode. Set the item on. • Button Press: When you press any button except power button, the machine wake up from the power save mode. • Printer: When you open or close the paper tray, the machine wake up from the power save mode.
Auto Continue	Determine whether or not the machine continues printing when it detects the paper does not match the paper settings. • Off: If a paper mismatch occurs, the machine waits until you insert the correct paper. • On: If a paper mismatch occurs, an error message will display. The machine waits for about 30 second, then automatically clear the message and continue printing.

Item	Description
Paper Substit.	Automatically substitutes the printer driver's paper size to prevent the paper mismatch between Letter and A4. For example, if you have A4 paper in the tray but you set the paper size to Letter in the printer driver, the machine prints on A4 paper and vice versa.
Paper Mismatch	Determine whether to disregard the paper mismatch error or not. Select Off , then the machine does not stop printing even if the paper mismatches.
Altitude Adj.	Optimize print quality according to the machine's altitude.
Auto CR	Allows you to append the required carriage return to each line feed, which is useful for Unix or DOS users.
Job Timeout	When there is no input for a certain period of time, the machine cancels the current job. You can set the amount of time the machine will wait before canceling the job.
Multi-Bin	• Mode: Selects the multi-bin mode you want to use. • Default Bin: Selects the bin to use as a default.

Item	Description
Maintenance	• Clean Drum: Cleans the OPC drum of the cartridge by printing a sheet. • Clean Fuser: Cleans the fuser by printing a sheet. • CLR Empty Msg.: This option appears only when toner cartridge is empty. • Supplies Info.: Allows you to check how many pages are printed and how much toner is left in the cartridge. • TonerLow Alert: If toner in the cartridge has run out, a message informing the user to change the toner cartridge appears. You can set the option for this message to appear or not. • Paper Stacking: If you use a machine in a humid area, or you are using the damp print media caused by a high humidity, the print-outs on the output tray may be curled and may not be stacked properly. In this case, you can set the machine to use this function to let print-outs stacked firmly. But, using this function will make the print speed slow.
Import Setting	Imports data stored on a USB memory stick to the machine.

Item	Description
Export Setting	Exports data stored on a USB memory stick to the machine.
Toner Save	Activating this mode extends the life of your toner cartridge and reduces your cost per page beyond what one would experience in the normal mode, but it reduces print quality.
Quiet Mode	You can reduce the printing noise by turning this menu on. However, the printing speed and quality may be declined.
Eco Setup	Allows you to save print resources and enables eco-friendly printing. • Default Mode: Select whether to turn the Eco mode on or off.  Onforce: Sets the Eco mode on with password. If a user wants to turn the Eco mode on/off, the user needs to enter the password. • Change Template: Selects the eco template set from the SyncThru™ Web Service.
Clear Setting	Restores the machine's factory default settings.



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

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



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

Option	Description
TCP/IP (IPv4)	Selects the appropriate protocol and configure parameters to use the network environment.  There are lots of parameters to be set. If you are not sure, leave as is, or consult the network administrator.
TCP/IP (IPv6)	Selects this option to use the network environment through IPv6 (see "IPv6 configuration" on page 22).
Ethernet Speed	Configure the network transmission speed.
802.1x	You can select the user authentication for network communication. For detailed information consult the network administrator.
Clear Setting	Reverts the network settings to the default values.

Option	Description
Network Conf. (Network Configuration)	This list shows information on your machine's network connection and configuration.
Net. Activate	You can set whether to use Ethernet on or off.
Http Activate	You can set whether to use SyncThru™ Web Service or not.



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

Item	Description
Password Protect	Sets the password to access the Admin Setup menu. Select On to use this option and enter the password.
Change Password	Changes the machine's password for accessing the Admin Setup .

Item	Description
Maintenance	• Clean Fuser: Cleans the fuser by printing a sheet. The printed sheet has toner debris on it. • CLR Empty Msg.: Prevents the TonerLow Alert message from appearing on the display. • Supplies Info.: Allows you to check how many pages are printed and how much toner is left in the cartridge. • TonerLow Alert: If toner in the cartridge has run out, a message informing the user to change the toner cartridge appears. You can set the option for this message to appear or not. • Ram Disk: Enables/disables RAM disk to manage jobs. Depending on the installed optional memory size, you can set the RAM disk size to between 32 and 64 MB. This option does not appear if you have installed hard disk drive (HDD).



4. Special features

This chapter explains special printing features.

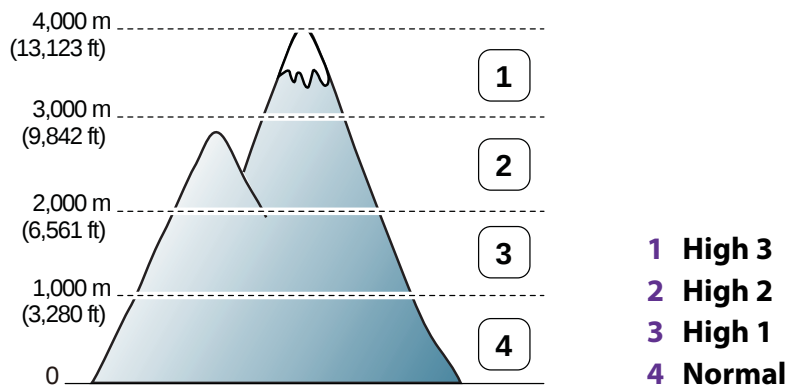
- **Altitude adjustment** 39
- **Changing the font setting** 40
- **Changing the default print settings** 41
- **Setting your machine as a default machine** 42
- **Using advanced print features** 43
- **Macintosh printing** 50
- **Linux printing** 53
- **Unix printing** 56



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

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

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



- For Windows user, see "Device Settings" on page 66.
- For Macintosh, Linux, or Unix OS user, see "Using Smart Panel (Macintosh and Linux only)" on page 68.



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

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

If you want to change the font or set the font for special condition, such as the DOS environment, you can change the font setting from

Device Settings or **Emulation** section.

- For Windows user, see "Device Settings" on page 66.
- For Macintosh, Linux, or Unix OS user, see "Using Smart Panel (Macintosh and Linux only)" on page 68.



