

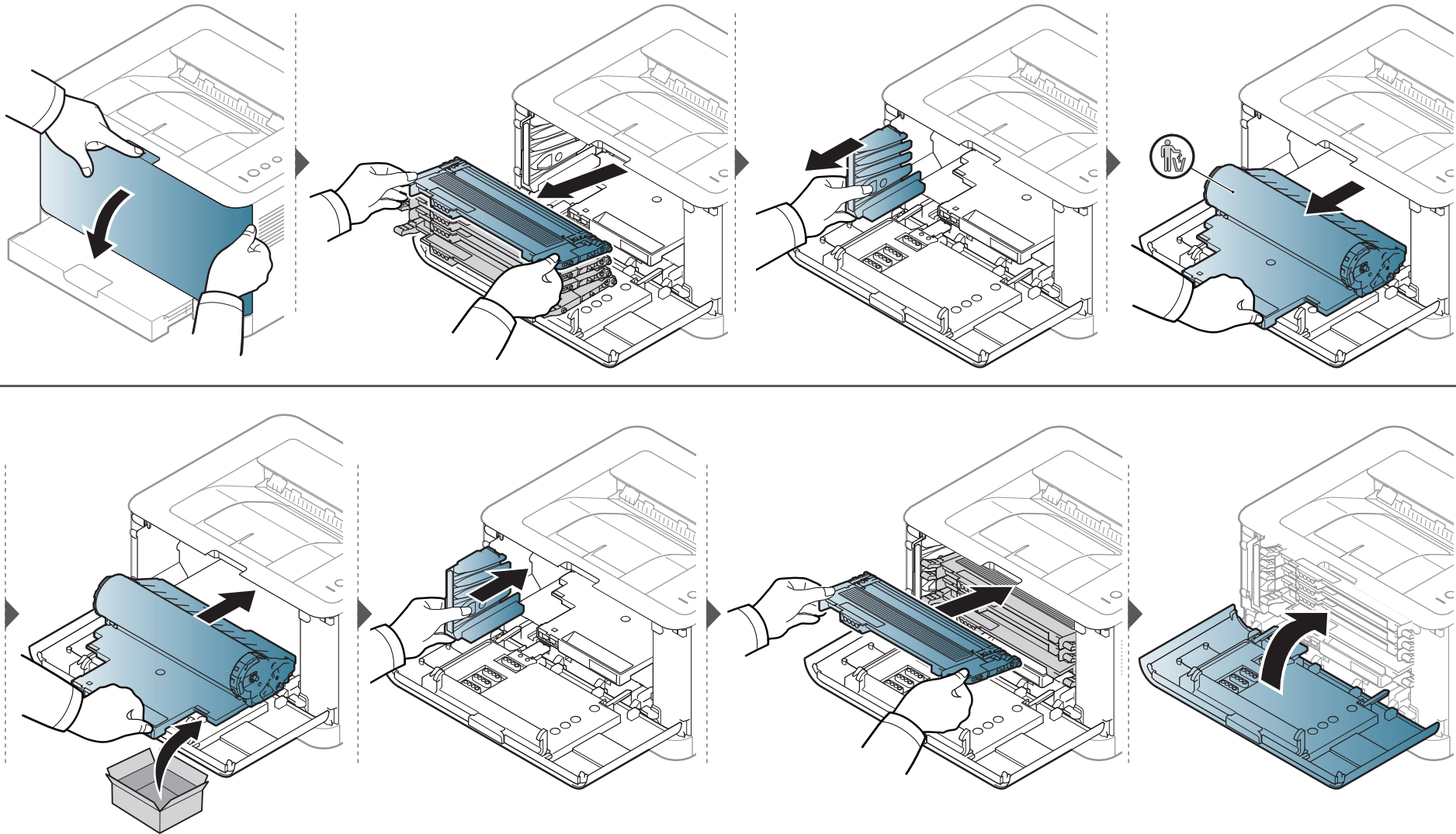
Replacing the imaging unit

When the life span of the imaging unit has expired, the Smart Panel program window appears on the computer, indicating the imaging unit needs to be placed. Otherwise, your machine stops printing.



- Don't use sharp objects such as a knife or scissors to open the imaging unit package. You could damage the surface of the imaging unit.
- Be careful not to scratch the surface of the imaging unit.
- To prevent damage, do not expose the imaging unit to light for more than a few minutes. Cover it with a piece of paper to protect it if necessary.
- Before closing the front cover, make sure all toner cartridges are installed properly.

Replacing the imaging unit



Cleaning the machine

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



- Cleaning the cabinet of the machine with cleaning materials containing large amounts of alcohol, solvents, or other strong substances can discolor or distort the cabinet.
- If your machine or the surrounding area is contaminated with toner, we recommend you use a cloth or tissue dampened with water to clean it. If you use a vacuum cleaner, toner blows in the air and might be harmful to you.
- During the printing process, paper, toner, and dust particles can accumulate inside the machine. This buildup can cause print quality problems, such as toner specks or smearing. Cleaning the inside of the machine clears and reduces these problems.

Cleaning the outside

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

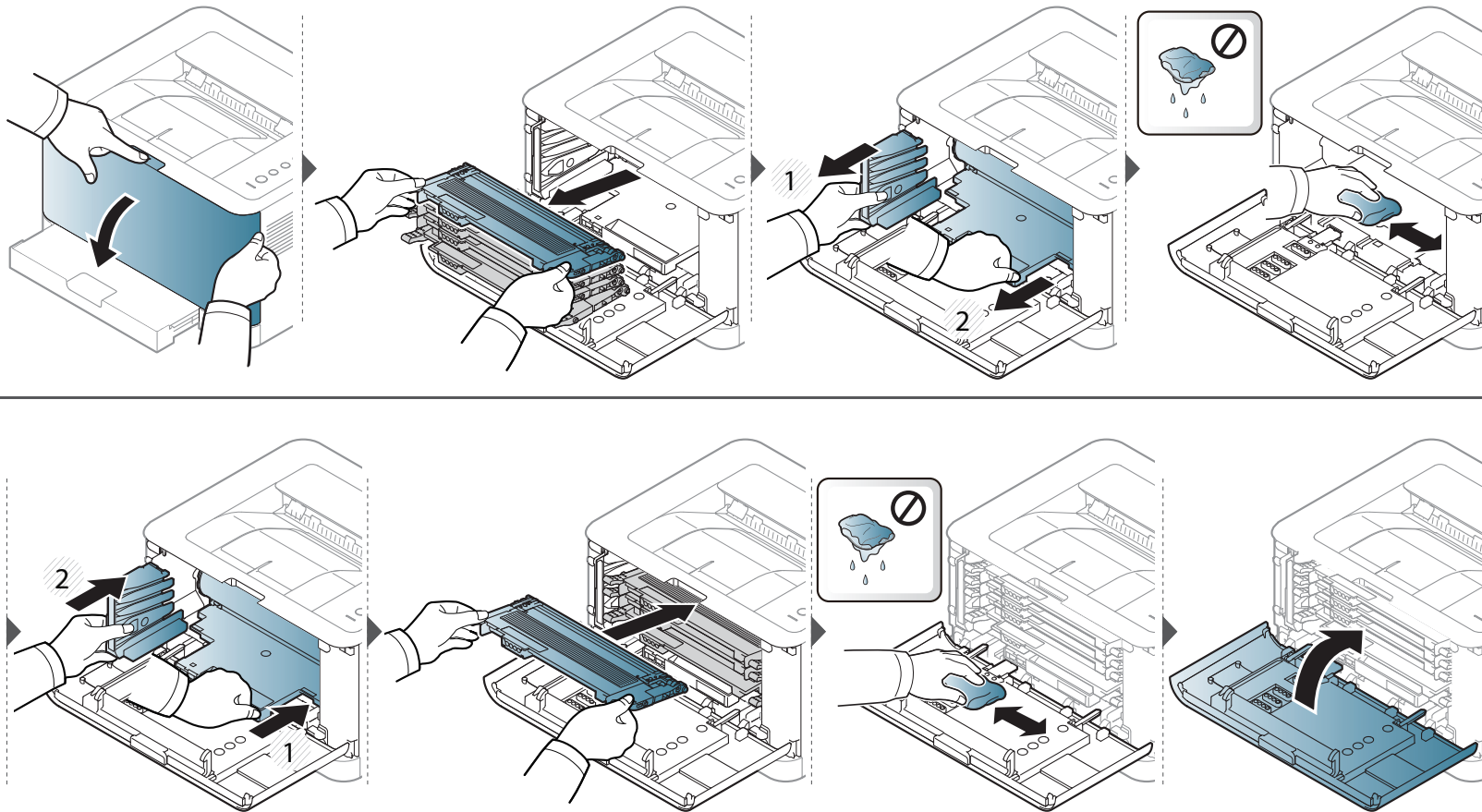
Cleaning the inside

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

Cleaning the machine



- Use a dry lint-free cloth to clean the machine.
- If your machine has a power switch, turn the power switch off before cleaning the machine.
- Before opening the top cover, close the output support first.



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.



4. Troubleshooting

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

- **Tips for avoiding paper jams** 57
- **Clearing paper jams** 58
- **Understanding the status LED** 61



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

If your machine has a display screen, check the message on the display screen first to solve the error. If you cannot find a solution to your problem in this chapter, refer to the **Troubleshooting** chapter in the Advanced User's Guide (see "Troubleshooting" on page 163).

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

Tips for avoiding paper jams

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

- Ensure that the adjustable guides are positioned correctly (see "Tray overview" on page 26).
- 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 67).

Clearing paper jams

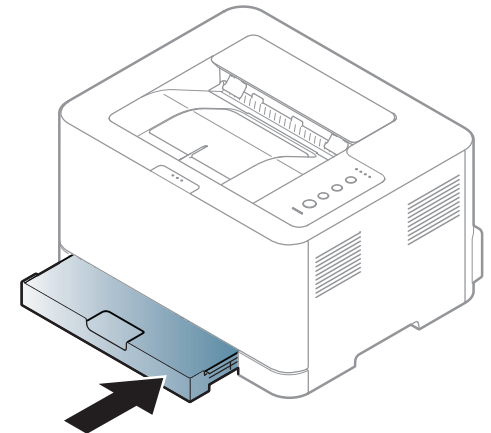
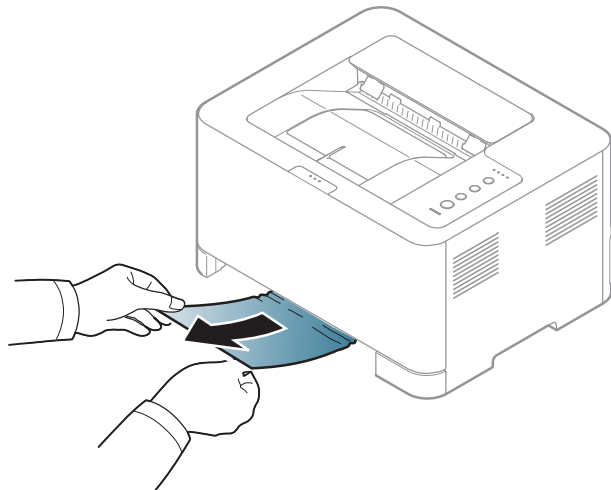
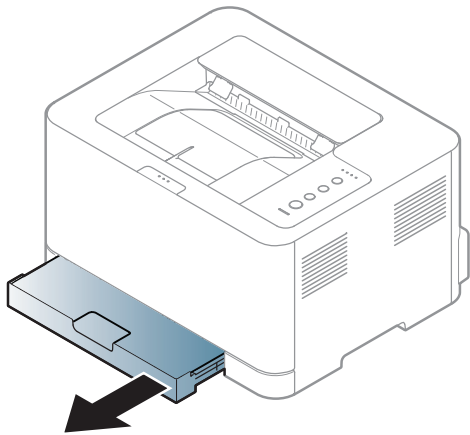


To avoid tearing the paper, pull the jammed paper out slowly and gently.

