

Installing driver over the network

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"
/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.

Command- line	Definition	Description
/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 you wish.
/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.
/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.

Installing driver over the network

Command- line	Definition	Description
/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.
/h, /H or /?	Shows Command-line Usage.	

Mac

- 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 Select the CD-ROM volume that appears on **Finder**.
- 4 Double-click the **Install Software** icon.
- 5 Read the license agreement and check installation agreement button.
- 6 Click **Next**.
- 7 Select **Network** on the printer connection type screen.
- 8 Click **Next**.
- 9 Follow the instructions in the installation window.

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 driver over the network

- 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 Copy **Unified Linux Driver** package to your system.
- 3 Open Terminal program and go to the folder that you copied the package to.
- 4 Extract the package.
- 5 Move to **uld** folder.
- 6 Execute "**./install.sh**" command (If you are not logged in as root, execute the command with "**sudo**" as "**sudo ./install.sh**").
- 7 Proceed with installation.
- 8 When installation finished, launch **Printing** utility (Go to **System > Administration > Printing** or execute "**system-config-printer**" command in Terminal program).
- 9 Click **Add** button.
- 10 Select **AppSocket/HP JetDirect** and enter your machine's IP address.
- 11 Click **Forward** button and add it to your system.

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**.

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.

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

From the control panel

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.



When you install the printer driver, do not configure both IPv4 and IPv6. We recommend to configure either IPv4 or IPv6 (see "Installing driver over the network" on page 99).

DHCPv6 address configuration

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**.

IPv6 configuration

- 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

Activating 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.
- 6 Click the **Apply** button.
- 7 Turn the machine off and turn it on again.



- You can also set the DHCPv6.
- To manually set the IPv6 address:
Check the **Manual Address** check box. Then, the **Address/Prefix** text box is activated. Enter the rest of the address (e.g., :3FFE:10:88:194::AAAA. "A" is the hexadecimal 0 through 9, A through F).

IPv6 address configuration

- 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 96).
 - **Link-local Address:** Self-configured local IPv6 address (Address starts with FE80).
 - **Stateless Address:** Automatically configured IPv6 address by a network router.

IPv6 configuration

- **Stateful Address:** IPv6 address configured by a DHCPv6 server.
- **Manual Address:** Manually configured IPv6 address by a user.

3 Enter the IPv6 addresses (e.g.,: `http://[FE80::215:99FF:FE66:7701]`).



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

Wireless network setup



- Wireless networking may not be available depending on the model (see "Features by model" on page 6).

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.

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.
- It is strongly recommended that you set the password on Access Points. If you do not set the password on Access Points, they might be exposed to illegal access from unknown machines including PCs, smart phones and printers. Refer to the Access Point user' guide for password settings.

Set up method	Connecting method	Description & Reference
With Access Point	From the computer	See "Setting up via USB cable" on page 110 for Window.
		See "Access point without a USB cable" on page 112 for Window.
		See "Setting up via USB cable" on page 114 for Mac.
		See "Access point without a USB cable" on page 115 for Mac.
	From the machine's control panel	See "Using a network cable" on page 116.
		See "Using the WPS Settings menu" on page 108.
		See "Using the Wi-Fi Networks" on page 109.
Wi-Fi Direct setup		See "Setting the Wi-Fi Direct for mobile printing" on page 118.

Wireless network setup

Using the WPS Settings menu

If your machine and access point (or wireless router) support Wi-Fi Protected Setup™ (WPS), then you can easily configure the wireless network settings through the **WPS** button menu without the need for 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.

- The **Push Button Configuration (PBC)** method allows you to connect your machine to a wireless network by pressing both the **WPS** button menu 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).

Wireless network setup

Connecting WPS

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

Connecting in PBC mode

- 1 Press the  (**Menu**) button on the control panel and select **Network > Wireless > WPS Settings > Connect via PBC**.
- 2 Press the **WPS (PBC)** button on the access point (or wireless router).
- 3 Follow the instruction on the display screen.
The messages are displayed on the display screen

Connecting in PIN mode

- 1 Press **Network > Wireless > WPS Settings > Connect via PIN**.
- 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).
- 3 Follow the instruction on the display screen.
The messages are displayed on the display screen

Using the Wi-Fi Networks

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.

- 1 Press the  (**Menu**) button on the control panel and select **Network > Wi-Fi ON/OFF** then **ON** from the display screen.
- 2 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.
- 3 Select the Wi-Fi network option you want.

Setup using Windows



Shortcut to the **Samsung Easy Wireless Setup** program without the CD: If you have installed the printer driver once, you can access the **Samsung Easy Wireless Setup** program without the CD.

Wireless network setup

Setting up via USB cable

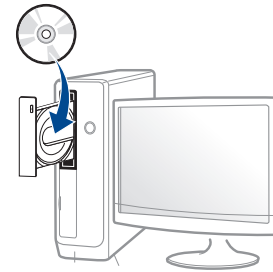
Items to prepare

- 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.



If the installation window does not appear, click **Start > All programs > Accessories > Run**.

X:\Setup.exe replacing "X" with the letter, which represents your CD-ROM drive and click **OK**.

- For Windows 8,
If the installation window does not appear, from **Charms**, select **Search > Apps** and search for **Run**. Type in X:\Setup.exe, replacing "X" with the letter that represents your CD-ROM drive and click **OK**.
If "**Tap to choose what happens with this disc.**" pop-up window appears, click the window and select **Run Setup.exe**.