- If your machine is connected to the network, you can set the font setting via SyncThru™ Web Service.
- You can also change the font setting in **Emulation** option on the machine's display.
- The following information shows the proper font list for corresponding languages.
 - **Russian:** CP866, ISO 8859/5 Latin Cyrillic
 - **Hebrew:** Hebrew 15Q, Hebrew-8, Hebrew-7 (Israel only)
 - **Greek:** ISO 8859/7 Latin Greek, PC-8 Latin/Greek
 - **Arabic & Farsi:** HP Arabic-8, Windows Arabic, Code Page 864, Farsi, ISO 8859/6 Latin Arabic
 - **OCR:** OCR-A, OCR-B

Changing the default print settings

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

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



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



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

- 5 Change the settings on each tab.
- 6 Click **OK**.

Setting your machine as a default machine

- 1 Click the Windows **Start** menu.
- 2 For Windows Server 2000, select **Settings > Printers**.
 - For Windows XP/Server 2003, select **Printer and Faxes**.
 - For Windows Server 2008/Vista, select **Control Panel > Hardware and Sound > Printers**.
 - For Windows 7, select **Control Panel > Devices and Printers**.
 - For Windows Server 2008 R2, select **Control Panel > Hardware > Devices and Printers**.
- 3 Select your machine.
- 4 Right-click your machine and select **Set as Default Printer**.



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



XPS printer driver: used to print XPS file format.

- The XPS printer driver can be installed only on Windows Vista OS or higher.
- You can install the XPS printer driver when you insert the software CD into your CD-ROM drive.
- Install optional memory when an XPS job does not print because the printer is out of memory.



Printing to a file (PRN)

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

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



2

Click **Print**.

3

Type in the destination path and the file name, and then click **OK**.

For example, **c:\Temp\file name**.



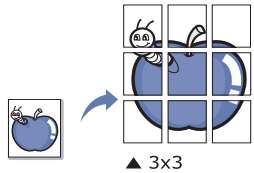
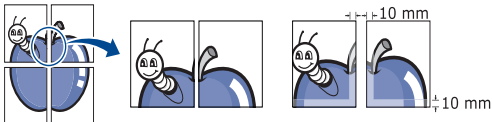
If you type in only the file name, the file is automatically saved in **My Documents**, **Documents and Settings**, or **Users**. The saved folder may differ, depending on your operating system or the application you are using.



Understanding special printer features

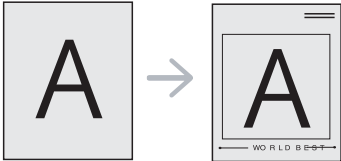
You can use advanced printing features when using your machine.

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

Item	Description
Multiple Pages per Side 	Selects the number of pages to print on a single sheet of paper. To print more than one page per sheet, the pages will be reduced in size and arranged in the order you specify. You can print up to 16 pages on one sheet.
Poster Printing 	Prints a single-page document onto 4 (Poster 2x2), 9 (Poster 3x3), or 16 (Poster 4x4) sheets of paper, for the purpose of pasting the sheets together to form one poster-size document. Select the Poster Overlap value. Specify Poster Overlap in millimeters or inches by selecting the radio button on the upper right of Basic tab to make it easier to paste the sheets together. 
Booklet Printing 	Prints your document on both sides of a sheet of paper and arranges the pages so that the paper can be folded in half after printing to produce a booklet. If you want to make a booklet, you need to print on Letter, Legal, A4, US Folio, or Oficio sized print media.  The Booklet Printing option is not available for all paper sizes. Select the available paper Size option under the Paper tab to see what paper sizes are available. If you select an unavailable paper size, this option can be automatically canceled. Select only available paper (paper without ⚠️ or ❌ mark).

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

Item	Description
Watermark 	The watermark option allows you to print text over an existing document. For example, you use it when you want to have large gray letters reading "DRAFT" or "CONFIDENTIAL" printed diagonally across the first page or all pages of a document.
Watermark (Creating a watermark)	a To change the print settings from your software application, access Printing Preferences. b Click the Advanced tab, select Edit from the Watermark drop-down list. The Edit Watermarks window appears. c Enter a text message in the Watermark Message box. You can enter up to 256 characters. The message displays in the preview window.
Watermark (Editing a watermark)	a To change the print settings from your software application, access Printing Preferences. b Click the Advanced tab, select Edit from the Watermark drop-down list. The Edit Watermarks window appears. c Select the watermark you want to edit from the Current Watermarks list and change the watermark message and options. d Click Update to save the changes. e Click OK or Print until you exit the Print window.
Watermark (Deleting a watermark)	a To change the print settings from your software application, access Printing Preferences. b Click the Advanced tab, select Edit from the Watermark drop-down list. The Edit Watermarks window appears. c Select the watermark you want to delete from the Current Watermarks list and click Delete. d Click OK or Print until you exit the Print window.

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

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

Item	Description
Print Mode	 • This feature is available only if you have installed the optional hard disk or set the Ram Disk. To set the Ram Disk, you must enable it from SyncThru™ Web Service Settings > Machine Settings > Ram Disk. • Some menus may not appear on the display depending on options or models. If so, it is not applicable to your machine. • Print Mode: The default Print Mode is Normal, which is for printing without saving the printing file in the memory. - Normal: This mode prints without storing your document in the optional memory. - Proof: This mode is useful when you print more than one copy. You can print one copy first to check, then print the rest of the copies later. - Confidential: This mode is used for printing confidential documents. You need to enter a password to print. - Store: Select this setting to save a document in the hard disk without printing. - Store and Print: This mode is used when printing and storing document at the same time. - Spool: This option can be useful when handling large amounts of data. If you select this setting, the printer spools the document into the hard disk and then prints it from the hard disk queue, decreasing the computer's work load. - Print Schedule: Select this setting to print the document at a specified time. • User ID: This option is used when you need to find a saved file using the control panel. • Job Name: This option is used when you need to find a saved file using the control panel.

Macintosh printing



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



Printing a document

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

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



You can use advanced printing features when using your machine.