In tray



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



Clearing paper jams

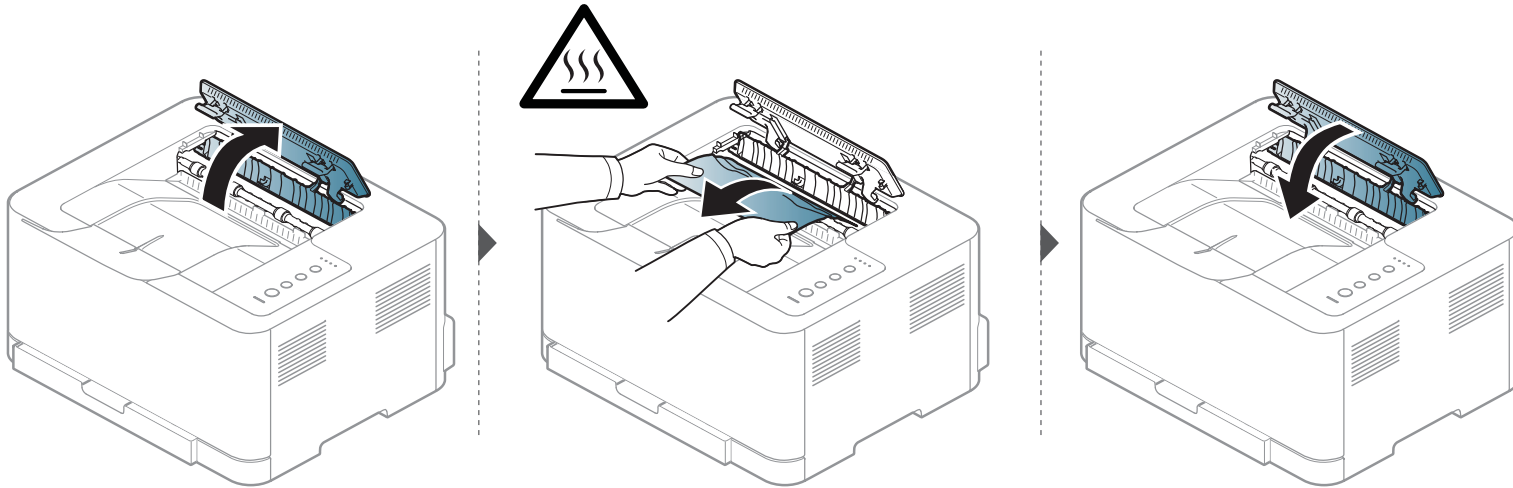
Inside the machine



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

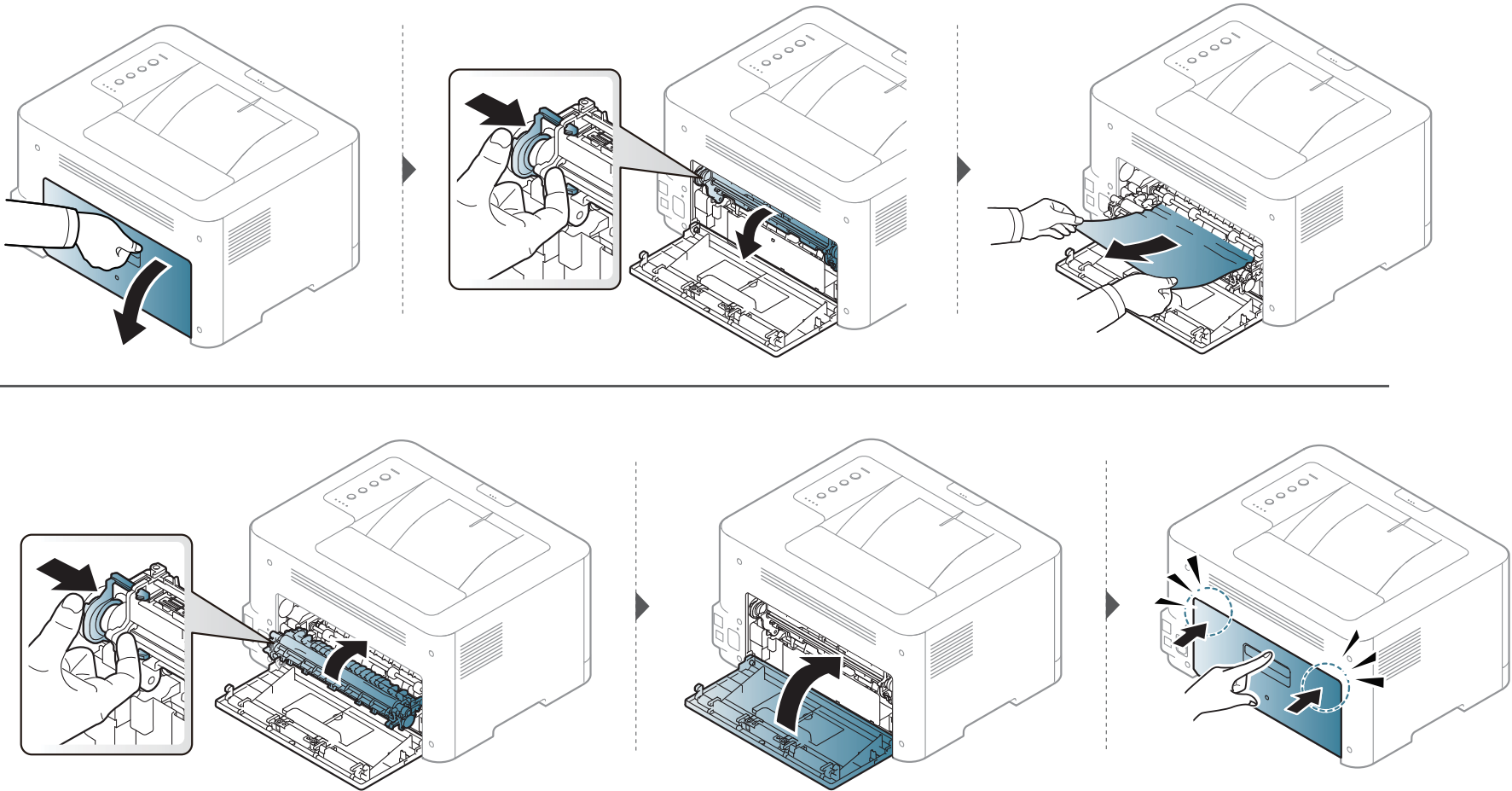


- The fuser area is hot. Take care when removing paper from the machine.



Clearing paper jams

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



Understanding the status LED

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



- Some LEDs may not be available depending on model or country (see "Control panel overview" on page 19).
- To resolve the error, look at the error message and its instructions from the troubleshooting part (see "Troubleshooting" on page 163).
- You also can resolve the error with the guideline from the computers's **Samsung Printing Status** program window (see "Using Samsung Printer Status" on page 158).
- If the problem persists, call a service representative.

Understanding the status LED

Status LED

Status			Description
 (Status LED)	Off		The machine is off-line or save mode.
	Green	Blinking	• The machine is receiving data from the computer. • The machine is printing data.
		On	The machine is on-line and can be used.
	Red	Blinking	The machine is on manual printing or manual duplex printing.
		On	• The cover is opened. Close the cover (see "Machine overview" on page 16). • There is no paper in the tray when receiving or printing data. Load paper in the tray (see "Loading paper in the tray" on page 27). • The machine has stopped due to a major error.
	Orange	Blinking	Upgrading firmware.
		On	A paper jam has occurred (see "Clearing paper jams" on page 58).

Understanding the status LED

Toner / WPS / Power / Eco LED

Status			Description
 (Toner LED)	Orange	Blinking	Small amount of toner is left in the cartridge. The estimated cartridge life of toner is close. Prepare a new cartridge for replacement. You may temporarily increase the printing quality by redistributing the toner (see "Redistributing toner" on page 45).
		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 47). - The toner cartridge is not installed or the wrong toner cartridge is installed (see "Replacing the toner cartridge" on page 47).
		Off	All toner cartridges are at normal capacity.
 (WPS LED)^b	Blue	Blinking	The machine is connecting to a wireless network.
		On	The machine is connected to a wireless network (see "Using the WPS button" on page 108).
		Off	The machine is disconnected from a wireless network.
 (Power/Wakeup LED)	Blue	On	The machine is in power save mode.
		Off	The machine is in ready mode or the machine's power is off.
Eco	Green	On	Eco mode is on (see "Eco printing" on page 36).
		Off	Eco mode is off.

a. Estimated cartridge life means the expected or estimated toner cartridge life, which indicates the average capacity of print-outs and is designed pursuant to ISO/IEC 19798. The number of pages may be affected by operating environment, printing interval, 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.

b. Wireless model only (see "Features by models" on page 6).



5. Appendix

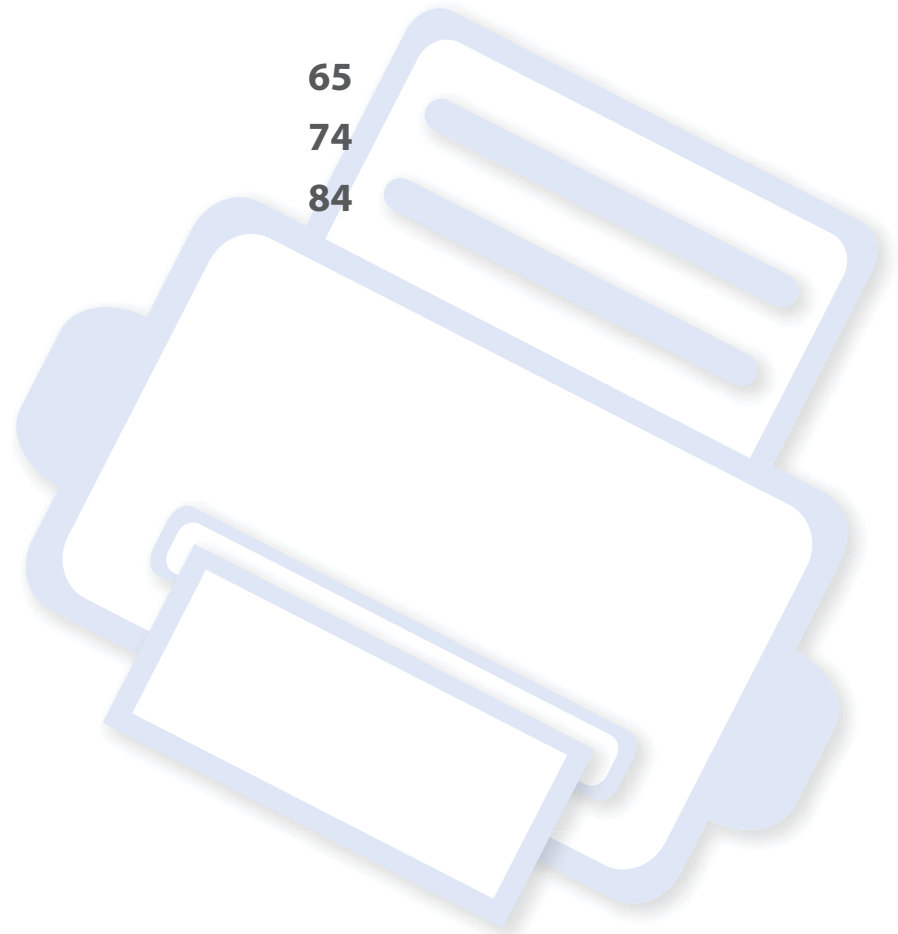
This chapter provides product specifications and information concerning applicable regulations.

- **Specifications**
- **Regulatory information**
- **Copyright**

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Specifications

General specifications



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

Items		Description
Dimension	Width x Length x Height	388 x 313 x 243 mm (15.3 x 12.3 x 9.6 inches)
Weight	Machine with consumables	11 kg (24.3 lbs)
Noise Level ^a	Ready mode	Less than 26 dB (A)
	Print mode	• color printing: Less than 46 dB (A) • black and white printing: Less than 48 dB (A)
Temperature	Operation	10 to 32°C (50 to 90°F)
	Storage (packed)	-20 to 40°C (-4 to 104°F)
Humidity	Operation	10 to 80% RH
	Storage (packed)	20 to 95% RH
Power rating ^b	110 volt models	AC 110 - 127 V
	220 volt models	AC 220 - 240 V

Specifications

Items		Description
Power consumption	Average operating mode	Less than 290W
	Ready mode	Less than 60 W
	Power save mode	Less than 1.0 W (CLP-36x Series), Less than 1.4 W (CLP-36xW Series)
	Power off mode	0.45 W
Wireless ^c	Module	SPW-B4319S

- a. Sound Pressure Level, ISO 7779. Configuration tested: basic machine installation, A4 paper, simplex printing.
- b. See the rating label on the machine for the correct voltage (V), frequency (hertz) and type of current (A) for your machine.
- c. Wireless model only (see "Features by models" on page 6).

Specifications

Print media specifications

Type	Size	Dimensions	Print media weight/Capacity ^a	
			Tray	Manual feeding in tray ^b
Plain paper	Letter	216 x 279 mm (8.5 x 11 inches)	60 to 85 g/m ² (16 to 23 lbs bond) • 130 sheets of 80 g/m ² (21 lbs bond)	60 to 85 g/m ² (16 to 23 lbs bond) • 1 sheet
	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)		
Thick paper	Refer to the Plain paper section	Refer to the Plain paper section	86 to 120 g/m ² (23 to 32 lbs bond) • 50 sheets of 120 g/m ² (32 lbs bond)	86 to 120 g/m ² (23 to 32 lbs bond) • 1 sheet

Specifications

Type	Size	Dimensions	Print media weight/Capacity ^a	
			Tray	Manual feeding in tray ^b
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) • 150 sheets of 60 g/m ² (16 lbs bond)	60 to 70 g/m ² (16 to 19 lbs bond) • 1 sheet
Cotton	Refer to the Plain paper section	Refer to the Plain paper section	75 to 90 g/m ² (20 to 24 lbs bond) • 130 sheets of 80 g/m ² (21 lbs bond)	75 to 90 g/m ² (20 to 24 lbs bond) • 1 sheet
Colored, Pre-printed, Recycled	Refer to the Plain paper section	Refer to the Plain paper section	60 to 85 g/m ² (16 to 24 lbs bond) • 130 sheets of 80 g/m ² (21 lbs bond)	60 to 85 g/m ² (16 to 24 lbs bond) • 1 sheet
Labels ^c	Letter, Legal, Oficio, US Folio, A4, JIS B5, ISO B5, Executive, A5	Refer to the Plain paper section	120 to 150 g/m ² (32 to 40 lbs bond) • 5 sheets	120 to 150 g/m ² (32 to 40 lbs bond) • 1 sheet
Card stock	Letter, Legal, Oficio, US Folio, A4, JIS B5, ISO B5, Executive, A5, Postcard 4x6	Refer to the Plain paper section	121 to 163 g/m ² (32 to 43 lbs bond) • 5 sheets	121 to 163 g/m ² (32 to 43 lbs bond) • 1 sheet
Bond paper	Refer to the Plain paper section	Refer to the Plain paper section	105 to 120 g/m ² (28 to 32 lbs bond) • 10 sheets	• 1 sheet

Specifications

Type	Size	Dimensions	Print media weight/Capacity ^a	
			Tray	Manual feeding in tray ^b
Archive	Refer to the Plain paper section	Refer to the Plain paper section	70 to 90 g/m ² (18.6 to 24 lbs bond) • 100 sheets	• 1 sheet
Glossy Photo, Matte Photo	Letter, A4, Postcard 4x6	Refer to the Plain paper section	111 to 220 g/m ² (30 to 58 lbs bond) • 1 sheets	111 to 220 g/m ² (30 to 58 lbs bond) • 1 sheet
Minimum size (custom)		76 x 152 mm (3 x 6 inches)	60 to 120 g/m ² (16 to 32 lbs bond)	
Maximum size (custom)		216 x 356 mm (8.5 x 14 inches)		

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

b. Feed one sheet at a time.