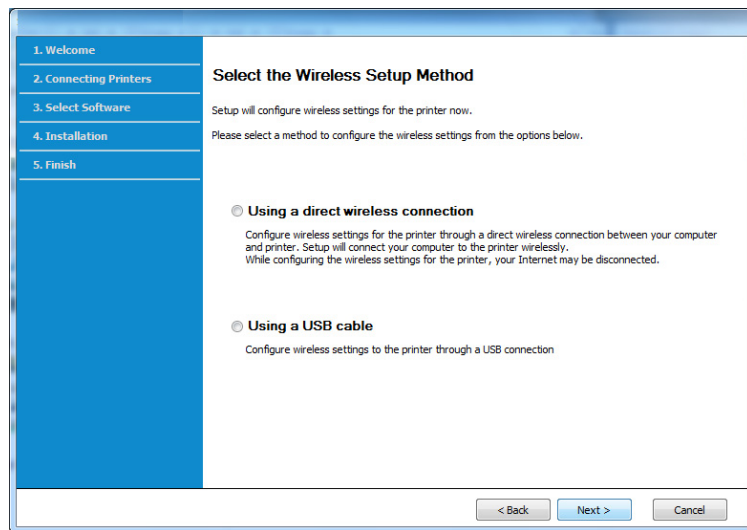
- 4 Review and accept the installation agreements in the installation window. Then, click **Next**.
- 5 Select **Wireless** on the **Printer Connection Type** screen. Then, click **Next**.

Wireless network setup

- 6 On the **Are you setting up your printer for the first time?** screen, select **Yes, I will set up my printer's wireless network.** Then, click **Next.**

If your printer is already connected on the network, select **No, my printer is already connected to my network.**

- 7 Select **Using a USB cable** on the **Select the Wireless Setup Method** 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 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).

Wireless network setup

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



- Wi-Fi Direct option appears on the screen only if your printer supports this feature.
- Can start to build Wi-Fi Direct by using Samsung Easy Printer Manager (see "Setting up Wi-Fi Direct" on page 118).
- **Wi-Fi Direct Name:** The default Wi-Fi Direct Name is the model name and the maximum length is 22 characters.
- **Password setting** is the numeric string, and the size is 8 ~ 64 characters.

- 10 When the wireless network set up is completed, disconnect the USB cable between the computer and machine. Click **Next**.

- 11 Select the components to be installed.

- 12 Follow the instructions in the installation window.

Access point without a USB cable

Items to prepare

- WiFi-enabled PC running Windows 7 or higher and an access point (router)
- Software CD that was provided with your machine
- A machine installed with a wireless network interface

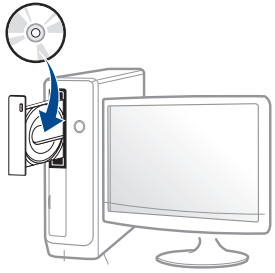


While setting the wireless network, the machine uses PC's wireless LAN. You might not be able to connect to the Internet.

Wireless network setup

Creating the infrastructure network

- 1 Turn on your computer, access point, and machine.
- 2 Insert the supplied software CD into your CD-ROM drive.



If the installation window does not appear, click **Start > All programs > Accessories > Run**.

X:\Setup.exe replacing "X" with the letter, which represents your CD-ROM drive and click **OK**.

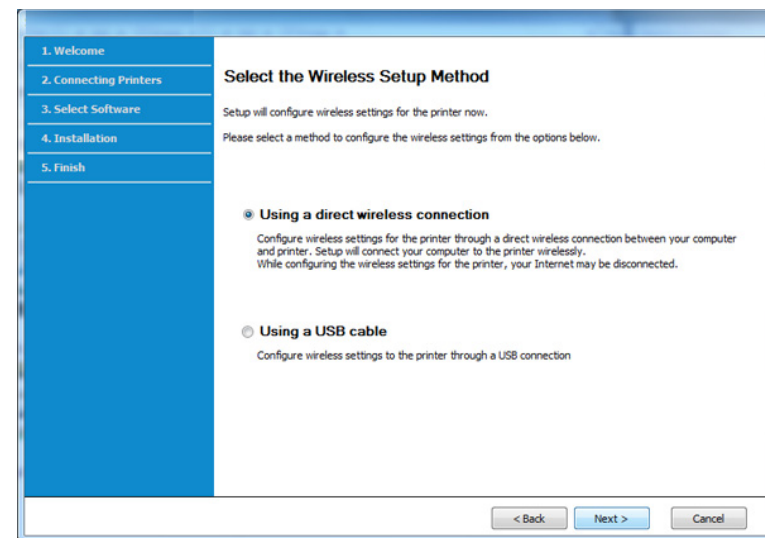
- For Windows 8,
If the installation window does not appear, from **Charms**, select **Search > Apps** and search for **Run**. Type in X:\Setup.exe, replacing "X" with the letter that represents your CD-ROM drive and click **OK**.
If "Tap to choose what happens with this disc." pop-up window appears, click the window and select **Run Setup.exe**.

- 3 Review and accept the installation agreements in the installation window. Then, click **Next**.
- 4 Select **Wireless** on the **Printer Connection Type** screen. Then, click **Next**.

- 5 On the **Are you setting up your printer for the first time?** screen, select **Yes, I will set up my printer's wireless network**. Then, click **Next**.

If your printer is already connected on the network, select **No, my printer is already connected to my network**.

- 6 Select **Using a direct wireless connection** on the **Select the Wireless Setup Method** screen. Then, click **Next**.