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



Printing multiple pages on one sheet

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

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

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



Printing on both sides of the paper



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

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

- **Long-Edge Binding:** This option is the conventional layout used in book binding.
- **Short-Edge Binding:** This option is the type often used with calendars.

- 1 From your Macintosh application, select **Print** from the **File** menu.
- 2 Select **Layout** from the drop-down list under **Orientation**.
- 3 Select a binding orientation from the **Two-Sided** option.
- 4 Select the other options to use.
- 5 Click **Print** and the machine prints on both sides of the paper.



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



Using help

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





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



Printing from applications

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

- 1 Open an application, and select **Print** from the **File** menu
- 2 Select **Print** directly using `lpr`.
- 3 In the LPR GUI window, select the model name of your machine from the printer list and click **Properties**.

4

Change the print job properties using the following four tabs displayed at the top of the window.

- **General:** Changes the paper size, the paper type, and the orientation of the documents. It enables the duplex feature, adds start and end banners, and changes the number of pages per sheet.



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

- **Text:** Specifies the page margins and set the text options, such as spacing or columns.
- **Graphics:** Sets image options that are used when printing image files, such as color options, image size, or image position.
- **Advanced:** Sets the print resolution, paper source, and destination.

5

Click **Apply** to apply the changes and close the **Properties** window.

6

Click **OK** in the **LPR GUI** window to start printing.

- 7 The Printing window appears, allowing you to monitor the status of your print job.

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



Printing files

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

To print any document file:

- 1 Enter `lpr <file_name>` from the Linux shell command line and press Enter. The **LPR GUI** window appears.

When you type only `lpr` and press **Enter**, the **Select file(s) to print** window appears first. Just select any files you want to print and click **Open**.

- 2 In the **LPR GUI** window, select your machine from the list, and change the print job properties.
- 3 Click **OK** to start printing.



Configuring Printer Properties

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

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

- **Jobs:** Shows the list of print jobs. Click **Cancel job** to cancel the selected job and select the **Show completed jobs** check box to see previous jobs on the job list.
- **Classes:** Shows the class that your machine is in. Click **Add to Class** to add your machine to a specific class or click **Remove from Class** to remove the machine from the selected class.

4 Click **OK** to apply the changes and close the **Printer Properties** window.



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



To take advantage of the printer features provided by your printer driver, press **Properties** (see "Changing printer settings" on page 51).



Proceeding the print job

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

- 1 Execute "**printui <file_name_to_print>**" command.
For example, if you are printing "**document1**"
printui document1
This will open the UNIX Printer Driver **Print Job Manager** in which the user can select various print options.
- 2 Select a printer that has been already added.
- 3 Select the printing options from the window such as **Page Selection**.
- 4 Select how many copies are needed in **Number of Copies**.

5

Press **OK** to start the print job.



Changing the machine settings

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

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

General tab

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

- **Orientation:** Select the direction in which information is printed on a page.
- **Duplex:** Print on both sides of paper to save paper.



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

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

Image tab

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

Text tab

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

HPGL/2 tab

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

Margins tab

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

Printer-Specific Settings tab

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



5. Maintenance

This chapter introduces management tools provided to help you make full use of your machine. It also provides information for maintaining the toner cartridge.

- **Storing the toner cartridge** 59
- **Tips for moving & storing your machine** 61
- **Useful management tools** 62

Storing the toner cartridge

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

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

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

- Store the cartridge inside the protective bag from the original package.
- Store lying flat (not standing on end) with the same side facing up as if it were installed in the machine.
- Do not store consumables in any of the following conditions:
 - Temperature greater than 40°C (104°F).
 - Humidity range not 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 photoconductive drum in the cartridge.
- Do not expose the cartridge to unnecessary vibrations or shock.
- Never manually rotate the drum, especially in the reverse direction; this can cause internal damage and toner spillage.



Toner cartridge usage

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 cartridges.



Estimated cartridge life

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

Tips for moving & storing your machine

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



Samsung AnyWeb Print

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



Using SyncThru™ Web Service



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

Accessing SyncThru™ Web Service

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

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

- 2 Your machine's embedded website opens.

► Logging into SyncThru™ Web Service

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

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

SyncThru™ Web Service overview



Some tabs may not appear depending on your model.

► Information tab

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

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

► Settings tab

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

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

► Security tab

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

- **System Security:** Sets the system administrator's information and also enables or disables machine features.
- **Network Security:** Sets settings for HTTPs, IPSec, IPv4/IPv6 filtering, and 802.1x.

► Maintenance tab

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

- **Firmware Upgrade:** Upgrade your machine's firmware.
- **Contact Information:** Shows the contact information.

- **Link:** Shows links to useful sites where you can download or check information.

E-mail notification setup

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

- 1 Start a web browser, such as Internet Explorer, from Windows. Enter the machine IP address (<http://xxx.xxx.xxx.xxx>) in the address field and press the Enter key or click **Go**.
- 2 Your machine's embedded website opens.
- 3 From the **Settings** tab, select **Machine Settings > E-mail Notification**.



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

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



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

Setting the system administrator's information

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

- 1 Start a web browser, such as Internet Explorer, from Windows. Enter the machine IP address (<http://xxx.xxx.xxx.xxx>) in the address field and press the Enter key or click **Go**.
- 2 Your machine's embedded website opens.
- 3 From the **Security** tab, select **System Security > System Administrator**

- 4
- Enter the name of the administrator, phone number, location, and email address.
- 5
- Click **Apply**.

Using Samsung Easy Printer Manager
(Windows only)

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

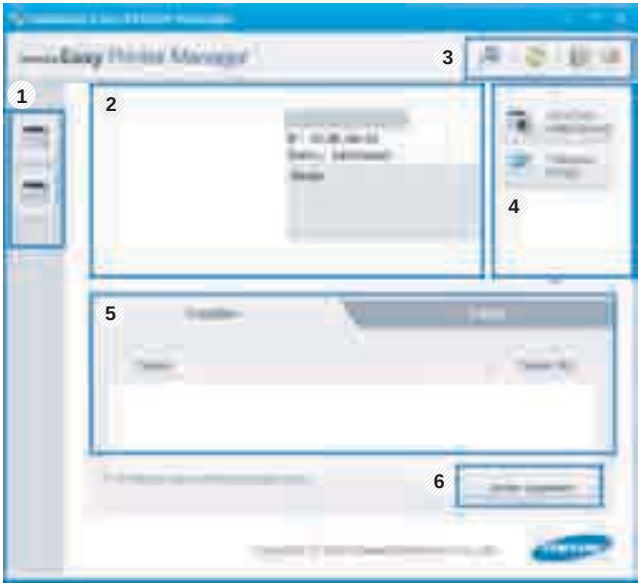


Internet Explorer 6.0 or higher is the minimum requirement for Samsung Easy Printer Manager.