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

 If media weight is over 120 g/m² (32 lbs bond), load a paper into the tray one by one.

Specifications

System requirements

Microsoft® Windows®

Operating system	Requirement (recommended)		
	CPU	RAM	free HDD space
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

Specifications



- 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.

Macintosh

Operating system	Requirements (Recommended)		
	CPU	RAM	Free HDD space
Mac OS X 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

Specifications

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)

Specifications

Network environment



Network and wireless models only (see "Features by models" on page 6).

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	• 802.11b/g/n Wireless LAN
Network operating system	• Windows® XP, Windows Server® 2003, Windows Vista®, Windows® 7, Windows Server® 2008 R2 • Various Linux OS • Mac OS X 10.4 ~ 10.7
Network protocols	• TCP/IPv4 • DHCP, BOOTP • DNS, WINS, Bonjour, SLP, UPnP • Standard TCP/IP Printing (RAW), LPR, IPP, WSD • SNMPv 1/2/3, HTTP • TCP/IPv6 (DHCP, DNS, RAW, LPR, SNMPv 1/2/3, HTTP)
Wireless security	• Authentication: Open System, Shared Key, WPA Personal, WPA2 Personal (PSK) • Encryption: WEP64, WEP128, TKIP, AES

Regulatory information

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:



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.

Regulatory information

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>

For ENERGY STAR certified models, the ENERGY STAR label will be on your machine. Check if your machine is ENERGY STAR certified.

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。

中国能效标识

型号	能效等级	典型能耗（kW·h）
CLP-366	1	1.10
CLP-366W	1	1.20

依据国家标准 GB 25956-2010

Regulatory information

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.

Regulatory information

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.

United states of america

Federal communications commission (FCC)

Intentional emitter per FCC Part 15

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

Wireless devices that may be in your system are only qualified for use in the United States of America if an FCC ID number is on the system label.

Regulatory information

The FCC has set a general guideline of 20 cm (8 inches) separation between the device and the body, for use of a wireless device near the body (this does not include extremities). This device should be used more than 20 cm (8 inches) from the body when wireless devices are on. The power output of the wireless device (or devices), which may be embedded in your printer, is well below the RF exposure limits as set by the FCC.

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

Operation of this device is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation of the device.



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

FCC statement for wireless LAN use:



While installing and operating this transmitter and antenna combination the radio frequency exposure limit of 1 m W/cm² may be exceeded at distances close to the antenna installed. Therefore, the user must maintain a minimum distance of 20cm from the antenna at all times. This device cannot be collocated with another transmitter and transmitting antenna.

Russia only



Germany only

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

Regulatory information

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.

Regulatory information

Declaration of conformity (European countries)

Approvals and Certifications



- Hereby, Samsung Electronics, declares that this [CLP-36x Series] is in compliance with the essential requirements and other relevant provisions of Low Voltage Directive (2006/95/EC), EMC Directive (2004/108/EC).
- Hereby, Samsung Electronics, declares that this [CLP-36xW Series] is in compliance with the essential requirements and other relevant provisions of R&TTE Directive 1999/5/EC.

The declaration of conformity may be consulted at **www.samsung.com**, 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.

Regulatory information

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

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



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

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

European states qualified under wireless approvals:

EU countries

European states with restrictions on use:

EU

In France, this equipment may only be used indoors.

EEA/EFTA countries

No limitations at this time

Regulatory compliance statements

Wireless guidance

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

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

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

Regulatory information

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

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

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



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



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



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



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



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



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

Israel only

מס' אישור אלחוטי של משרד התקשורת הוא 51-29003
אסור להחליף את האנטנה המקורית של המכשיר,
ולא לעשות בו כל שינוי טכני אחר.

Regulatory information

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	○	○	○	○	○	○

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REV. 1.00

User's Guide

CLP-36x Series
CLP-36xW Series

ADVANCED

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

Some features may not be available depending on models or countries.

BASIC

This guide provides information concerning installation, basic operation and troubleshooting on windows.

ADVANCED



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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 network97).

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- If you are a Windows OS user, refer to the "Installing the driver locally" on page 22 for installing the machine's driver.
- Only use a USB cable no longer than 3 meter (118 inches).

Installation for Macintosh

- 1 Make sure that the machine is connected to your computer and powered on.
- 2 Insert the supplied software CD into your CD-ROM drive.
- 3 Double-click the CD-ROM icon that appears on your Macintosh desktop.
- 4 Double-click the **MAC_Installer** folder > **Installer OS X** icon.
- 5 Click **Continue**.
- 6 Read the license agreement and click **Continue**.
- 7 Click **Agree** to agree to the license agreement.
- 8 When the message that warns that all applications will close on your computer appears, click **Continue**.
- 9 Click **Continue** on the **User Options Pane**.
- 10 Click **Install**. All components necessary for machine operations will be installed.
If you click **Customize**, you can choose individual components to install.
- 11 Enter the password and click **OK**.
- 12 Installing software requires you to restart your computer. Click **Continue Installation**.
- 13 After the installation is finished, click **Close**.
- 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 “+” folder icon; a display window will pop up.
- 16 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 10.4, 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 > **Uninstaller OS X** icon.
- 5 Enter the password and click **OK**.
- 6 When the uninstall is done, click **OK**.



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> > find your product > Support or Downloads).

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**.

Reinstallation for Linux

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 Open the Terminal program. When the Terminal screen appears, type in the following.


```
[root@localhost root]#cd /opt/Samsung/mfp/uninstall/
```



```
[root@localhost uninstall]#./uninstall.sh
```
- 4 Click **Next**.
- 5 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.

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Supported optional devices and features may differ according to your model (see "Features by models" on page 6).

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.
- Some features and optional goods may not be available depending on model or country (see "Features by models" on page 6).

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 105):

- 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 94.
- See "IPv4 configuration using SetIP (Macintosh)" on page 95.
- See "IPv4 configuration using SetIP (Linux)" on page 96.



- The machine that does not support the network interface, it will not be able to use this feature (see "Rear view" on page 18).
- 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 152.
 - See "Setting IP address" on page 94.

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 does not have the display screen:** Press the ⊗ (**Cancel** or **Stop/Clear**) button for two 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: 165.254.192.192

Setting IP address



- The machine that does not support the network interface, it will not be able to use this feature (see "Rear view" on page 18)
- TCP/IPv6 is not supported by this program.

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.

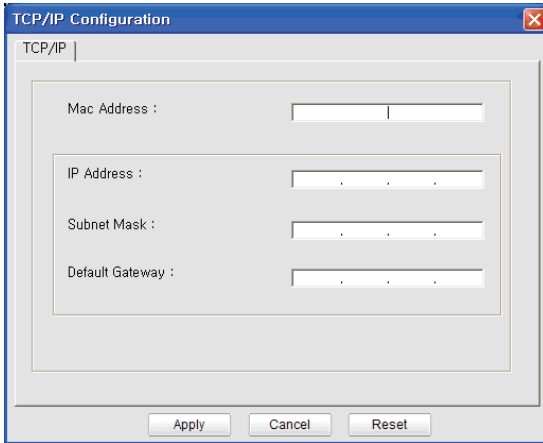
IPv4 configuration using SetIP (Windows)

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.

Wired network setup

- 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 94) 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 differ for 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**.
- 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.

Wired network setup



Find the machine's MAC address from the **Network Configuration Report** (see "Printing a network configuration report" on page 94) 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**.



Find the machine's MAC address from the **Network Configuration Report** (see "Printing a network configuration report" on page 94) 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**.

IPv4 configuration using SetIP (Linux)

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



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

1

Open **/opt/Samsung/mfp/share/utils/**.

2

Double-click the **SetIPApplet.html** file.

3

Click to open the TCP/IP configuration window.

4

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

Installing driver over the network

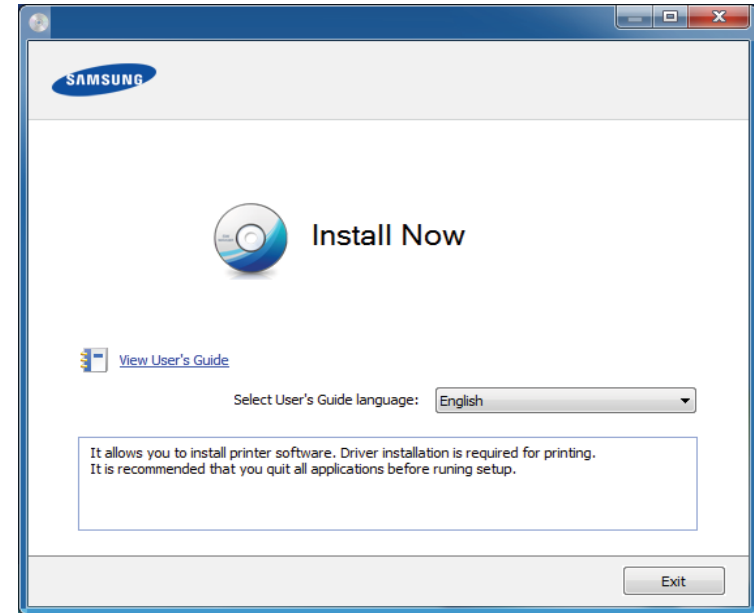


- Some features and optional goods may not be available depending on model or country (see "Features by models" on page 6).
- The machine that does not support the network interface, it will not be able to use this feature (see "Rear view" on page 18).
- You can install the printer driver and software when you insert the software CD into your CD-ROM drive.
For windows, select the printer driver and software in the **Select Software to Install** window.

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 94).
- 2 Insert the supplied software CD into your CD-ROM drive.

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**.



If your machine is not found on the network or locally, an error message appears. Select the option you want and click **Next**.

Installing driver over the network

- 5 Choose the option in **Using Enhanced Features and Participating in Printer Usage Information Collection Program**. Then, click **Next**.
- 6 Select **Network connection** on the **Printer Connection Type** screen.
- 7 If the **Connect Device** window appears, check that the machine is connected to your network. Then, click **Next**.



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

- 8 The searched machines will be shown on the screen. Select the one you wish to use and click **OK**.
- 9 Follow the instructions in the installation window.

Silent installation Mode

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

Command-line Parameters

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



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

Command- line	Definition	Description
/s or /S	Starts silent installation.	Installs machine drivers without prompting any UIs or user intervention.
/p"<port name>" or /P"<port name>"	Specifies printer port.  Network Port will be created by use of Standard TCP/IP Port monitor. For local port, this port must exist on system before being specified by command.	Printer port name can be specified as IP address, hostname, USB local port name or IEEE1284 port name. For example /p"xxx.xxx.xxx.xxx" in where, "xxx.xxx.xxx.xxx" means IP address for network printer. /p"USB001", /P"LPT1:", /p"hostname"

Installing driver over the network

Command- line	Definition	Description
/a"<dest_path>" or /A"<dest_path>"	Specifies destination path for installation.  The destination path should be a fully qualified path.	Since machine drivers should be installed on the OS specific location, this command applies to only application software.
/n"<Printer name>" or /N"<Printer name>"	Specifies printer name. Printer instance shall be created as specified printer name.	With this parameter, you can add printer instances as your wishes.
/nd or /ND	Commands not to set the installed driver as a default machine driver.	It indicates installed machine driver will not be the default machine driver on your system if there are one or more printer drivers installed. If there is no installed machine driver on your system, then this option won't be applied because Windows OS will set installed printer driver as a default machine driver.

Command- line	Definition	Description
/x or /X	Uses existing machine driver files to create printer instance if it is already installed.	This command provides a way to install a printer instance that uses installed printer driver files without installing an additional driver.
/up"<printer name>" or /UP"<printer name>"	Removes only specified printer instance and not the driver files.	This command provides a way to remove only specified printer instance from your system without effecting other printer drivers. It will not remove printer driver files from your system.
/d or /D	Uninstalls all device drivers and applications from your system.	This command will remove all installed device drivers and application software from your system.
/v"<share name>" or /V"<share name>"	Shares installed machine and add other available platform drivers for Point & Print.	It will install all supported Windows OS platform's machine drivers to system and share it with specified <share name> for point and print.
/o or /O	Opens Printers and Faxes folder after installation.	This command will open Printers and Faxes folder after the silent installation.

Installing driver over the network

Command- line	Definition	Description
/f"<log filename>" or /F"<log filename>"	Specifies log filename. The default log file is created in the system temp folder if not specified.	It will create a log file to a specified folder.
/h, /H or /?	Shows Command-line Usage.	

Macintosh

- 1 Make sure that the machine is connected to your network 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 Click **Continue**.
- 6 Read the license agreement and click **Continue**.
- 7 Click **Agree** to agree to the license agreement.

8 When the message which warns that all applications will close on your computer appears, click **Continue**.

9 Click **Continue** on the **User Options Pane**.



If you have not set the IP address yet, click Set IP address and refer to "IPv4 configuration using SetIP (Macintosh)" on page 95. If you want to set the wireless setting, refer to "Setup using Macintosh" on page 116.

10 Click **Install**. All components necessary for machine operations will be installed.

If you click **Customize**, you can choose individual components to install.

11 Enter the password and click **OK**.

12 Installing software requires you to restart your computer. Click **Continue Installation**.

13 After the installation is finished, click **Close**.

Installing driver over the network

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 10.4, click **IP Printer**.