- Even if your computer is running Windows 7 or higher, you cannot use this feature if your PC does not support wireless network. Set the wireless network using a USB cable (see "Setting up via USB cable" on page 110).
- If below screen appears, press the  (WPS) button from the control panel within 2 minutes.

Wireless network setup

- 7 When the wireless network set up is completed, click **Next**.
- 8 Follow the instructions in the installation window.

Setup using Mac

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

Setting up via USB cable

- 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 Select the CD-ROM volume that appears on **Finder**.
- 4 Double-click **Install Software** icon.

- 5 Read the license agreement and check installation agreement button.
- 6 Click **Next**
- 7 Select **Wireless** on the **Printer Connection Type**
- 8 Click **Next**
- 9 If the installer asks you to allow access to the keychain, click **Deny**.



If you clicked **Always Allow** in this step, the **Select a wireless printer** window appears without asking for access to the keychain. If this occurs, click **Cancel** in the **Select a wireless printer** window.

- 10 On the **Select the Wireless Setup Method** screen, select **Using a USB cable**, and then click **Next**.
If the screen does not appear, go to step 14.
- 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**.



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**.

Wireless network setup

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

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

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

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



- Can start to build Wi-Fi Direct by using Samsung Easy Printer Manager (see "Setting up Wi-Fi Direct" on page 118).
- **Wi-Fi Direct Name:** The default Wi-Fi Direct Name is the model name and the maximum length is 22 characters.
- **Password setting** is the numeric string, and the size is 8 ~ 64 characters.

- 13** The **Wireless Network Setting Complete** window appears. Click **Next**.
- 14** When the wireless network settings are completed, disconnect the USB cable between the computer and machine. Click **Next**.
- 15** Follow the instructions in the installation window.

Access point without a USB cable

Items to prepare

- WiFi-enabled Mac running Mac OS 10.7 or higher and an access point (router)
- Software CD that was provided with your machine
- A machine installed with a wireless network interface

- 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** Select the CD-ROM volume that appears on **Finder**.
- 4** Double-click **Install Software** icon.
- 5** Read the license agreement and check installation agreement button.
- 6** Click **Next**.

Wireless network setup

- 7 Select **Wireless** on the **Printer Connection Type** screen.
- 8 Click **Next**.
- 9 If the installer asks you to allow access to the keychain, click **Allow**.
- 10 If the **Select a wireless printer** window appears, select the printer named DIRECT-xxx.



If the **Press WPS button on your printer** screen appears, press the  (WPS) button from the control panel within 2 minutes.

- 11 When the wireless network set up is complete, follow the instructions in the installation window.

Using a network cable



See your network administrator, or the person that set up your wireless network, for information about your network configuration.

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

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 96.

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 "Printing a network configuration report" on page 96.

Wireless network setup

Configuring the machine's wireless network

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

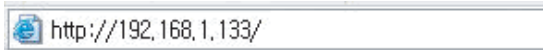
To configure wireless parameters, you can use **SyncThru™ Web Service**.

Using SyncThru™ Web Service

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

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

For example,



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

- 4 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: sec0000**

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

- 6 Click **Wi-Fi > Wizard**.

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

- 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

Turning the Wi-Fi network on/off

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

For example,



- 3 Click **Login** on the upper right of the SyncThru™ Web Service website.
- 4 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 **Wi-Fi**.
- 7 You can turn the Wi-Fi network on/off.

Setting the Wi-Fi Direct for mobile printing

Wi-Fi Direct is a secure and easy-to-use peer-to-peer connection between a Wi-Fi Direct-enabled printer and mobile device.

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.



- 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 4.

Setting up Wi-Fi Direct

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

Wireless network setup

From the machine

- 1 Press the  (**Menu**) button on the control panel and select **Network** > **Wireless** > **Wi-Fi Direct** from the display screen.
- 2 Tap **Wi-Fi Direct**.
- 3 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.

- 1 Access **SyncThru™ Web Service** and select **Settings** > **Network Settings** > **Wi-Fi** > **Wi-Fi Direct™**.
- 2 Enable **Wi-Fi Direct™** and set other options.

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 Wi-Fi Direct, 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.

Wireless network setup

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 96).
- 2 Check the printer port's IP address from your computer.
 - a Click the Windows **Start** menu.
 - For Windows 8, from the **Charms**, select **Search > Settings**.
 - b For Windows XP Service Pack 3/Server 2003, select **Printer and Faxes**.
 - For Windows Server 2008/Vista, select **Control Panel > Hardware and Sound > Printers**.
 - For Windows Server 2008 R2, select **Control Panel > Hardware > Devices and Printers**.
 - For Windows 7/ Windows 8, select **Control Panel > Devices and Printers**.
 - c Right-click your machine.
 - d For Windows XP Service Pack 3/2003/2008/Vista, press **Properties**.
For Windows 7/ Windows 8 or 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.
 - 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.

Wireless network setup

- 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.
- 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 96).

Wireless network setup

- 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.
- You cannot use infrastructure 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**, this machine only supports IEEE 802.11 b/g.
- If the access point is set to work with the 802.11n standard only, it may not connect to your machine.

Samsung Mobile Print

What is Samsung Mobile Print?

Samsung Mobile Print is a free application that enables users to print photos, documents, and web pages directly from your smartphone or tablet. **Samsung Mobile Print** is not only compatible with your Android 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 Mobile Print** application, and it will automatically detect compatible Samsung printers. Besides printing photos, web pages, and PDFs, scanning is also supported. If you have a Samsung multifunction printer, scan any document into a JPG, PDF, or PNG format for quick and easy viewing on your mobile device.