Understanding Samsung Easy Printer Manager

To open the program:

- Select **Start > Programs** or **All Programs > Samsung Printers > Samsung Easy Printer Manager > Samsung Easy Printer Manager**.
- The Samsung Easy Printer Manager interface is comprised of various basic sections as described in the table that follows:



1	Printer List	The printer list displays the installed printer icons on your computer.
---	--------------	---

2	Printer Information	This area gives you general information about your machine. You can check information, such as the machine's model name, IP address (or Port name), and machine status.  User's Guide button: This button opens Troubleshooting Guide when an error occurs. You can directly open the necessary section in the user's guide.
3	Application information	Includes links for changing to the advanced settings, preference, help, and about.  The  button is used to change the user interface to the advanced settings user interface.
4	Quick links	Displays Quick links to machine specific functions. This section also includes links to applications in the advanced settings.
5	Contents Area	Displays information about the selected machine, remaining toner level, and paper. The information will vary based on the machine selected. Some machines do not have this feature.

6	Order Supplies	Click on the Order button from the supply ordering window. You can order replacement toner cartridge(s) from online.
---	-----------------------	--

 Click the Help (?) button from the upper-right corner of the window and click on any option you want to know about.

Advanced settings user interface overview

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

► Device Settings

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

► Alert Settings

This menu includes settings related to error alerting.

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

► Job Accounting

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

Using Samsung Printer Status (Windows only)

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



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

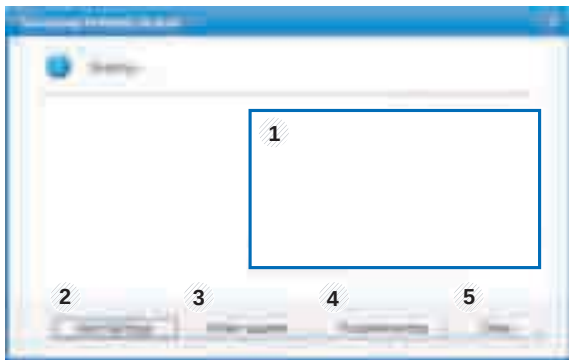
Samsung Printer Status overview

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

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

These icons appear on the Windows task bar:

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



	Toner Level	
1		You can view the level of toner remaining in each toner cartridge. The machine and the number of toner cartridge(s) shown in the above window may differ depending on the machine in use. Some machines do not have this feature.

2	Alert Settings	Select the settings you want from the options window.
3	Order Supplies	You can order replacement toner cartridge(s) from online.
4	Troubleshooting	You can directly open the troubleshooting section in the user's guide.
5	Close	Close the window.



Using Smart Panel (Macintosh and Linux only)

Smart Panel is a program that monitors and informs you of the machine's status, and allows you to customize the machine's settings. For Macintosh, Smart Panel is installed automatically when you install the machine software. For Linux, you can download Smart Panel from the Samsung website (see "Installing the Smart Panel" on page 6).



- The Smart Panel window and its contents shown in this user's guide may differ depending on the machine or operating system in use.
- Check the operating system(s) that are compatible with your machine (see Basic Guide).

Smart Panel overview

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

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



1	Toner Level	You can view the level of toner remaining in each toner cartridge. The machine and the number of toner cartridge(s) shown in the above window may differ depending on the machine in use. Some machines do not have this feature.
2	Buy Now	You can order replacement toner cartridge(s) from online.

3	User's Guide	You can view the online User's Guide.  This button opens the Troubleshooting Guide when an error occurs. You can directly open the troubleshooting section in the user's guide.
4	Printer Setting	You can configure various machine settings in the Printer Settings Utility window. Some machines do not have this feature.  If you connect your machine to a network, the SyncThru™ Web Service window appears instead of the Printer Settings Utility.

Changing Smart Panel 's settings

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



Using the Linux Unified Driver Configurator

The Unified Driver Configurator is a tool primarily intended for configuring machine devices. You need to install Unified Linux Driver to use Unified Driver Configurator (see "Installation for Linux" on page 6).

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

Opening Unified Driver Configurator

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



- 1 Printer Configuration
- 2 Port Configuration



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

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

Printers configuration

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

► Printers tab

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



- | | |
|---|--|
| 1 | Switches to Printers configuration . |
| 2 | Shows all of the installed machines. |
| 3 | Shows the status, model name, and URI of your machine. |

The printer control buttons are, as follows:

- **Refresh:** Renews the available machines list.
- **Add Printer:** Allows you to add a new machines.
- **Remove Printer:** Removes the selected machine.

- **Set as Default:** Sets the current selected machine as a default machine.
- **Stop/Start:** Stops/starts the machine.
- **Test:** Allows you to print a test page to ensure the machine is working properly.
- **Properties:** Allows you to view and change the printer's properties.

► Classes tab

The Classes tab shows a list of available machine classes.

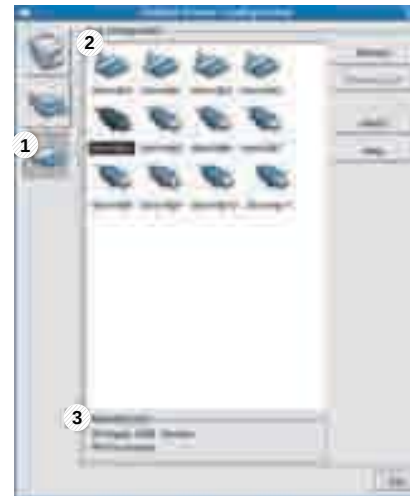


1	Shows all of the machine classes.
2	Shows the status of the class and the number of machines in the class.

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

Ports configuration

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



1	Switches to Ports configuration .
2	Shows all of the available ports.
3	Shows the port type, device connected to the port, and status.