- For Mac OS X 10.5-10.7, click **IP**.

17 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.

18 Enter the machine's IP address in the **Address** input field.

19 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.

20 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**.

21 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 (www.samsung.com > find your product > Support or Downloads).

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 Unified Linux Driver package and open the new directory.
- 4** Double-click the **cdroot** folder > **autorun**.

Installing driver over the network

- 5 The Samsung installer window opens. Click **Next**.
- 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**.
- 11 After the machine is added, click **Finish**.
- 12 When installation is done, click **Finish**.
- 7 Enter the printer description and click **Next**.
- 8 After the machine is added, 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**.

IPv6 configuration



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**.

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

From the control panel

- 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 94).
- 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.

IPv6 configuration

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 > TCP/IP (IPv6) > 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.

From the SyncThru™ Web Service



For models that do not have the display screen on the control panel, you need to access **SyncThru™ Web Service** first using the IPv4 address and follow the below procedure to use IPv6.

- 1 Access a web browser, such as Internet Explorer, from Windows. Enter the machine IP address (<http://xxx.xxx.xxx.xxx>) in the address field and press the Enter key or click **Go**.
- 2 If it's your first time logging into **SyncThru™ Web Service** you need to log-in as an administrator. Type in the below default ID and password. We recommend you to change the default password for security reasons.
 - **ID: admin**
 - **Password: sec00000**
- 3 When the **SyncThru™ Web Service** window opens, move the mouse cursor over the **Settings** of the top menu bar and then click **Network Settings**.
- 4 Click **TCP/IPv6** on the left pane of the website.
- 5 Check the **IPv6 Protocol** check box to activate IPv6.

IPv6 configuration

- 6 Check the **Manual Address** check box. Then, the **Address/Prefix** text box is activated.
- 7 Enter the rest of the address (e.g.,:3FFE:10:88:194::AAAA. "A" is the hexadecimal 0 through 9, A through F).
- 8 Choose the DHCPv6 configuration.
- 9 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 94).
- 3 Enter the IPv6 addresses (e.g.,: http://[FE80::215:99FF:FE66:7701]).



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

Wireless network setup



- Make sure your machine supports wireless networking. Wireless networking may not be available depending on the model (see "Features by models" on page 6).
- If the IPv6 network seems to not be working, set all the network settings to the factory defaults and try again using **Clear Setting**.

Wireless network name and network password

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

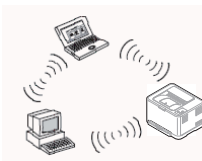
Getting started

Understanding your network type

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



Infrastructure mode
This is an environment generally used for homes and SOHOs (Small Office/ Home Office). This mode uses an access point to communicate with the wireless machine.



Ad hoc mode
This mode does not use an access point. The wireless computer and wireless machine communicate directly.

Wireless network setup

Introducing wireless set up methods

You can set wireless settings either from the machine or the computer. Choose the setting method from the below table.



Some wireless network installation types may not be available depending on the model or country.

Set up method	Connecting method	Description & Reference	
With Access Point	From th computer	Windows user, see "Access point via USB cable (recommended)" on page 112.	A
		Mac user, see "Access point via USB cable (recommended)" on page 117.	B
		See "Using a network cable" on page 120.	C
	From th machine's control panel	- See "Machines with a display screen" on page 109. - See "Machines without a display screen" on page 110.	D
		See "Using the menu button" on page 111.	E
Without Access Point	From th computer	Windows user, see "Ad hoc via USB cable" on page 114.	F
		Mac user, see "Ad hoc via USB cable" on page 118.	G
	Wi-Fi Direct setup	See "Setting up Wi-Fi Direct" on page 124.	H



If problems occur during wireless set up or driver installation, refer to the troubleshooting chapter (see "Troubleshooting" on page 125).

Wireless network setup

Using the WPS button

If your machine and an access point (or wireless router) support Wi-Fi Protected Setup™ (WPS), you can easily configure the wireless network settings by pressing the  (WPS) button on the control panel without a computer.



- If you want to use the wireless network using the infrastructure mode, make sure that the network cable is disconnected from the machine. Using the **WPS (PBC)** button or entering the PIN from the computer to connect to the access point (or wireless router) varies depending on the access point (or wireless router) you are using. Refer to the user's guide of the access point (or wireless router) you are using.
- When using the WPS button to set the wireless network, security settings may change. To prevent this, lock the WPS option for the current wireless security settings. The option name may differ depending on the access point (or wireless router) you are using.

Items to prepare

- Check if the access point (or wireless router) supports Wi-Fi Protected Setup™ (WPS).
- Check if your machine supports Wi-Fi Protected Setup™ (WPS).
- Networked computer (PIN mode only)

Choosing your type

There are two methods available to connect your machine to a wireless network using the  (WPS) button on the control panel.

The **Push Button Configuration (PBC)** method allows you to connect your machine to a wireless network by pressing both the  (WPS) button on the control panel of your machine and the WPS (PBC) button on a Wi-Fi Protected Setup™ WPS-enabled access point (or wireless router) respectively.

The **Personal Identification Number (PIN)** method helps you connect your machine to a wireless network by entering the supplied PIN information on a Wi-Fi Protected Setup™ WPS-enabled access point (or wireless router).

Factory default in your machine is **PBC** mode, which is recommended for a typical wireless network environment.



You can change the WPS mode in control panel ( **(Menu)** > **Network** > **Wireless** > **OK** > **WPS Setting**).

Wireless network setup

Machines with a display screen

Connecting in PBC mode

- 1 Press and hold the  (WPS) button on the control panel for more than 2 seconds.

The machine starts waiting for up to two minutes until you press the WPS (PBC) button on the access point (or wireless router).
- 2 Press the **WPS (PBC)** button on the access point (or wireless router).

The messages are displayed on the display screen in the order below:
 - a **Connecting:** The machine is connecting to the access point (or wireless router).
 - b **Connected:** When the machine is successfully connected to the wireless network, the WPS LED light stays on.
 - c **AP SSID:** After completing the wireless network connection process, the AP's SSID information appears on the display.
- 3 Insert the supplied software CD into your CD-ROM drive, and follow the instructions in the window to set up the wireless network.

Connecting in PIN mode

- 1 Press and hold the  (WPS) button on the control panel for more than 2 seconds.
- 2 The eight-digit PIN appears on the display.

You need to enter the eight-digit PIN within two minutes on the computer that is connected to the access point (or wireless router).

The messages are displayed on the display screen in the order below:
 - a **Connecting:** The machine is connecting to the wireless network.
 - b **Connected:** When the machine is successfully connected to the wireless network, the WPS LED light stays on.
 - c **SSID Type:** After completing the wireless network connection process, the AP's SSID information is displayed on the LCD display.
- 3 Insert the supplied software CD into your CD-ROM drive, and follow the instructions in the window to set up the wireless network.

Wireless network setup

Machines without a display screen

Connecting in PBC mode

- 1 Press and hold the  (WPS) button on the control panel for about 2 - 4 seconds until the status LED blinks quickly.

The machine starts connecting to the wireless network. The LED blinks slowly for up to two minutes until you press the PBC button on the access point (or wireless router).
- 2 Press the **WPS (PBC)** button on the access point (or wireless router).
 - a The light blinks fast on the WPS LED. The machine is connecting to the access point (or wireless router).
 - b When the machine is successfully connected to the wireless network, the WPS LED light stays on.
- 3 Insert the supplied software CD into your CD-ROM drive, and follow the instructions in the window to set up the wireless network.

Connecting in PIN mode

- 1 The network configuration report, including PIN, must be printed (see "Printing a network configuration report" on page 94).

In ready mode, Press the  (**Cancel** or **Stop/Clear**) button for more than five seconds on the control panel.

The machine without the  (**Cancel** or **Stop/Clear**) button: Press the **(WPS)**  button for more than ten seconds on the control panel.

You can find your machine's PIN.
- 2 Press and hold the  (WPS) button on the control panel for more than 4 seconds until the status LED stays on.

The machine starts connecting to the access point (or wireless router).
- 3 You need to enter the eight-digit PIN within two minutes on the computer that is connected to the access point (or wireless router).

The LED blinks slowly for up to two minutes until you enter the eight-digit PIN.

The WPS LED blinks in the order below:
 - a The light blinks fast on the WPS LED. The machine is connecting to the access point (or wireless router).
 - b When the machine is successfully connected to the wireless network, the WPS LED light stays on.
- 4 Insert the supplied software CD into your CD-ROM drive, and follow the instructions in the window to set up the wireless network.

Wireless network setup

Re-connecting to a network

When the wireless function is off, the machine automatically tries to re-connect to the access point (or wireless router) with the previously used wireless connection settings and address.



In the following cases, the machine automatically re-connects to the wireless network:

- The machine is turned off and on again.
- The access point (or wireless router) is turned off and on again.

Canceling the connection process

To cancel the wireless network connection when the machine is connecting to the wireless network, press and release the  (**Cancel** or **Stop/Clear**) or  (**Power/Wakeup**) button on the control panel. **You need to wait 2 minutes to re-connect to the wireless network.**

Disconnecting from a network

To disconnect the wireless network connection, press the  (WPS) button on the control panel for more than two seconds.

- **When the Wi-Fi network is in idle mode:** The machine is immediately disconnected from the wireless network and the WPS LED turns off.
- **When the Wi-Fi network is being used:** While the machine waits until the current job is finished, the light blinks fast on the WPS LED. Then, the wireless network connection is automatically disconnected and the WPS LED turns off.

Using the menu button



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

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

Wireless network setup



After completing the wireless network connection, you need to install a machine driver to print from an application (see "Installing driver over the network" on page 97).

- 1 Press the  (**Menu**) button on the control panel.
- 2 Press **Network > Wireless > WLAN Settings**.
- 3 Press the **OK** to select the setup method you want.
 - **Wizard** (recommended): In this mode, the setup is automatic. The machine will display a list of available networks from which to choose. After a network is chosen then printer will prompt for the corresponding security key.
 - **Custom**: In this mode, users can give or edit manually their own SSID , or choose the security option in detail.

Setup using Windows



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

Access point via USB cable (recommended)

Items to prepare

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

Creating the infrastructure network

- 1 Check whether the USB cable is connected to the machine.
- 2 Turn on your computer, access point, and machine.
- 3 Insert the supplied software CD into your CD-ROM drive.
- 4 Click **Install Now**.
- 5 Read the **License Agreement**, and select **I accept the terms of the License Agreement**. Then, click **Next**.
- 6 Choose the option in **Using Enhanced Features and Participating in Printer Usage Information Collection Program**. Then, click **Next**.

Wireless network setup

- 7 Select **Configure the wireless network connection using USB cable** on the **Printer Connection Type** screen. Then click **Next**.
- 8 After searching, the window shows the wireless network devices. Select the name (SSID) of the access point you want to use and click **Next**.

If the wireless network is already set up, the **Wireless Network Information** window appears. Select **I want to install software with the current settings. (Recommended)**. Then, click **Next**.



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

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

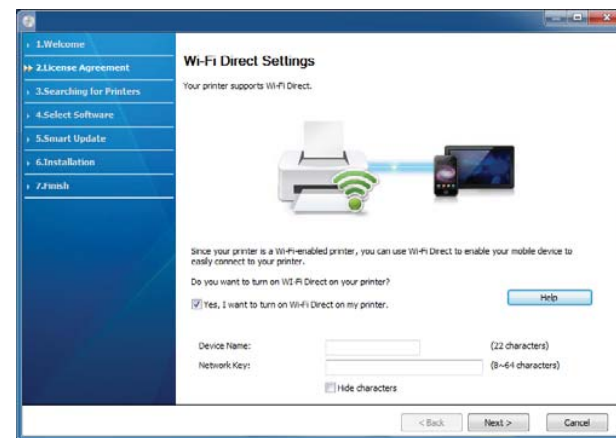
- **Confirm Network Password:** Confirm the encryption network password value.
- **WEP Key Index:** If you are using WEP Encryption, select the appropriate **WEP Key Index**.



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

Enter the Network Password of the access point (or router).

- 9 When the network connection window appears, disconnect the network cable. Then, click **Next**. The network cable connection can interfere with searching for wireless devices.
- 10 If your printer supports Wi-Fi Direct, the following screen appears. Click **Next**.



Wireless network setup



- Can start to build Wi-Fi Direct by using Samsung Easy Printer Manager (see "Setting up Wi-Fi Direct" on page 124).
- **Network Name(SSID):** The default Network Name is the model name and the maximum length is 22 characters (not including "DIRECT-XX-").
- **Network Password** is the numeric string, and the size is 8 ~ 64 characters.

- 11** When the wireless network set up is completed, disconnect the USB cable between the computer and machine. Click **Next**.
- 12** Click **Next** when the **Printers Found** window appears.
- 13** Select the components to be installed. Click **Next**.
- 14** After selecting the components, you can also change the machine name, set the machine to be shared on the network, set the machine as the default machine, and change the port name of each machine. Click **Next**.
- 15** If you want to register your machine with the Samsung web site and receive useful information, click **On-line Registration**. If not, click **Finish**.

Ad hoc via USB cable

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

Items to prepare

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

Creating the ad hoc network in Windows

- 1** Check whether the USB cable is connected to the machine.
- 2** Turn on your computer and the wireless network machine.
- 3** Insert the supplied software CD into your CD-ROM drive.
- 4** Click **Install Now**.
- 5** Read the **License Agreement**, and select **I accept the terms of the License Agreement**. Then, click **Next**.
- 6** Choose the option in **Using Enhanced Features and Participating in Printer Usage Information Collection Program**. Then, click **Next**.

Wireless network setup

- 7 Select **Configure the wireless network connection using USB cable** on the **Printer Connection Type** screen. Then click **Next**.
- 8 After searching the wireless networks, a list of wireless networks your machine has searched appears. Click **Advanced Setting**.