Supported Mobile OS

- Android OS 2.3 or higher
- iOS 4.0 or higher

Downloading Samsung Mobile Print

To download **Samsung Mobile Print**, go to the application store (Samsung Apps, Play Store, App Store) on your mobile device, and just search for "**Samsung Mobile Print**." You can also visit iTunes for Apple devices on your computer.



Android



iOS

Using the NFC feature

The NFC(Near Field Communication) printer allows you to directly print from your cell phone just by holding your cell phone over the NFC tag on your printer. It does not require installing print driver or connecting to an access point. You just need NFC supported cell phone. In order to use this feature, Samsung Mobile Print app needs to be installed on your cell phone.



- Depending on the material of the cell phone cover, NFC recognition may not work properly.
- Depending on the cell phone you are using, the transmission speed may differ.

Requirements

- NFC and Wi-Fi Direct enabled, Mobile Print app installed cell phone with Android OS 4.0 or higher.



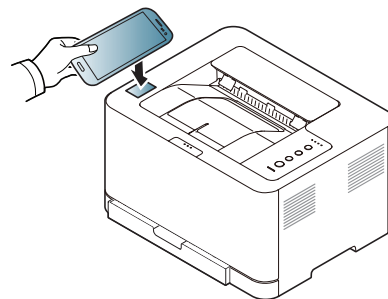
Only Android OS 4.1 or higher will automatically enable the Wi-Fi Direct feature on your cell phone when you enable the NFC feature. We recommend you to upgrade your cell phone to Android OS 4.1 or higher to use the NFC feature.

- Wi-Fi Direct feature enabled printer. Wi-Fi Direct feature is enabled by default.

Printing

- 1 Check that NFC and Wi-Fi Direct feature are enabled on your cell phone and Wi-Fi Direct feature is enabled on your printer (see "Setting up Wi-Fi Direct" on page 118).
- 2 Tag the NFC antenna on your cell phone (usually located on the back of the cell phone) over the NFC tag() on your printer.

Wait few seconds for the Samsung Mobile Print app to start.



- For some cell phones, NFC antenna might not be located at the back of the cell phone. Check the location of the NFC antenna on your cell phone before tagging.
- If error message about changed PIN number appears, enter a changed PIN number and press OK. Follow the instruction on the app screen to update the PIN number.
- If you do not have Samsung Mobile Print app installed on your cell phone, it automatically connects to Samsung Mobile Print app download page. Download the app and try again.

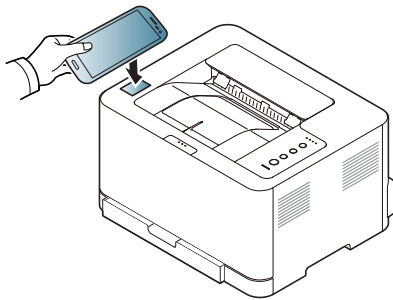
Using the NFC feature

- 3 Select the content you want to print.

If necessary, change the print option by pressing the .

- 4 Tag the NFC antenna on your cell phone(usually located on the back of the cell phone) over the NFC tag() on your printer.

Wait few seconds for the cell phone to connect to the printer.



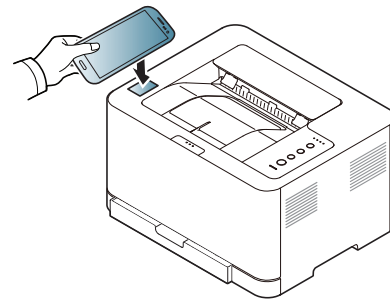
- For some cell phones, NFC antenna might not be located at the back of the cell phone. Check the location of the NFC antenna on your cell phone before tagging.
- If error message about changed PIN number appears, enter a changed PIN number and press OK. Follow the instruction on the app screen to update the PIN number.

- 5 The printer starts printing.

Registering Google Cloud Printer

- 1 Check that NFC and Wi-Fi Direct features are enabled on your mobile device and Wi-Fi Direct feature is enabled on your printer.
- 2 Tag the NFC tag on your mobile device (usually located on the back of the mobile device) over the NFC tag() on your printer.

Wait a few seconds for the **Samsung Mobile Print** app to start.

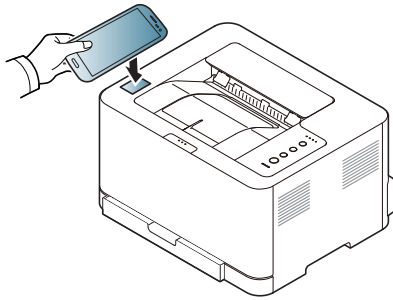


- For some mobile devices, NFC tag might not be located at the back of the mobile device. Check the location of the NFC antenna on your mobile device before tagging.
- If error message about changed PIN number appears, enter a changed PIN number and press **OK**. Follow the instruction on the app screen to update the PIN number.
- If your do not have **Samsung Mobile Print** app installed on your mobile devices, it automatically connects to **Samsung Mobile Print** app download page. Download the app and try again.

Using the NFC feature

- 3 Select device status icon.
- 4 Select **Google Cloud Print** > **Register Google Cloud Printer**.
- 5 Tag the NFC tag on your mobile device (usually located on the back of the mobile device) over the NFC tag (NFC) on your printer.

Wait a few seconds for the mobile device to connect to the printer.



- For some mobile devices, NFC tag might not be located at the back of the mobile device. Check the location of the NFC antenna on your mobile device before tagging.
- If error message about changed PIN number appears, enter a changed PIN number and press **OK**. Follow the instruction on the app screen to update the PIN number.