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



6. Troubleshooting

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

- **Paper feeding problems** 74
- **Power and cable connecting problems** 75
- **Printing problems** 76
- **Printing quality problems** 80
- **Operating system problems** 88

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



Click this link to open an animation about solving power problems.

Condition	Suggested solutions
The machine is not receiving power, or the connection cable between the computer and the machine is not connected properly.	• Connect the machine to the electricity supply first and turn on the power switch. Press the  (Power) button on the control panel. • Disconnect the machine’s cable and reconnect it.

Condition	Possible cause	Suggested solutions
The machine does not print.	The machine is not receiving power.	Check the power cord connections. Check the power switch and the power source.
	The machine is not selected as the default machine.	Select your machine as your default machine in Windows.
	Check the machine for the following: • The front cover is not closed. Close the front cover. • Paper is jammed. Clear the paper jam. • No paper is loaded. Load paper. • 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 machine cable and reconnect it.
	The connection cable between the computer and the machine is defective.	If possible, attach the cable to another computer that is working properly and print a job. You can also try using a different machine cable.
	The port setting is incorrect.	Check the Windows printer settings to make sure that the print job is sent to the correct port. If the computer has more than one port, make sure that the machine is attached to the correct one.
	The machine may be configured incorrectly.	Check the Printing Preferences to ensure that all of the print settings are correct.

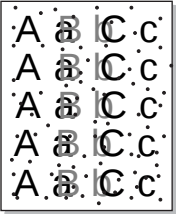
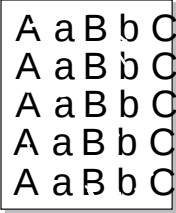
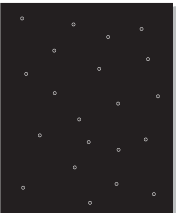
Condition	Possible cause	Suggested solutions
The machine does not print.	The printer driver may be incorrectly installed.	Uninstall and reinstall the machine's driver.
	The machine is malfunctioning.	Check the display message on the control panel to see if the machine is indicating a system error. Contact a service representative.
	The document size is so big that the hard disk space of the computer is insufficient to access the print job.	Get more hard disk space and print the document again.
	The output tray is full.	Once the paper is removed from the output tray, the machine resumes printing.
The machine selects print materials from the wrong paper source.	The paper option that was selected in the Printing Preferences may be incorrect.	For many software applications, the paper source selection is found under the Paper tab within the Printing Preferences . 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.

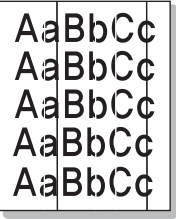
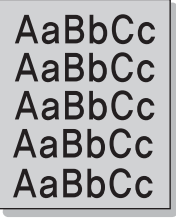
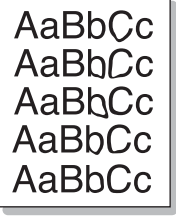
Condition	Possible cause	Suggested solutions
The machine prints, but the text is wrong, garbled, or incomplete.	The machine cable is loose or defective.	Disconnect the machine cable and reconnect. Try a print job that you have already printed successfully. If possible, attach the cable and the machine to another computer that you know works and try a print job. Finally, try a new machine cable.
	The wrong printer driver was selected.	Check the application's printer selection menu to ensure that your machine is selected.
	The software application is malfunctioning.	Try printing a job from another application.
	The operating system is malfunctioning.	Exit Windows and reboot the computer. Turn the machine off and back on again.
	If you are in a DOS environment, the font setting for your machine may be set incorrectly.	See "Changing the font setting" on page 40.
Pages print, but they are blank.	The toner cartridge is defective or out of toner.	Redistribute the toner, if necessary. If necessary, replace the toner cartridge.
	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.

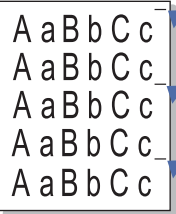
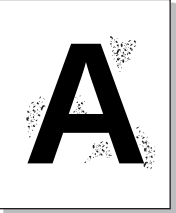
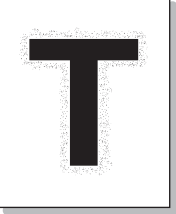
Condition	Possible cause	Suggested solutions
The machine does not print PDF files correctly. Some parts of graphics, text, or illustrations are missing.	Incompatibility between the PDF file and the Acrobat products.	Printing the PDF file as an image may enable the file to print. Turn on Print As Image from the Acrobat printing options.  It will take longer to print when you print a PDF file as an image.
The print quality of photos is not good. Images are not clear.	The resolution of the photo is very low.	Reduce the photo size. If you increase the photo size in the software application, the resolution will be reduced.
Before printing, the machine emits vapor near the output tray.	Using damp paper can cause vapor during printing.	This is not a problem. Just keep printing.
The machine does not print special-sized paper, such as billing paper.	Paper size and paper size setting do not match.	Set the correct paper size in the Custom in Paper tab in Printing Preferences .
The printed billing paper is curled.	The paper type setting does not match.	Change the printer option and try again. Go to Printing Preferences , click Paper tab, and set type to Thick .

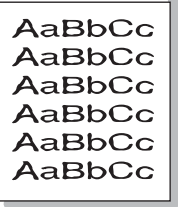
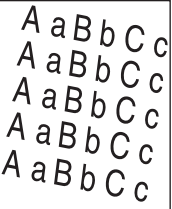
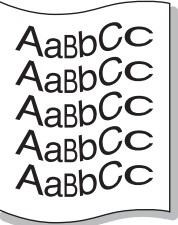
If the inside of the machine is dirty or paper has been loaded improperly, there might be a reduction in print quality. See the table below to clear the problem.