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

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

Select **Open System** or **Shared Key** for the authentication and click **Next**.

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

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

Wireless network setup



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

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

- **For the DHCP method**

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

- **For the Static method**

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

For example,

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

- IP address: 169.254.133.42
- Subnet Mask: 255.255.0.0

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

- IP address: 169.254.133.**43**
- Subnet Mask: 255.255.0.0 (Use the computer's subnet mask.)
- Gateway: 169.254.133.**1**

- 10** The **Wireless Network Setting Complete** window appears. Click **Next**.
- 11** When the wireless network settings are completed, disconnect the USB cable between the computer and machine. Click **Next**.
- 12** Click **Next** when the **Printers Found** window appears.
- 13** Select the components to be installed. Click **Next**.
- 14** After selecting the components, you can also change the machine name, set the machine to be shared on the network, set the machine as the default machine, and change the port name of each machine. Click **Next**.
- 15** If you want to register your machine with the Samsung web site and receive useful information, click **On-line Registration**. If not, click **Finish**.

Setup using Macintosh

Items to prepare

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

Wireless network setup

- USB cable

Access point via USB cable (recommended)

- 1 Check whether the USB cable is connected to the machine.
- 2 Turn on your computer, access point, and machine.
- 3 Insert the supplied software CD into your CD-ROM drive.
- 4 Double-click the CD-ROM icon that appears on your Macintosh desktop.
- 5 Double-click the **MAC_Installer** folder > **Installer OS X** icon.
- 6 Click **Continue**.
- 7 Read the license agreement and click **Continue**.
- 8 Click **Agree** to agree to the license agreement.
- 9 When the message that warns that all applications will close on your computer appears, click **Continue**.
- 10 Click **Wireless Network Setting** button on the **User Options Pane**.

- 11 After searching, the window shows the wireless network devices. Select the name (SSID) of the access point you want to use and click **Next**.

If the wireless network is already set up, the **Wireless Network Information** window appears. Select **I want to install software with the current settings. (Recommended)**. Then, click **Next**.



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

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

Wireless network setup

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

Enter the Network Password of the access point (or router).

- 12** If your printer supports Wi-Fi Direct, the following screen appears.
Click **Next**.



- Can start to build Wi-Fi Direct by using Samsung Easy Printer Manager (see "Setting up Wi-Fi Direct" on page 124).
- **Network Name(SSID):** The default Network Name is the model name and the maximum length is 22 characters (not including "DIRECT-").
- **Network Password** is the numeric string, and the size is 8 ~ 64 characters.

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

- 14** Wireless network set up is completed. After the installation is finished, click **Quit**.



After completing the wireless network connection, you need to install a machine driver to print from an application (see "Installation for Macintosh" on page 88).

Ad hoc via USB cable

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

Items to prepare

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

Wireless network setup

Creating the ad hoc network in Macintosh

- 1 Check whether the USB cable is connected to the machine.
- 2 Turn on your computer and the wireless network machine.
- 3 Insert the supplied software CD into your CD-ROM drive.
- 4 Double-click the CD-ROM icon that appears on your Macintosh desktop.
- 5 Double-click the **MAC_Installer** folder > **Installer OS X** icon.
- 6 Click **Continue**.
- 7 Read the license agreement and click **Continue**.
- 8 Click **Agree** to agree to the license agreement.
- 9 When the message that warns that all applications will close on your computer appears, click **Continue**.
- 10 Click **Wireless Network Setting** button on the **User Options Pane**.
- 11 After searching the wireless networks, a list of wireless networks your machine has searched appears. Click **Advanced Setting**.



- **Enter the wireless Network Name:** Enter the SSID name (SSID is case-sensitive).
- **Operation Mode:** Select ad hoc.

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

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

Select **Open System** or **Shared Key** for the authentication and click **Next**.

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

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

Wireless network setup



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

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

- **For the DHCP method**

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

- **For the Static method**

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

For example,

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

- IP address: 169.254.133.42
- Subnet Mask: 255.255.0.0

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

- IP address: 169.254.133.**43**
- Subnet Mask: 255.255.0.0 (Use the computer's subnet mask.)
- Gateway: 169.254.133.1

13

When the window that tells you that the network cable connection is confirmed appears, disconnect the network cable and click **Next**.

If the network cable is connected, it may have trouble finding the machine when configuring the wireless network.

14

The wireless network connects according to the network configuration.

15

Wireless network set up is completed. After installation is finished, click **Quit**.



After completing the wireless network connection, you need to install a machine driver to print from an application (see "Installation for Macintosh" on page 88).

Using a network cable



Machines that do not support the network interface will not be able to use this feature (see "Rear view" on page 18).

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

Wireless network setup



- After completing the wireless network connection, you need to install a machine driver to print from an application (see "Installing driver over the network" on page 97).
- See your network administrator, or the person that set up your wireless network, for information about your network configuration.

Items to prepare

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

Printing a network configuration report

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

See "Printing a network configuration report" on page 94.

IP setting using SetIP Program (Windows)

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

See "Setting IP address" on page 94.

Configuring the machine's wireless network

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

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

Using SyncThru™ Web Service

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

Wireless network setup

1 Check whether or not the network cable is connected to the machine. If not, connect the machine with a standard network cable.

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

For example,



3 Click **Login** on the upper right of the SyncThru™ Web Service website.

4 If it's your first time logging into **SyncThru™ Web Service** you need to log-in as an administrator. Type in the below default ID and password. We recommend you to change the default password for security reasons.

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

5 When the **SyncThru™ Web Service** window opens, click **Network Settings**.

6 Click **Wireless > Wizard**.



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

7 Select the one **Network Name(SSID)** in the list.

- **SSID:** SSID (Service Set Identifier) is a name that identifies a wireless network, access points, and wireless devices attempting to connect to a specific wireless network must use the same SSID. The SSID is case sensitive.
- **Operation Mode:** **Operation Mode** refers to the type of wireless connections (see "Wireless network name and network password" on page 106).
 - **Ad-hoc:** Allows wireless devices to communicate directly with each other in a peer-to-peer environment.
 - **Infrastructure:** Allows wireless devices to communicate with each other through an access point.



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

8 Click **Next**.

If the wireless security setting window appears, enter the registered password (network password) and click **Next**.

9 The confirmation window appears, please check your wireless setup. If the setup is right, click **Apply**.

Wireless network setup



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

- 10 Insert the supplied software CD into your CD-ROM drive, and follow the instructions in the window to set up the wireless network.

Turning the Wi-Fi network on/off



If your machine has a display, you can also turn on/off the Wi-Fi from the machine's control panel using the **Network** menu.

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

For example,



- 3 Click **Login** on the upper right of the SyncThru™ Web Service website.

4

If it's your first time logging into **SyncThru™ Web Service** you need to log-in as an administrator. Type in the below default ID and password. We recommend you to change the default password for security reasons.

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

5

When the **SyncThru™ Web Service** window opens, click **Network Settings**.

6

Click **Wireless > Custom**.

You can also turn the Wi-Fi network on/off.

Setting the Wi-Fi Direct for mobile printing

Wi-Fi Direct is an easy-to-setup peer-to-peer connection method between the Wi-Fi Direct certified printer and a mobile device that provides a secure connection and better throughput than ad hoc mode.

With Wi-Fi Direct, you can connect your printer to a Wi-Fi Direct network while concurrently connecting to an access point. You can also use a wired network and a Wi-Fi Direct network simultaneously so multiple users can access and print documents both from Wi-Fi Direct and from a wired network.

Wireless network setup



- You cannot connect your mobile device to the internet through the printer's Wi-Fi Direct.
- The supported protocol list may differ from your model, Wi-Fi Direct networks do NOT support IPv6, network filtering, IPsec, WINS, and SLP services.
- The maximum number of devices that can be connected via Wi-Fi Direct is 3.

Setting up Wi-Fi Direct

You can enable Wi-Fi Direct feature by one of the following methods.

From the USB cable-connected computer(recommended)

After the driver installation is complete, Samsung Easy Printer Manager can be set and changes in the Wi-Fi Direct can be made.



Samsung Easy Printer Manager is Available for Windows and Mac OS users only.

- From the **Start** menu, select **Programs** or **All Programs > Samsung Printers > Samsung Easy Printer Manager > Device Settings > Network**.
 - **Wi-Fi Direct On/Off**: Select **On** to enable.

- **Device Name**: Enter the printer's name for searching for your printer on a wireless network. By default, the device name is the model name.
- **IP Address**: Enter the IP address of the printer. This IP address is used only for the local network and not for the infrastructure wired or wireless network. We recommend using the default local IP address (the default local IP address of the printer for Wi-Fi Direct is 192.168.3.1)
- **Group Owner**: Activate this option to assign the printer the Wi-Fi Direct group's owner. The **Group Owner** acts similar to a wireless access point. We recommend activating this option.
- **Network Password**: If your printer is a **Group Owner**, a **Network Password** is required for other mobile devices to connect to your printer. You can configure a network password yourself, or can remember the given Network Password that is randomly generated by default.

From the machine (Machines with a display screen)

- Select **Network > Wireless > Wi-Fi Direct** from the control panel.
- Enable **Wi-Fi Direct**.

From the network-connected computer

If your printer is using a network cable or a wireless access point, you can enable and configure Wi-Fi Direct from SyncThru™ Web Service.

- Access **SyncThru™ Web Service**, select **Settings > Network Settings > Wireless > Wi-Fi Direct**.
- Enable or disable **Wi-Fi Direct** and set other options.

Wireless network setup



- For Linux OS users,
 - Print an IP network configuration report to check the output (see "Printing a network configuration report" on page 94).
 - Access **SyncThru Web Service**, select **Settings > Network Settings > Wireless > Wi-Fi Direct**.
 - Enable or disable **Wi-Fi Direct**.

Setting up the mobile device

- After setting up Wi-Fi Direct from the printer, refer to the user manual of the mobile device you are using to set its Wi-Fi Direct.
- After setting up Wi-Fi Direct, you need to download the mobile printing application (For example: Samsung Mobile printer) to print from your smartphone.



- When you have found the printer you want to connect to from your mobile device, select the printer and the printer's LED will blink. Press the WPS button on the printer and it will be connected to your mobile device.
- If your mobile device does not support WPS, you need to enter the "Network Key" of a printer instead of pushing the WPS button.

Troubleshooting

Problems during setup or driver installation

Printers Not Found

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

Connecting Failure - SSID Not Found

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

Wireless network setup

Connecting Failure - Invalid Security

- Security is not configured correctly. Check the configured security on your access point and machine.

Connecting Failure - General Connection Error

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

Connecting Failure - Connected Wired Network

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

Connecting Failure - Assigning the IP address

- Cycle the power for the access point (or wireless router) and machine.

PC Connection Error

- The configured network address is unable to connect between your computer and machine.
 - For a DHCP network environment

The receives the IP address automatically (DHCP) when computer is configured to DHCP.



If the printing job is not working in DHCP mode, the problem may be caused by the automatically changed IP address. Compare the IP address between the product's IP address and the printer port's IP address.

How to compare:

- 1 Print the network information report of your printer, and then check the IP address (see "Printing a network configuration report" on page 94).
- 2 Check the printer port's IP address from your computer.
 - a Click the Windows **Start** menu.
 - b 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**.
 - c Right-click your machine.
 - d For Windows XP/2003/2008/Vista, press **Properties**.
For Windows 7 and Windows Server 2008 R2, from context menus, select the **Printer properties**.
If **Printer properties** item has ► mark, you can select other printer drivers connected with selected printer.

Wireless network setup

- e Click **Port** tab.
 - f Click **Configure Port..** button.
 - g Check if **Printer Name** or **IP Address:** is the IP address on the network configuration Sheet.
- 3 Change the printer port's IP address if it is different from the network information report's.
- If you want to use the software installation CD to change the port IP, connect to a network printer. Then reconnect the IP address.

- For a Static network environment

The machine uses the static address when the computer is configured to static address.

For example,

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

- IP address: 169.254.133.42
- Subnet Mask: 255.255.0.0

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

- IP address: 169.254.133.**43**
- Subnet Mask: 255.255.0.0 (Use the computer's subnet mask.)
- Gateway: 169.254.133.1

Other problems

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



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

- You cannot enable wired and wireless networks at the same time.
 - Your computer, access point (or wireless router), or machine may not be turned on.
 - Check the wireless reception around the machine. If the router is far from the machine or there is an obstacle, you might have difficulty receiving the signal.
 - Cycle the power for the access point (or wireless router), machine, and computer. Sometimes cycling the power can recover network communication.
 - Check whether firewall software (V3 or Norton) is blocking the communication.
- If the computer and the machine are connected on the same network and it cannot be found when searching, firewall software might be blocking the communication. Refer to the user's guide for the software to turn it off and try searching for the machine again.
- Check whether the machine's IP address is allocated correctly. You can check the IP address by printing the network configuration report.
 - Check whether the access point (or wireless router) has a configured security (password). If it has a password, refer to the access point (or wireless router) administrator.

Wireless network setup

- Check the machine's IP address. Reinstall the machine driver and change the settings to connect to the machine on the network. Due to the characteristics of DHCP, the allocated IP address could change if the machine is not used for a long time or if the access point has been reset.

Register the product's MAC address when you configure the DHCP server on the access point (or wireless router). Then you can always use the IP address that is set with the MAC address. You can identify the Mac address of your machine by printing a network configuration report (see "Printing a network configuration report" on page 94).