- 6 Confirm your printer in pop-up window.
Now your printer is registered with Google Cloud Print™ service



Only Mopria-certified machines can use the Mopria feature. Check the box that your machine came in for the Mopria-certified logo.



Mopria™ Print Service is a mobile printing solution that enhances the new print functionality on any Android phone or tablet (Android version 4.4 or later). With this service, you can connect and print to any Mopria-certified printer on the same network as your mobile device without additional set-up. Many native Android apps support printing, including Chrome, Gmail, Gallery, Drive and Quickoffice.

Setting up the machine for Mopria printing

Bonjour(mDNS) and IPP protocols are required on your machine to use the **Mopria** feature. Perform the following steps to enable the **Mopria** feature.

- 1 Ensure that the machine is connected to the network.
- 2 On your computer, open a web browser (Internet Explorer, Safari, or Firefox) and type the IP address of the machine in the address bar. Then, press Enter.

For example,



- 3 Click **Login** in the upper right corner 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 **Settings** > **Network Settings** > **Standard TCP/IP, LPR, IPP** > **IPP**. Then, select **Enable**.
- 6 Click **Settings** > **Network Settings** > **mDNS**. Then, select **Enable**.
- 7 Click **Security** > **System Security** > **Feature Management** > **Mopria**. Then, select **Enable**.

Setting up Mopria on your mobile device

If you do not have **Mopria Print Service** app installed on your mobile device, open to the app store (Play Store, App Store) on your mobile device, search for **Mopria Print Service**, and then download and install the app.

- 1 In the **Settings** menu of your Android device, tap **Printing**.



The location of this option may differ depending on your mobile device. If you cannot locate the **Printing** option, refer to the user's manual for your mobile device.

- 2 Under **Print Services**, tap **Mopria Print Service**.
- 3 Tap the **On/Off** slider to enable the **Mopria Print Service**.

Printing via Mopria

To print via Mopria on an Android device:

- 1 Open the email, photo, web page, or document that you want to print.
- 2 Tap **Print** on the menu in the app.
- 3 Select **your printer**, and then configure the print options.
- 4 Touch **Print** again to print the document.



To cancel a print job: Select and delete the document from the print queue in the **Notification Bar**.

AirPrint



Only AirPrint certified machines can use the AirPrint feature. Check the box your machine came in for the AirPrint certified mark.



AirPrint allows you to wirelessly print directly from iPhone, iPad and iPod touch running the latest version of iOS.

Setting up AirPrint

Bonjour(mDNS) and IPP protocols are required on your machine to use the **AirPrint** feature. You can enable the **AirPrint** feature by one of the following methods.

- 1 Check whether the machine is connected to the network.
- 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** in 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 **Embedded Web Service** window opens, click **Settings** > **Network Settings**.

- 6 Click **Raw TCP/IP, LPR, IPP** or **mDNS**.

You can enable the IPP protocol or mDNS protocol.

Printing via AirPrint

For example, the iPad manual provides these instructions:

- 1 Open your email, photo, web page, or document you want to print.
- 2 Touch the action icon().
- 3 Select **your printer driver name** and option menu to set up.
- 4 Touch **Print** button. Print it out.

AirPrint



Cancelling print job: To cancel the printing job or view the print summary, click the print center icon () in multitasking area. You can click cancel in the print center.

Samsung Cloud Print

Samsung Cloud Print is a free cloud service that allows you to print or scan from your smartphone or tablet to your Samsung printer or MFP. After installing the Samsung Cloud Print app, you can register with the Samsung Cloud Print service just using your mobile number for authentication. No other account login is required, although you can link the app to your Samsung Account if you wish.



If you press the () button from Samsung Cloud Print app, Your mobile device and printer or MFP can be paired , QR code, or by manually entering its MAC address. Once paired, you can print or scan from anywhere and everywhere.

Registering your Printer to Samsung Cloud server

Registering from Web Browser



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

- 1 Open Web browser.
- 2 Enter your printer's IP address in the address field and press the Enter key or click **Go**.

3

Click **Login** in the upper right corner 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**



If you want to create a new user or change the password, see "Security tab" on page 160.

5

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

6

Enable Samsung Cloud Print Protocol.

7

Now your printer is registered with Samsung Cloud Print service.

Samsung Cloud Print

Printing with Samsung Cloud Print



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

Registering a printer from an application on mobile device

The following steps are an example of using the **Samsung Cloud Print** app from Android mobile phone.

- 1 Open **Samsung Cloud Print** app.



If you do not have **Samsung Cloud Print** app installed on your cellphone, go to the application store (Samsung Apps, Play Store, App Store) on your mobile device, and just search for download the app and try again.

- 2 Press the () button from Samsung Cloud Print app.
- 3 Your mobile device and printer or MFP can be paired NFC tapping, QR code or by manually entering its MAC address.

Printing from an application on mobile device

The following steps are an example of using the **Samsung Cloud Print** app from Android mobile phone.

- 1 Open **Samsung Cloud Print** app.



If you do not have **Samsung Cloud Print** app installed on your cellphone, go to the application store (Samsung Apps, Play Store, App Store) on your mobile device, and just search for download the app and try again.

- 2 Tap the option check button of the document that you want to print.
- 3 Set the printing options if you want.
- 4 Tap **Send Job**.

Google Cloud Print™

Google Cloud Print™ is a service that allows you to print to a printer using your smart 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 Enter your printer's IP address in the address field and press the Enter key or click **Go**.

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.

Google Cloud Print™

10 Click **Finish printer registration**.

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.