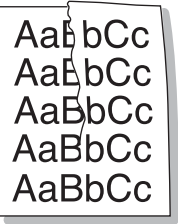
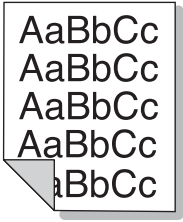
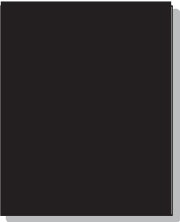
Condition	Suggested Solutions
Light or faded print AaBbCc AaBbCc AaBbCc AaBbCc AaBbCc	• If a vertical white streak or faded area appears on the page, the toner supply is low. Install a new toner cartridge. • The paper may not meet paper specifications; for example, the paper may be too moist or rough. • If the entire page is light, the ting is too low or the toner save mode is on. Adjust the print resolution and turn the toner save mode off. See the help screen of the printer driver. • A combination of faded or smeared defects may indicate that the toner cartridge needs cleaning. Clean the inside of your machine. • The surface of the LSU part inside the machine may be dirty. Clean the inside of your machine. If these steps do not correct the problem, contact a service representative.
The top half of the paper is printed lighter than the rest of the paper AaBbCc AaBbCc AaBbCc AaBbCc AaBbCc	The toner might not adhere properly to this type of paper. • Change the printer option and try again. Go to Printing Preferences , click the Paper tab, and set the paper type to Recycled.

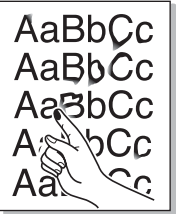
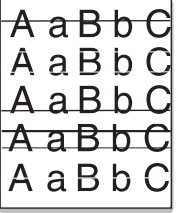
Condition	Suggested Solutions
Toner specks 	• The paper may not meet specifications; for example, the paper may be too moist or rough. • The transfer roller may be dirty. Clean the inside of your machine. • The paper path may need cleaning. Contact a service representative.
Dropouts 	If faded areas, generally rounded, occur randomly on the page: • A single sheet of paper may be defective. Try reprinting the job. • The moisture content of the paper is uneven or the paper has moist spots on its surface. Try a different brand of paper. • The paper lot is bad. The manufacturing processes can cause some areas to reject toner. Try a different kind or brand of paper. • Change the printer option and try again. Go to Printing Preferences, click the Paper tab, and set type to Thick or Thicker (see Basic Guide for paper weights for each sheet). If these steps do not correct the problem, contact a service representative.
White Spots 	If white spots appear on the page: • The paper is too rough and a lot of dirt from paper falls to the inner components within the machine, so the transfer roller may be dirty. Clean the inside of your machine. • The paper path may need cleaning. Clean the inside of your machine. If these steps do not correct the problem, contact a service representative.

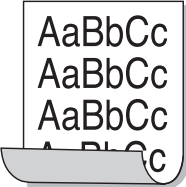
Condition	Suggested Solutions
Vertical lines 	If black vertical streaks appear on the page: - The surface (drum part) of the toner cartridge inside the machine has probably been scratched. Remove the toner cartridge and install a new one. If white vertical streaks appear on the page: - The surface of the LSU part inside the machine may be dirty. Clean the inside of your machine. If these steps do not correct the problem, contact a service representative.
Black background 	If the amount of background shading becomes unacceptable: - Change to a lighter weight paper. - Check the environmental conditions: very dry conditions or a high level of humidity (higher than 80% RH) can increase the amount of background shading. - Remove the old toner cartridge and install a new one.
Toner smear 	- Clean the inside of the machine. - Check the paper type and quality. - Remove the toner cartridge and install a new one.

Condition	Suggested Solutions
Vertical repetitive defects 	If marks repeatedly appear on the printed side of the page at even intervals: • The toner cartridge may be damaged. If you still have the same problem, remove the toner cartridge and, install a new one. • 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.
Background scatter 	Background scatter results from bits of toner randomly distributed on the printed page. • The paper may be too damp. Try printing with a different batch of paper. Do not open packages of paper until necessary so that the paper does not absorb too much moisture. • If background scatter occurs on an envelope, change the printing layout to avoid printing over areas that have overlapping seams on the reverse side. Printing on seams can cause problems. • If background scatter covers the entire surface area of a printed page, adjust the print resolution through your software application or in Printing Preferences. Ensure the correct paper type is selected. For example: If Thicker Paper is selected, but Plain Paper actually used, an overcharging can occur causing this copy quality problem.
Toner particles are around bold characters or pictures 	The toner might not adhere properly to this type of paper. • Change the printer option and try again. Go to Printing Preferences, click the Paper tab, and set the paper type to Recycled. Ensure the correct paper type is selected. For example: If Thicker Paper is selected, but Plain Paper actually used, an overcharging can occur causing this copy quality problem.

Condition	Suggested Solutions
Misformed characters 	• If characters are improperly formed and producing hollow images, the paper stock may be too slick. Try different paper.
Page skew 	• Ensure that the paper is loaded properly. • Check the paper type and quality. • Ensure that the guides are not too tight or too loose against the paper stack.
Curl or wave 	• Ensure that the paper is loaded properly. • Check the paper type and quality. Both high temperature and humidity can cause paper curl. • Turn the stack of paper over in the tray. Also try rotating the paper 180° in the tray.

Condition	Suggested Solutions
Wrinkles or creases 	• Ensure that the paper is loaded properly. • Check the paper type and quality. • Turn the stack of paper over in the tray. Also try rotating the paper 180° in the tray.
Back of printouts are dirty 	• Check for leaking toner. Clean the inside of the machine.
Solid color or black pages 	• The toner cartridge may not be installed properly. Remove the cartridge and reinsert it. • The toner cartridge may be defective. Remove the toner cartridge and install a new one. • The machine may require repairing. Contact a service representative.

Condition	Suggested Solutions
Loose toner 	• Clean the inside of the machine. • Check the paper type and quality. • Remove the toner cartridge and then, install a new one. If the problem persists, the machine may require repair. Contact a service representative.
Character voids 	Character voids are white areas within parts of characters that should be solid black: • 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.
Horizontal stripes 	If horizontally aligned black streaks or smears appear: • The toner cartridge may be installed improperly. Remove the cartridge and reinsert it. • The toner cartridge may be defective. Remove the toner cartridge and install a new one. If the problem persists, the machine may require repairing. Contact a service representative.