- Check the wireless environment. You might not be able to connect to the network in the infrastructure environment where you need to type in a user's information before connecting to the access point (or wireless router).
- This machine only supports IEEE 802.11 b/g/n and Wi-Fi. Other wireless communication types (e.g., Bluetooth) are not supported.
- When using the ad hoc mode, in operating systems such as Windows Vista, you might need to set the wireless connection setting every time you use the wireless machine.
- You cannot use infrastructure mode and ad hoc mode at the same time for Samsung wireless network machines.
- The machine is within the range of the wireless network.
- The machine is located away from obstacles that could block the wireless signal.

Remove any large metal objects between the access point (or wireless router) and the machine.

Make sure the machine and wireless access point (or wireless router) are not separated by poles, walls, or support columns containing metal or concrete.

- The machine is located away from other electronic devices that may interfere with the wireless signal.

Many devices can interfere with the wireless signal, including a microwave oven and some Bluetooth devices.

- Whenever the configuration of your access point (or wireless router) changes, you must do the product's wireless network setup again.
- The maximum number of device that can be connected via **Wi-Fi Direct** is 3.
- If **Wi-Fi Direct** is **ON**, the connection between the AP and the machine will be the 802.11 b/g interface.

Samsung MobilePrint

What is Samsung MobilePrint?

Samsung MobilePrint is a free application that enables users to print photos, documents, and web pages directly from your smartphone or tablet. **Samsung MobilePrint** is not only compatible with your Android, Windows and iOS smart phones but also with your iPod Touch and tablet PC. It connects your mobile device to a network connected Samsung printer or to a wireless printer through a Wi-Fi access point. Installing a new driver or configuring network settings isn't necessary – just simply install the **Samsung MobilePrint** application, and it will automatically detect compatible Samsung printers. Besides printing photos, web pages, and PDFs, scanning is also supported. If you have Samsung multifunction printer, scan any document into a JPG, PDF, or PNG format for quick and easy viewing on your mobile device.

Downloading Samsung MobilePrint

To download **Samsung MobilePrint**, go to the application store (Samsung Apps, Android Market, App Store, Marketplace) on your mobile device, and just search for “**Samsung MobilePrint**.” You can also visit iTunes for Apple devices or Marketplace for Windows devices on your computer.



Supported Mobile OS

- Android OS 2.1 or higher
- iOS 4.0 or higher
- Windows Phone 7 or higher

Supported devices

- **iOS 4.0 or higher:** iPod Touch, iPhone, iPad
- **Android 2.1 or higher:** Galxy S, Galaxy S2, Galaxy Tab, and Android mobile devices
- **Windows Phone 7 or higher:** Samsung Focus, Omnia7, and OminaW, and Windows mobile devices

Google Cloud Print

Google Cloud Print™ is a service that allows you to print to a printer using your mobile phone, tablet, or any other web-connected devices. Just register your Google account with the printer, and you are ready to use the Google Cloud Print service. You can print your document or email with Chrome OS, Chrome browser, or a Gmail/ GOOGLE DOCS application on your mobile device, so you don't need to install the printer driver on the mobile device. Refer to the Google website (<http://support.google.com/cloudprint>) for more information about Google Cloud Print™.

Registering your Google account to the printer



- Make sure the printer machine is turned on and connected to a wired or wireless network that has access to the Internet.
- You should create your Google account in the advance.

- 1 Open the Chrome browser.
- 2 Visit www.google.com.
- 3 Sign in to the Google website with your Gmail™ address.
- 4 Start Chrome and enter your printer's IP address in the browser window.
- 5 Click **Login** in the upper right corner of the SyncThru™ Web Service website.

6

If it's your first time logging into **SyncThru™ Web Service** you need to log-in as an administrator. Type in the below default **ID** and **Password**. We recommend you to change the default password for security reasons.

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



If the network environment is using a proxy server, you need to configure the proxy's IP and port number from **Settings > Network Settings > Google Cloud Print > Proxy Setting**. Contact your network service provider or network administrator for more information.

7

When the **SyncThru™ Web Service** window opens, click **Settings > Network Settings > Google Cloud Print**.

8

Enter your printer's name and description.

9

Click **Register**.

The confirmation pop-up window appears.



If you set the browser to block pop-ups, the confirmation window will not appear. Allow the site to show pop-ups.

10

Click **Finish printer registration**.

Google Cloud Print

- 11 Click **Manage your printers**.
Now your printer is registered with Google Cloud Print service.
Google Cloud Print-ready devices will appear in the list.

Printing with Google Cloud Print

The printing procedure varies depending on the application or the device you are using. You can see the application list that supports Google Cloud Print service.



Make sure the printer is turned on and connected to a wired or wireless network that has access to the Internet.

Printing from an application on mobile device

The following steps are an example of using the GOOGLE DOCS app from Android mobile phone.

- 1 Install the Cloud Print application on your mobile device.



If you do not have the application, download it from the application store such as Android Market or App Store.

- 2 Access the GOOGLE DOCS application from your mobile device.
- 3 Tap the option  button of the document that you want to print.
- 4 Tap the send  button.
- 5 Tap the Cloud Print () button.
- 6 Set the printing options if you want.
- 7 Tap **Click here to Print**.

Printing from the Chrome browser

The following steps are an example of using the Chrome browser.

- 1 Run Chrome.
- 2 Open the document or email that you want to print.
- 3 Click the wrench icon () in the browser's top right corner.
- 4 Click **Print**. A new tab for printing appears.
- 5 Select **Print with Google Cloud Print**.
- 6 Click the **Print** button.



3. Special features

This chapter explains special printing features.

- **Altitude adjustment** 133
- **Changing the default print settings** 134
- **Setting your machine as a default machine** 135
- **Using advanced print features** 136
- **Macintosh printing** 143
- **Linux printing** 145

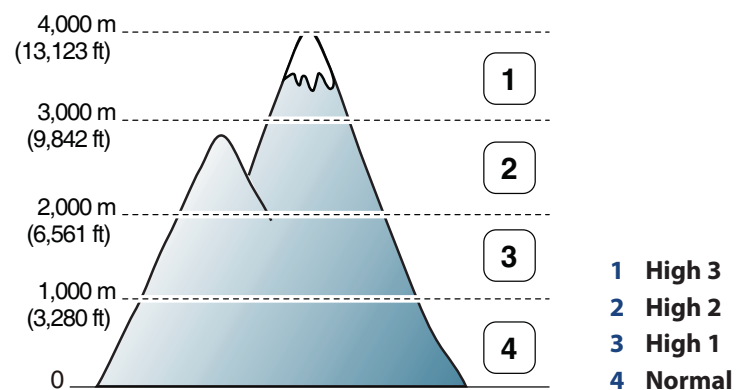


The procedures in this chapter are mainly based on Windows 7.

Altitude adjustment

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

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



- For Windows and Macintosh users, you set from **Samsung Easy Printer Manager** >  **(Switch to advanced mode)** > **Device Settings**. See "Device Settings" on page 156.



- If your machine is connected to the network, you can set the altitude via SyncThru™ Web Service (see "Using SyncThru™ Web Service" on page 152).

Changing the default print settings

- 1 Click the Windows **Start** menu.
- 2 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.

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



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

Setting your machine as a default machine

- 1 Click the Windows **Start** menu.
- 2 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.

Using advanced print features



XPS printer driver: used to print XPS file format.

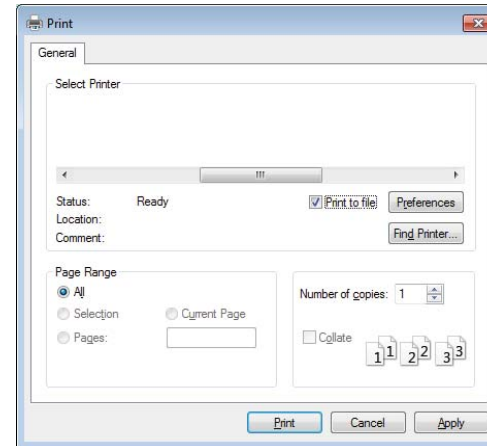
- See "Features by models" on page 6.
- The XPS printer driver can be installed only on Windows Vista OS or higher.
- Install optional memory when an XPS job does not print because the printer is out of memory.
- You can install the XPS printer driver when you insert the software CD into your CD-ROM drive. When the installation window appears, select **Custom Installation**. You can select the XPS printer driver in the **Select Software** window.
- For models that provide XPS driver from the Samsung website, www.samsung.com > find your product> Support or downloads.

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.

Using advanced print features

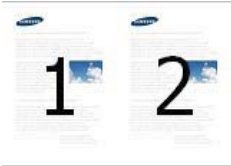
Understanding special printer features

You can use advanced printing features when using your machine.

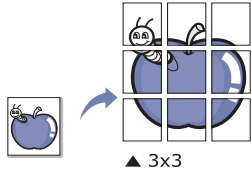
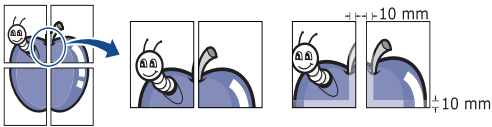
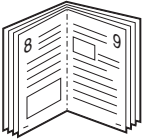
To take advantage of the printer features provided by your printer driver, click **Properties** or **Preferences** in the application's **Print** window to change the print settings. The machine name, that appears in the printer properties window may differ depending on the machine in use.



- Some menus may not appear on the display depending on options or models. If so, it is not applicable to your machine.
- Select the **Help** or click the  button from the window or press **F1** on your keyboard and click on any option you want to know about (see "Using help" on page 36).

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.

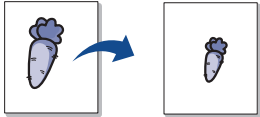
Using advanced print features

Item	Description
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^a 	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).

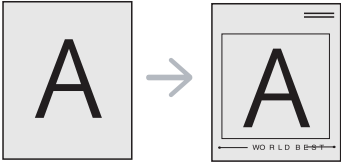
Using advanced print features

Item	Description
• Double-sided Printing^a • Double-sided Printing (Manual)^a	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. • We recommend not to print on both sides of the special media, such as labels, envelopes, or thick paper. It may cause a paper jam or damage the machine. • Printer Default: If you select this option, this feature is determined by the settings you have selected on the control panel of the machine. This option is available only when you use the PCL / XPS printer driver (see "Features by models" on page 6). • 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. This option is not available when you use the Reverse Double-Sided Printing (Manual).

Using advanced print features

Item	Description
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.
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.

Using advanced print features

Item	Description
Overlay^a 	This option is available when you use the PCL/SPL printer driver (see "Software" on page 7). 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 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.

Using advanced print features

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.

a. This option is not available when you use XPS driver.

Macintosh printing



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

Printing a document

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

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

Changing printer settings

You can use advanced printing features when using your machine.

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

Printing multiple pages on one sheet

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

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

Macintosh printing

Printing on both sides of the paper



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

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

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

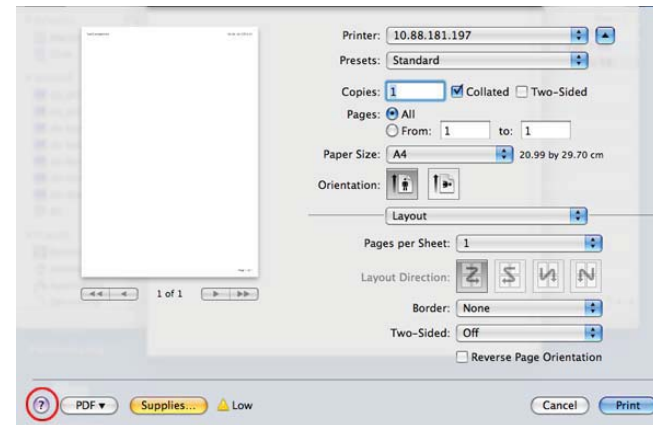
- 1 From your Macintosh application, select **Print** from the **File** menu.
- 2 Select **Layout** from the drop-down list under **Orientation**.
- 3 Select a binding orientation from the **Two-Sided** option.
- 4 Select the other options to use.
- 5 Click **Print** and the machine prints on both sides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



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

Using help

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



Linux printing



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

Printing from applications

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

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

4

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

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



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

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

5

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

6

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

7

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

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

Linux printing

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.

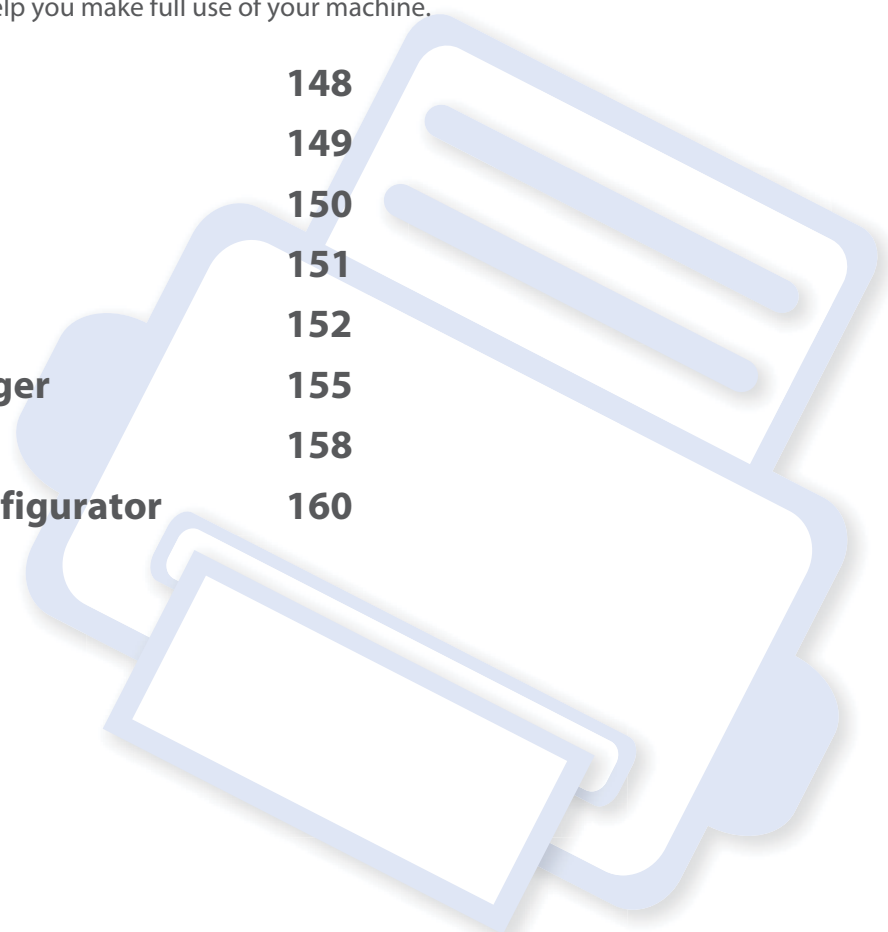
- 1 Open the **Unified Driver Configurator**.
If necessary, switch to **Printers configuration**.
- 2 Select your machine on the available printers list and click **Properties**.
- 3 The **Printer Properties** window appears.
The following five tabs display at the top of the window:
 - **General:** Allows 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.