Google Cloud Print™

5 Select **Print with Google Cloud Print**.

6 Click the **Print** button.



3. Special Features

This chapter explains special printing features.

- **Altitude adjustment** 138
- **Printing features** 139



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.

- **Normal:** 0-1,000 m(3,280 ft)
- **High1:** 1,000 m(3,280 ft)-2,000 m(6,561 ft)
- **High2:** 2,000 m(6,561 ft)-3,000m(9,842 ft)
- **High3:** 3,000 m(9,842 ft)-4,000 m(13,123 ft)
- **High4:** 4,000 m(13,123 ft)-5,000 m(16,404 ft)
- For Windows and Mac users, you set from **Samsung Easy Printer Manager** > **Advanced Setting** > **Device Settings**. See "Using Samsung Easy Printer Manager" on page 162.



If your machine is connected to the network, you can set the altitude via SyncThru™ Web Service (see "Using SyncThru™ Web Service" on page 159).

Printing features



- For basic printing features, refer to the Basic Guide (see "Basic printing" on page 35).
- This feature may not be available depending on model or optional goods (see "Features by model" on page 6).

Changing the default print settings

- 1 Click the Windows **Start** menu.
 - For Windows 8, from the **Charms**, select **Search** > **Settings**.
- 2 For Windows XP/Server 2003, select **Printer and Faxes**.
 - For Windows Server 2008/Vista, select **Control Panel** > **Hardware and Sound** > **Printers**.
 - For Windows Server 2008 R2, select **Control Panel** > **Hardware** > **Devices and Printers**.
 - For Windows 7/8, select **Control Panel** > **Devices and Printers**.
- 3 Right-click on your machine.
- 4 For Windows XP/Server 2003/Server 2008/Vista, select **Printing Preferences**.
For Windows 7/8 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.
 - For Windows 8, from the **Charms**, select **Search** > **Settings**.
- 2 For Windows XP/Server 2003, select **Printer and Faxes**.
 - For Windows Server 2008/Vista, select **Control Panel** > **Hardware and Sound** > **Printers**.
 - For Windows Server 2008 R2, select **Control Panel** > **Hardware** > **Devices and Printers**.
 - For Windows 7/8, select **Control Panel** > **Devices and Printers**.

Printing features

- 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



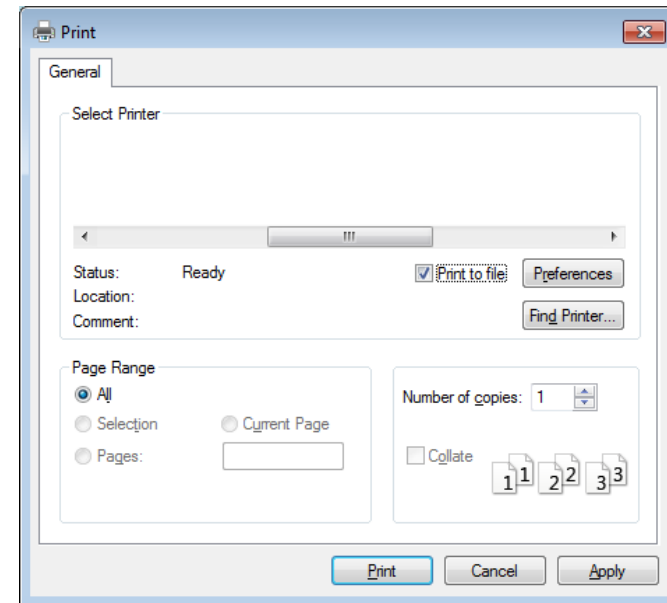
XPS printer driver: used to print XPS file format.

- See "Features by model" on page 6.
- The XPS printer driver can be installed only on Windows Vista OS or higher.
- For models that provide XPS driver from the Samsung website, <http://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.

Printing features

Understanding special printer features

You can use advanced printing features when using your machine.

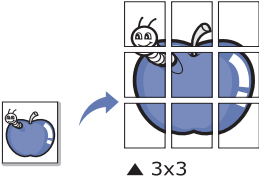
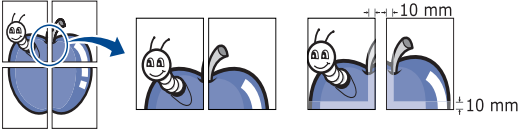
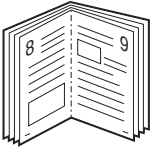
To take advantage of the printer features provided by your printer driver, click **Properties** or **Preferences** in the application's **Print** window to change the print settings. The machine name that appears in the printer properties window may differ depending on the machine in use.



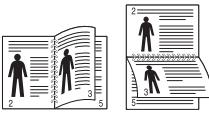
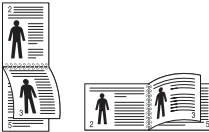
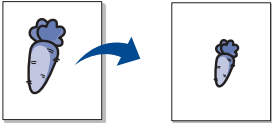
- Some menus may not appear on the display depending on options or models. If so, it is not applicable to your machine.
- Select the **Help** menu or click the  button from the window or press **F1** on your keyboard and click on any option you want to know about (see "Using help" on page 38).

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.

Printing 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 	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.  • This option is available only when you use the PCL/SPL printer driver. This option is not available when you use XPS driver. • 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 .

Printing features

Item	Description
Double-sided Printing (Manual)	Print on both sides of a sheet of paper (duplex). Before printing, decide how you want your document oriented.  - This option is available only when you use the PCL/SPL printer driver. This option is not available when you use XPS driver. - 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. 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. 
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. 