Condition	Suggested Solutions
Curl 	If the printed paper is curled or paper does not feed into the machine: • Turn the stack of paper over in the tray. Also try rotating the paper 180° in the tray. • Change the printer's paper option and try again. Go to Printing Preferences, click the Paper tab, and set type to Thin.
• An unknown image repetitively appears on a few sheets • Loose toner • Light print or contamination occurs	Your machine is probably being used at an altitude of 1,000 m (3,281 ft) or above. The high altitude may affect the print quality, such as loose toner or light imaging. Change the altitude setting for your machine (See "Altitude adjustment" on page 39).



Common Windows problems

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



Refer to the Microsoft Windows 2000/XP/2003/Vista User’s Guide that came with your computer for further information on Windows error messages.



Common Macintosh problems

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



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



Common Linux problems

Condition	Suggested solutions
The machine does not print.	• Check if the printer driver is installed in your system. Open Unified Driver Configurator and switch to the Printers tab in the Printers configuration window to look at the list of available machines. Make sure that your machine is displayed on the list. If not, open Add new printer wizard to set up your device. • Check if the machine is started. Open Printers configuration and select your machine from the printers list. Look at the description in the Selected printer pane. If its status contains Stopped, press the Start button. Normal operation of the machine should be restored. The “stopped” status might be activated when some problems in printing occur. • Check if your application has special print options 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 the command line parameter in the command item.
The machine does not print whole pages, and output is printed on half the page.	It is a known problem that occurs when a color machine is used on version 8.51 or earlier of Ghostscript, 64-bit Linux OS, and has been reported to bugs.ghostscript.com as Ghostscript Bug 688252. The problem is solved in AFPL Ghostscript v. 8.52 or above. Download the latest version of AFPL Ghostscript from http://sourceforge.net/projects/ghostscript/ and install it to solve this problem.
“Cannot open port device file” error message appears when printing a document.	Avoid changing print job parameters (e.g., via LPR GUI) while a print job is in progress. Known versions of CUPS server break the print job whenever print options are changed and then try to restart the job from the beginning. Since Unified Linux Driver locks the port while printing, the abrupt termination of the driver keeps the port locked and unavailable for subsequent print jobs. If this situation occurs, try to release the port by selecting Release port in the Port configuration window.



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



Common PostScript problems

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

Problem	Possible cause	Solution
The PostScript file cannot be printed.	The PostScript driver may not be installed correctly.	• Install the PostScript driver (see "Software installation" on page 2). • Print a configuration page and verify that the PS version is available for printing. • If the problem persists, contact a service representative.
Limit Check Error report prints.	The print job was too complex.	You might need to reduce the complexity of the page or install more memory.
A PostScript error page prints.	The print job may not be PostScript.	Make sure that the print job is a PostScript job. Check to see whether the software application expected a setup or PostScript header file to be sent to the machine.
The optional tray is not selected in the driver.	The printer driver has not been configured to recognize the optional tray.	Open the PostScript driver properties, select the Device Options tab, and set the tray option.

Contact SAMSUNG worldwide

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

Country/Region	Customer Care Center	Web Site
ALBANIA	42 27 5755	
ARGENTINE	0800-333-3733	www.samsung.com
ARMENIA	0-800-05-555	
AUSTRALIA	1300 362 603	www.samsung.com
AUSTRIA	0810-SAMSUNG (7267864, € 0.07/min)	www.samsung.com
AZERBAIJAN	088-55-55-555	
BAHRAIN	8000-4726	www.samsung.com
BELARUS	810-800-500-55-500	
BELGIUM	02-201-24-18 www.samsung.com /be (Dutch) www.samsung.com /be_fr (French)	
BOSNIA	05 133 1999	
BRAZIL	0800-124-421 4004-0000	www.samsung.com
BULGARIA	07001 33 11	www.samsung.com

Country/Region	Customer Care Center	Web Site
CANADA	1-800-SAMSUNG (726-7864)	www.samsung.com
CHILE	800-SAMSUNG (726-7864)	www.samsung.com
CHINA	400-810-5858	www.samsung.com
COLOMBIA	01-8000112112	www.samsung.com
COSTA RICA	0-800-507-7267	www.samsung.com
CROATIA	062 SAMSUNG (062 726 7864)	www.samsung.com
CZECH REPUBLIC	800-SAMSUNG (800-726786)	www.samsung.com
	Samsung Zrt., česká organizační složka, Oasis Florenc, Sokolovská394/17, 180 00, Praha 8	
DENMARK	70 70 19 70	www.samsung.com
DOMINICA	1-800-751-2676	www.samsung.com
ECUADOR	1-800-10-7267	www.samsung.com
EGYPT	0800-726786	www.samsung.com
EIRE	0818 717100	www.samsung.com
EL SALVADOR	800-6225	www.samsung.com
ESTONIA	800-7267	www.samsung.com
FINLAND	030-6227 515	www.samsung.com

Contact SAMSUNG worldwide

Country/Region	Customer Care Center	Web Site
FRANCE	01 48 63 00 00	www.samsung.com
GERMANY	01805 - SAMSUNG (726-7864 € 0,14/min)	www.samsung.com
GEORGIA	8-800-555-555	
GREECE	IT and Mobile : 80111-SAMSUNG (80111 7267864) from land line, local charge/ from mobile, 210 6897691 Cameras, Camcorders, Televisions and Household Appliances From mobile and fixed 2106293100	www.samsung.com
GUATEMALA	1-800-299-0013	www.samsung.com
HONDURAS	800-27919267	www.samsung.com
HONG KONG	(852) 3698-4698	www.samsung.com /hk www.samsung.com /hk_en/
HUNGARY	06-80-SAMSUNG (726-7864)	www.samsung.com