4. Useful management tools

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

- **Easy Capture Manager** 148
- **Samsung Easy Color Manager** 149
- **Samsung AnyWeb Print** 150
- **Easy Eco Driver** 151
- **Using SyncThru™ Web Service** 152
- **Using Samsung Easy Printer Manager** 155
- **Using Samsung Printer Status** 158
- **Using the Linux Unified Driver Configurator** 160



Easy Capture Manager



- This feature may not be available depending on model or optional goods (see "Software" on page 7).
- Available for Windows OS users only (see "Software" on page 7).

Capture your screen and launch Easy Capture Manager by simply pressing the Print Screen key. Now you can easily print your captured screen as captured or edited.

Samsung Easy Color Manager

Samsung Easy Color Manager helps users do fine adjustments with 6 color tones and other properties, such as brightness, contrast, and saturation. Color tone changes can be saved as a profile and can be used from the driver or from inside of the machine.



- This feature may not be available depending on model or optional goods (see "Software" on page 7).
- Available for Windows and Macintosh OS users only (see "Software" on page 7).

Helps Samsung color laser printer users to adjust color as they like.

Download the software from the Samsung website then unpack and install it: (<http://www.samsung.com> > find your product > Support or Downloads).

Samsung AnyWeb Print



Available for Windows and Macintosh OS users only.

This tool helps you screen-capture, preview, scrap, and print pages more easily, than when you use an ordinary program.

Download the software from the Samsung website then unpack and install it: (<http://www.samsung.com> > find your product > Support or Downloads).

Easy Eco Driver

With the Easy Eco Driver, you can apply Eco features to save paper and toner before printing. To use this application, **Start Easy Eco Driver before printing job** checkbox in the printer properties should be checked.

Easy Eco Driver also allows you simple editing such as removing images and texts, changing fonts, and more. You can save frequently used settings as a preset.



Available for Windows OS users only.

How to use:

- 1 Open a document to print.
- 2 Print the document.
A preview window appears.
- 3 Select the options you want to apply to the document.
You can see the preview of the applied features.
- 4 Click **Print**.

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 If it's your first time logging into **SyncThru™ Web Service** you need to log-in as an administrator. Type in the below default ID and password. We recommend you to change the default password for security reasons.
 - **ID: admin**
 - **Password: sec00000**

SyncThru™ Web Service overview



Information

Settings

Security

Maintenance



Some tabs may not appear depending on your model.

Using SyncThru™ Web Service

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 IPv4/IPv6 filtering.

Maintenance tab

This tab allows you to maintain your machine by upgrading firmware and setting contact information for sending emails. You can also connect to 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.

Setting the system administrator's information

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

Using SyncThru™ Web Service

- 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

Samsung Easy Printer Manager is an 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  button.



- Available for Windows or Macintosh OS users only.
- For Windows, Internet Explorer 6.0 or higher is the minimum requirement for Samsung Easy Printer Manager.

Understanding Samsung Easy Printer Manager

To open the program:

For Windows,

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

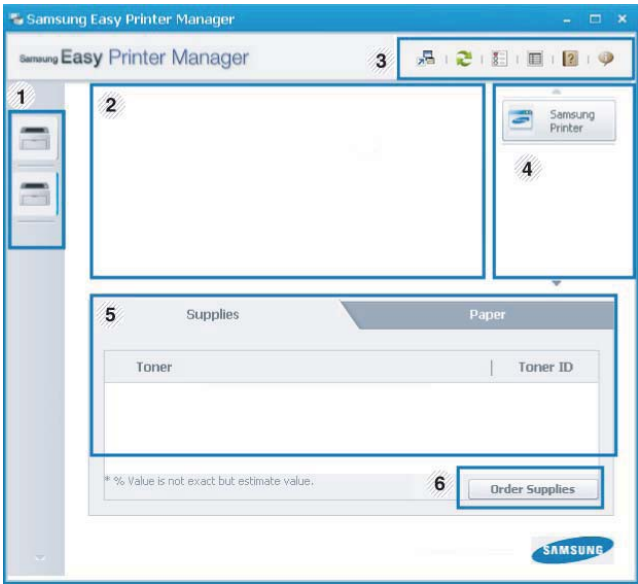
For Macintosh,

Open the **Applications** folder > **Samsung** folder > **Samsung Easy Printer Manager**.

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



The screenshot may differ depending on operating system you are using.



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

Using Samsung Easy Printer Manager

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 (switching UI), refresh, preference setting, summary, 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.  If you connect your machine to a network, the SyncThru™ Web Service icon is enabled.

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.

Using Samsung Easy Printer Manager

Alert Settings (Windows only)

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

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



- Available for Windows users.
- 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 "System requirements" on page 70).

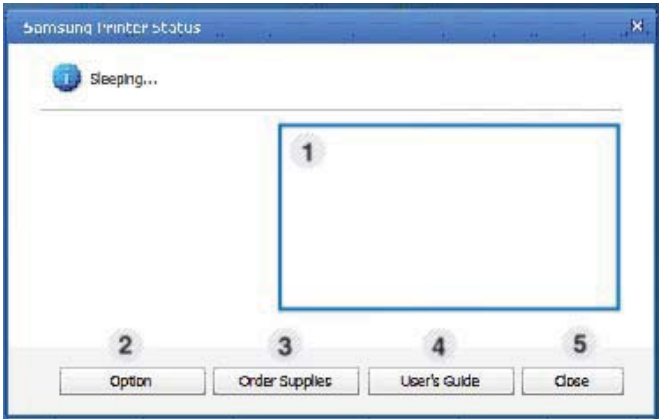
Samsung Printer Status overview

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.



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	Option	You can set Printing Job Alert related settings.

Using Samsung Printer Status

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.

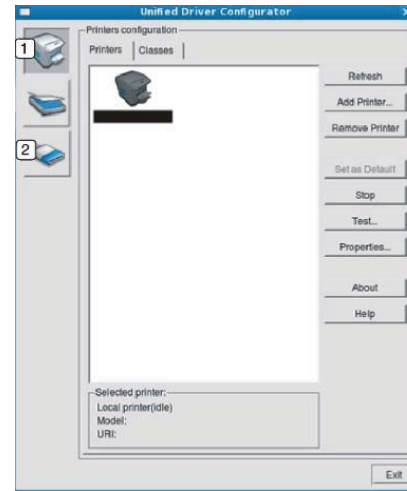
Using the Linux Unified Driver Configurator

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 90).

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**.

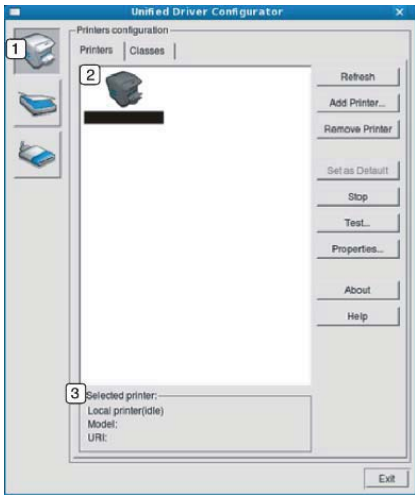
Printers configuration

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

Using the Linux Unified Driver Configurator

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.

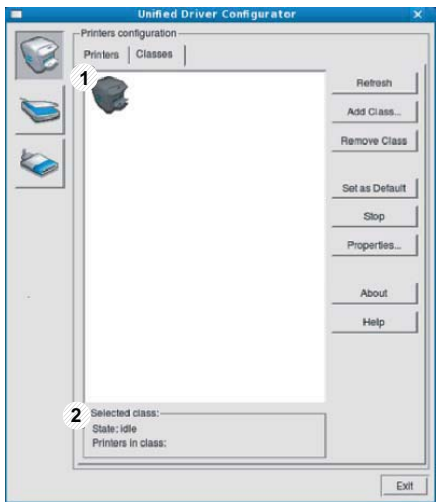
The printer control buttons are, as follows:

- **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.



Using the Linux Unified Driver Configurator

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

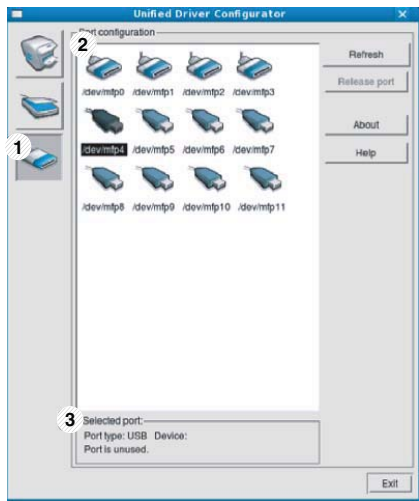
- **Refresh:** Renews the classes list.
- **Add Class:** Allows you to add a new machine class.
- **Remove Class:** Removes the selected machine class.

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.

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.

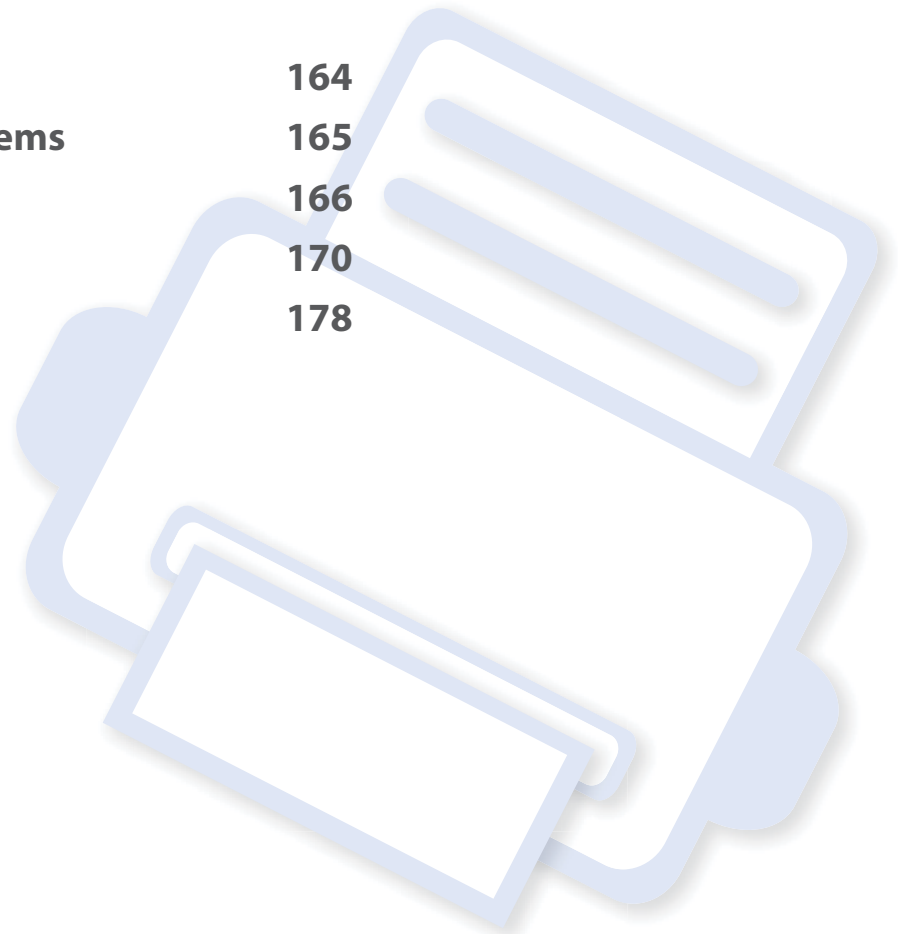




5. Troubleshooting

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

- **Paper feeding problems** 164
- **Power and cable connecting problems** 165
- **Printing problems** 166
- **Printing quality problems** 170
- **Operating system problems** 178



Paper feeding problems

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

Power and cable connecting problems



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 press the  (Power/Wakeup) button on the control panel. • Disconnect the machine's cable and reconnect it.

Printing problems

Condition	Possible cause	Suggested solutions
The machine does not print.	The machine is not receiving power.	Check the power cord connections. Check the power switch and the power source.
	The machine is not selected as the default machine.	Select your machine as your default machine in Windows.
	Check the machine for the following: • The top cover is not closed. Close the top cover. • Paper is jammed. Clear the paper jam (see "Clearing paper jams" on page 58). • No paper is loaded. Load paper (see "Loading paper in the tray" on page 27). • The toner cartridge is not installed. Install the toner cartridge (see "Replacing the toner cartridge" on page 47). • Make sure the protect cover and sheets are removed from the toner cartridge (see "Replacing the toner cartridge" on page 47). If a system error occurs, contact your service representative.	
	The connection cable between the computer and the machine is not connected properly.	Disconnect the machine cable and reconnect it (see "Rear view" on page 18).
	The connection cable between the computer and the machine is defective.	If possible, attach the cable to another computer that is working properly and print a job. You can also try using a different machine cable.
	The port setting is incorrect.	Check the Windows printer settings to make sure that the print job is sent to the correct port. If the computer has more than one port, make sure that the machine is attached to the correct one.
	The machine may be configured incorrectly.	Check the Printing Preferences to ensure that all of the print settings are correct.