Printing features

Item	Description
Watermark 	The watermark option allows you to print text over an existing document. For example, you use it when you want to have large gray letters reading "DRAFT" or "CONFIDENTIAL" printed diagonally across the first page or all pages of a document.
Watermark (Creating a watermark)	a To change the print settings from your software application, access Printing Preferences (see "Opening Printing Preferences" on page 36). b From the Advanced tab, select Edit... from the Watermark drop-down list. c Enter a text message in the Watermark Message box. You can enter up to 256 characters. When the First Page Only box is checked, the watermark prints on the first page only. d Select watermark options. You can select the font name, style, size, and shade from the Font Attributes section, as well as set the angle of the watermark from the Watermark Alignment and Angle section. e Click Add to add a new watermark to the Current Watermarks list. f When you finish editing, click OK or Print until you exit the Print window.
Watermark (Editing a watermark)	a To change the print settings from your software application, access Printing Preferences (see "Opening Printing Preferences" on page 36). b Click the Advanced tab, select Edit... from the Watermark drop-down list. 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. 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.

Printing features

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

Printing features

Item	Description
Overlay ^a (Using a page overlay)	a Create or open the document you want to print. b To change the print settings from your software application, access Printing Preferences. c Click the Advanced tab. d Select the Print Overlay from the Overlay drop-down list. e If the overlay file you want does not appear in the Overlay File 1 or Overlay File 2 drop-down list, select Load from the Overlay List. Select the overlay file you want to use. If you have stored the overlay file you want to use in an external source, you can also load the file when you access the Load 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. f If necessary, check Confirm Page Overlay When Printing box. If this box is checked, a message window appears each time you submit a document for printing, asking you to confirm your wish to print an overlay on your document. If this box is not checked and an overlay has been selected, the overlay automatically prints with your document. g Click OK or Print until you exit the Print window. The selected overlay prints on your document.
Overlay ^a (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.

Printing features

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

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

Changing printer settings

You can use advanced printing features when using your machine.

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

Printing multiple pages on one sheet

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

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

Printing features

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 (see "Variety feature" on page 8).

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.

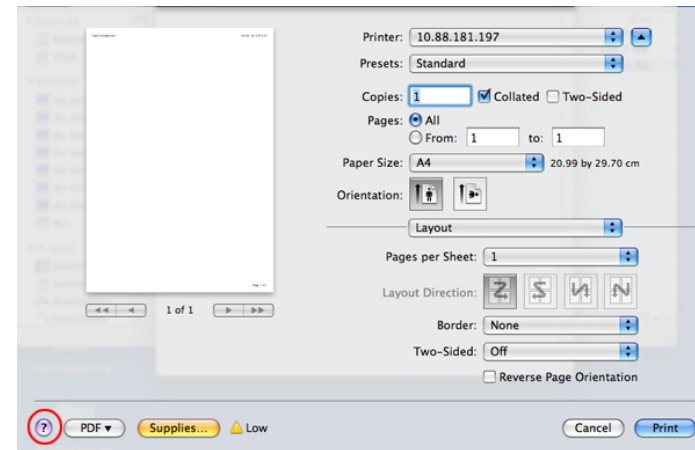
- 1 From your Mac application, select **Print** from the **File** menu.
- 2 Select **Layout** from the drop-down list under **Orientation**.
- 3 Select a binding orientation from the **Two-Sided** option.
- 4 Select the other options to use.
- 5 Click **Print** and the machine prints on both sides of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



Printing features

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

7 Change other printing options in each tab, if necessary.

8 Click **Print**.



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 (see "Features by model" on page 6).

Printing files

You can print text, image, pdf files on your machine using the standard CUPS directly from the command line interface. The CUPS lp or lpr utility allows you to do that. You can print these files by using below command format.

"lp -d <printer name> -o <option> <file name>"

Please refer to lp or lpr man page on your system for more details.

Printing features

Configuring Printer Properties

You can change the default printing options or connection type with Printing utility supplied by o/s.

- 1 Launch Printing utility(Go to **System > Administration > Printing** menu or execute "**system-config-printer**" command in Terminal program).
- 2 Select your printer and double-click it.
- 3 Change default printing options or connection type.
- 4 Click **Apply** button.



4. Useful Management Tools

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

- **Accessing management tools** 152
- **Easy Capture Manager** 153
- **Samsung Easy Color Manager** 154
- **Easy Eco Driver** 155
- **Using Samsung Printer Center** 156
- **Using SyncThru™ Web Service** 159
- **Using Samsung Easy Printer Manager** 162
- **Using Samsung Printer Status** 164
- **Using Samsung Printer Experience** 166



Accessing management tools

Samsung provides a variety of management tools for Samsung printers.

- 1 Make sure that the machine is connected to your computer and powered on.
- 2 From the **Start** menu, select **Programs** or **All Programs**.
 - For Windows 8, from the **Charms**, select **Search** > **Apps**.
- 3 Find **Samsung Printers**.
- 4 Under **Samsung Printers**, you can see installed management tools.
- 5 Click the management tool you want to use.



- After installing the driver, for some management tools, you can access them directly from the **Start** menu > **Programs** or **All Programs**.
- For Windows 8, after installing the driver, for some management tools, you can access them directly from the **Start** screen by clicking on the corresponding tile.

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 on the keyboard. 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 Mac 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).

Easy Eco Driver



- Available for Windows OS users only (see "Software" on page 7).
- To use the Easy Eco Driver features, the Eco Driver Pack must be installed.

With the Easy Eco Driver, you can apply Eco features to save paper and toner before printing.