Country/Region	Customer Care Center	Web Site
INDIA	3030 8282 1800 3000 8282	www.samsung.com
INDONESIA	0800-112-8888 021-5699-7777	www.samsung.com
IRAN	021-8255	www.samsung.com
ITALY	800-SAMSUNG (726-7864)	www.samsung.com
JAMAICA	1-800-234-7267	www.samsung.com
JAPAN	0120-327-527	www.samsung.com
JORDAN	800-22273	www.samsung.com
KAZAKHSTAN	8-10-800-500-55-500 (GSM:7799)	www.samsung.com
KOSOVO	+381 0113216899	
KUWAIT	183-2255	www.samsung.com
KYRGYZSTAN	00-800-500-55-500	www.samsung.com
LATVIA	8000-7267	www.samsung.com
LITHUANIA	8-800-77777	www.samsung.com
LUXEMBURG	261 03 710	www.samsung.com
MALAYSIA	1800-88-9999	www.samsung.com

Contact SAMSUNG worldwide

Country/Region	Customer Care Center	Web Site
MACEDONIA	023 207 777	
MEXICO	01-800-SAMSUNG (726-7864)	www.samsung.com
MOLDOVA	00-800-500-55-500	
MONTENEGRO	020 405 888	
MOROCCO	080 100 2255	www.samsung.com
NIGERIA	080-SAMSUNG(726-7864)	www.samsung.com
NETHERLANDS	0900-SAMSUNG (0900-7267864) (€ 0,10/min)	www.samsung.com
NEW ZEALAND	0800 SAMSUNG (0800 726 786)	www.samsung.com
NICARAGUA	00-1800-5077267	www.samsung.com
NORWAY	815-56 480	www.samsung.com
OMAN	800-SAMSUNG (726-7864)	www.samsung.com
PANAMA	800-7267	www.samsung.com
PERU	0-800-777-08	www.samsung.com

Country/Region	Customer Care Center	Web Site
PHILIPPINES	1800-10-SAMSUNG (726-7864) 1-800-3-SAMSUNG (726-7864) 1-800-8-SAMSUNG (726-7864) 02-5805777	www.samsung.com
POLAND	0 801 1SAMSUNG (172678) 022-607-93-33	www.samsung.com
PORTUGAL	80820-SAMSUNG (726-7864)	www.samsung.com
PUERTO RICO	1-800-682-3180	www.samsung.com
RUMANIA	08010 SAMSUNG (08010 726 7864) only from landline, local network Romtelecom - local tariff / 021 206 01 10 for landline and mobile, normal tariff.	www.samsung.com
RUSSIA	8-800-555-55-55	www.samsung.com
SAUDI ARABIA	9200-21230	www.samsung.com
SERBIA	0700 SAMSUNG (0700 726 7864)	www.samsung.com

Contact SAMSUNG worldwide

Country/Region	Customer Care Center	Web Site
SINGAPORE	1800-SAMSUNG (726-7864)	www.samsung.com
SLOVAKIA	0800-SAMSUNG (726-7864)	www.samsung.com
SOUTH AFRICA	0860 SAMSUNG (726-7864)	www.samsung.com
SPAIN	902-1-SAMSUNG(902 172 678)	www.samsung.com
SWEDEN	0771 726 7864 (SAMSUNG)	www.samsung.com
SWITZERLAND	0848-SAMSUNG (7267864, CHF 0.08/min)	www.samsung.com /ch www.samsung.com /ch_fr/
TADJIKISTAN	8-10-800-500-55-500	www.samsung.com
TAIWAN	0800-329-999	www.samsung.com
THAILAND	1800-29-3232 02-689-3232	www.samsung.com
TRINIDAD & TOBAGO	1-800-SAMSUNG (726-7864)	www.samsung.com
TURKEY	444 77 11	www.samsung.com
U.A.E	800-SAMSUNG (726-7864)	www.samsung.com
U.K	0330 SAMSUNG (726-7864)	www.samsung.com

Country/Region	Customer Care Center	Web Site
U.S.A	1-800-SAMSUNG (726-7864)	www.samsung.com
UKRAINE	0-800-502-000	www.samsung.com /ua www.samsung.com /ua_ru
UZBEKISTAN	8-10-800-500-55-500	www.samsung.com
VENEZUELA	0-800-100-5303	www.samsung.com
VIETNAM	1 800 588 889	www.samsung.com



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

802.11

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

802.11b/g/n

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

Access point

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

ADF

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

AppleTalk

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

BIT Depth

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

BMP

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

BOOTP

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

CCD

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

Collation

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

Control Panel

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

Coverage

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

CSV

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

DADF

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

Default

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

DHCP

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

DIMM

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

DLNA

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

DNS

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

Dot Matrix Printer

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

DPI

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

DRPD

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

Duplex

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

Duty Cycle

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

ECM

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

Emulation

Emulation is a technique of one machine obtaining the same results as another.

An emulator duplicates the functions of one system with a different system, so that the second system behaves like the first system. Emulation focuses on exact reproduction of external behavior, which is in contrast to simulation, which concerns an abstract model of the system being simulated, often considering its internal state.

Ethernet

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

EtherTalk

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

FDI

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

FTP

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

Fuser Unit

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

Gateway

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

Grayscale

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

Halftone

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

HDD

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

IEEE

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

IEEE 1284

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

Intranet

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

IP address

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

IPM

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

IPP

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

IPX/SPX

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

ISO

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

ITU-T

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

ITU-T No. 1 chart

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

JBIG

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

JPEG

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

LDAP

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

LED

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

MAC address

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

MFP

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

MH

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

MMR

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

Modem

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

MR

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

NetWare

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

OPC

Organic Photo Conductor (OPC) is a mechanism that makes a virtual image for print using a laser beam emitted from a laser printer, and it is usually green or rust colored and has a cylinder shape.

An imaging unit containing a drum slowly wears the drum surface by its usage in the printer, and it should be replaced appropriately since it gets worn from contact with the cartridge development brush, cleaning mechanism, and paper.

Originals

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

OSI

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

PABX

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

PCL

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

PDF

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

PostScript

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

Printer Driver

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

Print Media

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

PPM

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

PRN file

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

Protocol

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

PS

See PostScript.

PSTN

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

RADIUS

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

Resolution

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

SMB

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

SMTP

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

SSID

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

Subnet Mask

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

TCP/IP

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

TCR

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

TIFF

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

Toner Cartridge

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

TWAIN

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

UNC Path

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

URL

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

USB

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

Watermark

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

WEP

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

WIA

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

WPA

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

WPA-PSK

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

WPS

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

XPS

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