Printing problems

Condition	Possible cause	Suggested solutions
The machine does not print.	The printer driver may be incorrectly installed.	Uninstall and reinstall the machine's driver.
	The machine is malfunctioning.	Check the display message on the control panel to see if the machine is indicating a system error. Contact a service representative.
	The document size is so big that the hard disk space of the computer is insufficient to access the print job.	Get more hard disk space and print the document again.
	The output tray is full.	Once the paper is removed from the output tray, the machine resumes printing.
The machine selects print materials from the wrong paper source.	The paper option that was selected in the Printing Preferences may be incorrect.	For many software applications, the paper source selection is found under the Paper tab within the Printing Preferences (see "Opening printing preferences" on page 34). Select the correct paper source. See the printer driver help screen (see "Using help" on page 36).
A print job is extremely slow.	The job may be very complex.	Reduce the complexity of the page or try adjusting the print quality settings.
Half the page is blank.	The page orientation setting may be incorrect.	Change the page orientation in your application (see "Opening printing preferences" on page 34). See the printer driver help screen (see "Using help" on page 36).
	The paper size and the paper size settings do not match.	Ensure that the paper size in the printer driver settings matches the paper in the tray. Or, ensure that the paper size in the printer driver settings matches the paper selection in the software application settings you use (see "Opening printing preferences" on page 34).

Printing problems

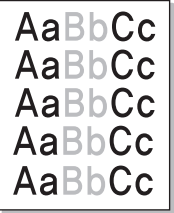
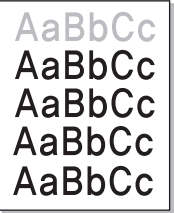
Condition	Possible cause	Suggested solutions
The machine prints, but the text is wrong, garbled, or incomplete.	The machine cable is loose or defective.	Disconnect the machine cable and reconnect. Try a print job that you have already printed successfully. If possible, attach the cable and the machine 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.
Pages print, but they are blank.	The toner cartridge is defective or out of toner.	Redistribute the toner, if necessary. If necessary, replace the toner cartridge. • See "Redistributing toner" on page 45. • See "Replacing the toner cartridge" on page 47.
	The file may have blank pages.	Check the file to ensure that it does not contain blank pages.
	Some parts, such as the controller or the board, may be defective.	Contact a service representative.
The machine does not print PDF files correctly. Some parts of graphics, text, or illustrations are missing.	Incompatibility between the PDF file and the Acrobat products.	Printing the PDF file as an image may enable the file to print. Turn on Print As Image from the Acrobat printing options.  It will take longer to print when you print a PDF file as an image.
The print quality of photos is not good. Images are not clear.	The resolution of the photo is very low.	Reduce the photo size. If you increase the photo size in the software application, the resolution will be reduced.

Printing problems

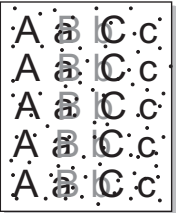
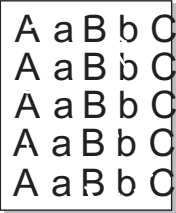
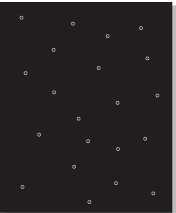
Condition	Possible cause	Suggested solutions
Before printing, the machine emits vapor near the output tray.	Using damp paper can cause vapor during printing.	This is not a problem. Just keep printing.
The machine does not print special-sized paper, such as billing paper.	Paper size and paper size setting do not match.	Set the correct paper size in the Custom in Paper tab in Printing Preferences (see "Opening printing preferences" on page 34).
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 (see "Opening printing preferences" on page 34).

Printing quality problems

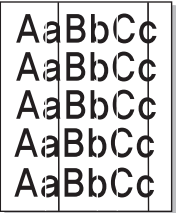
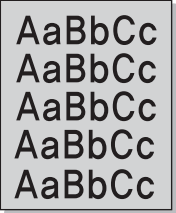
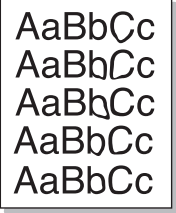
If the inside of the machine is dirty or paper has been loaded improperly, there might be a reduction in print quality. See the table below to clear the problem.

Condition	Suggested Solutions
Light or faded print 	• If a vertical white streak or faded area appears on the page, the toner supply is low. Install a new toner cartridge (see "Replacing the toner cartridge" on page 47). • If a vertical white streak or faded area still appears on the page even though the machine has enough toner supply, open and close the front door 3 ~ 4 times (see "Machine overview" on page 16). • The paper may not meet paper specifications; for example, the paper may be too moist or rough. • If the entire page is light, the print resolution setting is too low or the toner save mode is on. Adjust the print resolution and turn the toner save mode off. See the help screen of the printer driver. • A combination of faded or smeared defects may indicate that the toner cartridge needs cleaning. Clean the inside of your machine (see "Cleaning the machine" on page 53). • The surface of the LSU part inside the machine may be dirty. Clean the inside of your machine (see "Cleaning the machine" on page 53). 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 	The toner might not adhere properly to this type of paper. • Change the printer option and try again. Go to Printing Preferences, click the Paper tab, and set the paper type to Recycled (see "Opening printing preferences" on page 34).

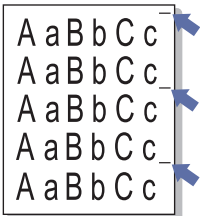
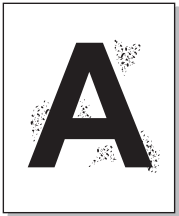
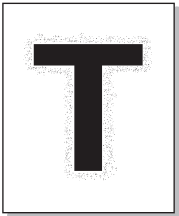
Printing quality problems

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 (see "Cleaning the machine" on page 53). • The paper path may need cleaning. Contact a service representative (see "Cleaning the machine" on page 53).
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 "Opening printing preferences" on page 34). If these steps do not correct the problem, contact a service representative.
White Spots 	If white spots appear on the page: • The paper is too rough and a lot of dirt from paper falls to the inner components within the machine, so the transfer roller may be dirty. Clean the inside of your machine (see "Cleaning the machine" on page 53). • The paper path may need cleaning. Clean the inside of your machine (see "Cleaning the machine" on page 53). If these steps do not correct the problem, contact a service representative.

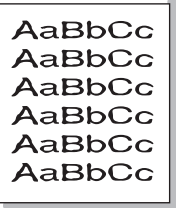
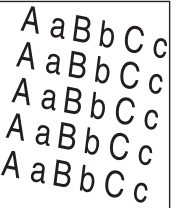
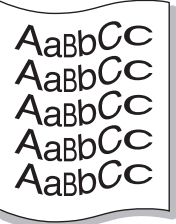
Printing quality problems

Condition	Suggested Solutions
Vertical lines 	If black vertical streaks appear on the page: - The surface (drum part) of the imaging unit inside the machine has probably been scratched. Remove the toner cartridge and install a new one (see "Replacing the imaging unit" on page 51). If white vertical streaks appear on the page: - The surface of the LSU part inside the machine may be dirty. Clean the inside of your machine (see "Cleaning the machine" on page 53). 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 imaging unit and install a new one (see "Replacing the imaging unit" on page 51). - Thoroughly redistribute the toner (see "Redistributing toner" on page 45).
Toner smear 	- Clean the inside of the machine (see "Replacing the toner cartridge" on page 47). - Check the paper type and quality. - Remove the old imaging unit and install a new one (see "Replacing the imaging unit" on page 51).

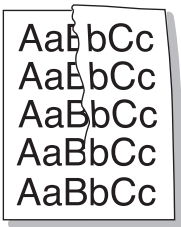
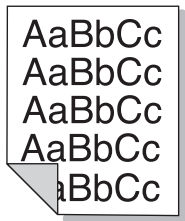
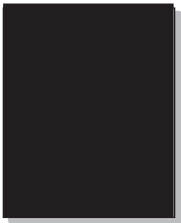
Printing quality problems

Condition	Suggested Solutions
Vertical repetitive defects 	If marks repeatedly appear on the printed side of the page at even intervals: • The imaging unit may be damaged. If you still have the same problem, remove the imaging unit and, install a new one (see "Replacing the imaging unit" on page 51). • 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 covers the entire surface area of a printed page, adjust the print resolution through your software application or in Printing Preferences (see "Opening printing preferences" on page 34). 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. • If you are using a new toner cartridge, redistribute the toner first (see "Redistributing toner" on page 45).
Toner particles are around bold characters or pictures 	The toner might not adhere properly to this type of paper. • Change the printer option and try again. Go to Printing Preferences, click the Paper tab, and set the paper type to Recycled (see "Opening printing preferences" on page 34). • 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.

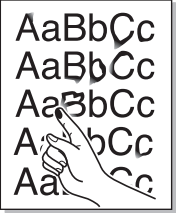
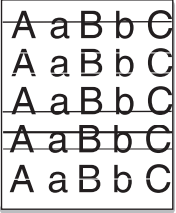
Printing quality problems

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.

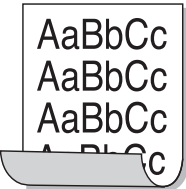
Printing quality problems

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 (see "Cleaning the machine" on page 53).
Solid color or black pages 	• The imaging unit may not be installed properly. Remove the imaging unit and reinsert it. • The imaging unit may be defective. Remove the imaging unit and install a new one (see "Replacing the imaging unit" on page 51). • The machine may require repairing. Contact a service representative.

Printing quality problems

Condition	Suggested Solutions
Loose toner 	• Clean the inside of the machine (see "Cleaning the machine" on page 53). • Check the paper type and quality. • Remove the imaging unit and then, install a new one (see "Replacing the imaging unit" on page 51). If the problem persists, the machine may require repair. Contact a service representative.
Character voids 	Character voids are white areas within parts of characters that should be solid black: • You may be printing on the wrong surface of the paper. Remove the paper and turn it around. • The paper may not meet paper specifications.
Horizontal stripes 	If horizontally aligned black streaks or smears appear: • The imaging unit may be installed improperly. Remove the imaging unit and reinsert it. • The imaging unit may be defective. Remove the imaging unit and install a new one (see "Replacing the imaging unit" on page 51). If the problem persists, the machine may require repairing. Contact a service representative.

Printing quality problems

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 (see "Opening printing preferences" on page 34).
• 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 133).

Operating system problems

Common Windows problems

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



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

Operating system problems

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.
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.

Operating system problems

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 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 on the printers list. Look at the description in the Selected printer pane. If its status contains Stopped string, press the Start button. After that normal operation of the machine should be restored. The “stopped” status might be activated when some problems in printing occur. For instance, this could be an attempt to print a document when the port is claimed by a scanning application. • Ensure the port is not busy. Since functional components of machine (printer and scanner) share the same I/O interface (port), the situation of simultaneous access of different user applications to the same port is possible. To avoid possible conflicts, only one of them at a time is allowed to gain control over the device. The other user will encounter “device busy” response. You should open ports configuration and select the port assigned to your machine. In the Selected port pane you can see if the port is occupied by some other application. If this is the case, you should either wait for completion of the current job or press the Release port button, if you are sure that the present application is not functioning properly. • Check if your application has special print option such as “-oraw”. If “-oraw” is specified in the command line parameter, then remove it to print properly. For Gimp front-end, select “print” -> “Setup printer” and edit command line parameter in the command item. • The CUPS (Common UNIX Printing System) version distributed with SuSE Linux 9.2 (cups-1.1.21) has a problem with ipp (Internet Printing Protocol) printing. Use the socket printing instead of ipp or install a later version of CUPS (cups-1.1.22 or higher).
Some color images come out all black.	This is a known bug in Ghostscript (until GNU Ghostscript version 7.05) when the base color space of the document is indexed color space and it is converted through CIE color space. Because Postscript uses CIE color space for Color Matching System, you should upgrade Ghostscript on your system to at least GNU Ghostscript version 7.06 or later. You can find recent Ghostscript versions at www.ghostscript.com.

Operating system problems

Condition	Suggested solutions
Some color images come out in unexpected color.	This is a known bug in Ghostscript (until GNU Ghostscript version 7.xx) when the base color space of the document is indexed RGB color space and it is converted through CIE color space. Because Postscript uses CIE color space for Color Matching System, you should upgrade Ghostscript on your system to at least GNU Ghostscript version 8.xx or later. You can find recent Ghostscript versions at www.ghostscript.com .
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 (via LPR GUI, for example) while a print job is in progress. Known versions of CUPS server break the print job whenever print options are changed and then try to restart the job from the beginning. Since Unified Linux Driver locks the mfp 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 mfp port by selecting Release port in Port configuration window.



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

Glossary



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

802.11

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

802.11b/g/n

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

Access point

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

ADF

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

AppleTalk

AppleTalk is a proprietary suite of protocols developed by Apple, Inc for computer networking. It was included in the original 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.

Glossary

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.

Glossary

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.

Glossary

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.

Glossary

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.

Glossary

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.

Glossary

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.

Glossary

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.

Glossary

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.

Glossary

SMB

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

SMTP

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

SSID

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

Subnet Mask

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

TCP/IP

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

TCR

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

TIFF

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

Toner Cartridge

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

Glossary

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.

Glossary

WPA-PSK

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

WPS

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

XPS

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

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