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

How to use:

- 1 Open a document to print.
- 2 Open printing preference window (see "Opening Printing Preferences" on page 36).
- 3 From the **Favorites** tab, select **Eco Printing Preview**.
- 4 Click **OK > Print** in the window. A preview window appears.
- 5 Select the options you want to apply to the document.

You can see the preview of the applied features.

- 6 Click **Print**.



- If you want to run Easy Eco Driver every time you print, check **Start Easy Eco Driver before printing job** checkbox in the **Basic** tab of the printing preference window.
- To use this feature on Stylish User Interface, click **Samsung Printer Center > Device Options** and then select **Stylish User Interface** (see "Using Samsung Printer Center" on page 156).

Using Samsung Printer Center



- Available for Windows users only.

The **Samsung Printer Center** allows you to manage all the printer drivers installed on your computer from a single integrated application. You can use the **Samsung Printer Center** to add and remove printer drivers, check the status of printers, update printer software, and configure printer driver settings.

Understanding Samsung Printer Center

To open the program:

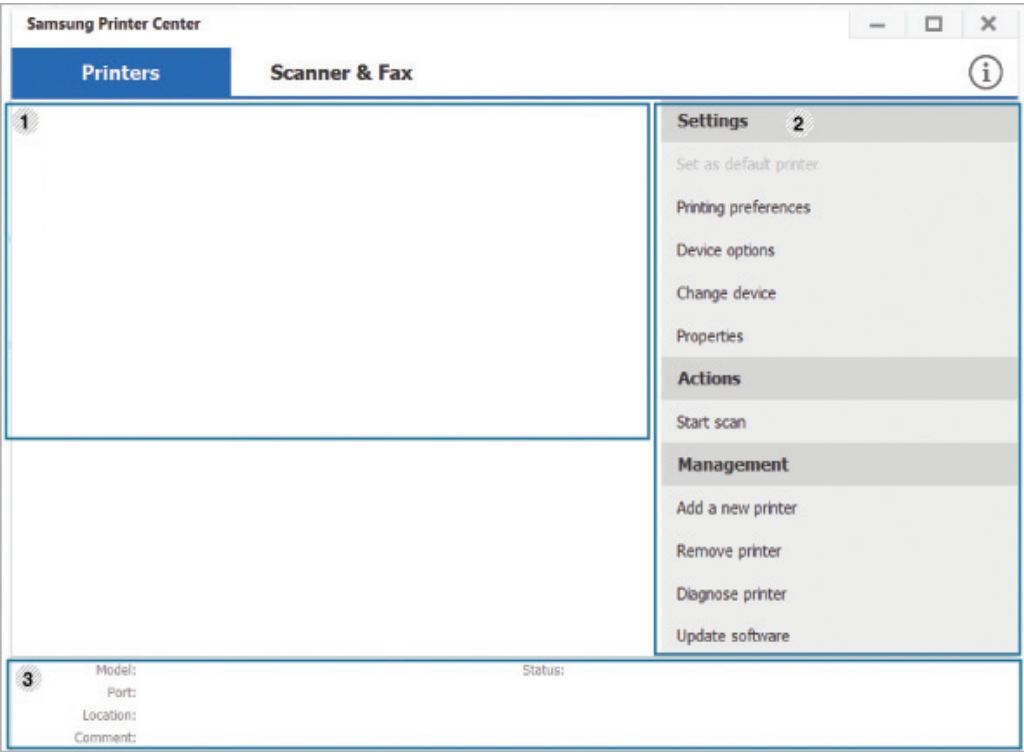
For Windows,

Select **Start > Programs** or **All Programs > Samsung Printers > Samsung Printer Center**.

Printers tab



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



1	Printer list	Displays the printer drivers installed on your computer. To add a printer driver to the list, click the  button.
---	---------------------	---

Using Samsung Printer Center

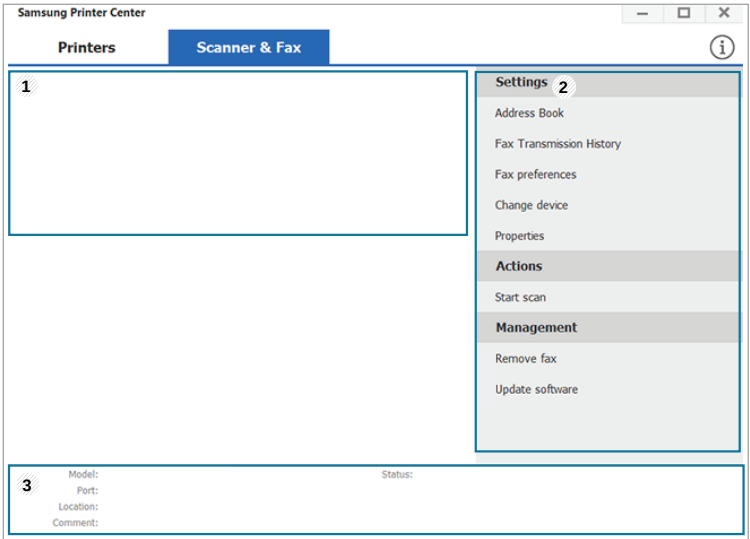
2	Quick links	Displays links to various printer driver management functions. The quick links in the Printers tab link to the following functions: • Settings: Allows you to configure the settings for individual printer driver. - Set as default printer: Sets the selected printer driver as the default printer. If the selected printer driver is already set as the default printer, then this option is not activated. - Printing preferences: Allows you to configure the default print settings. - Device options: Allows you to configure advanced options, such as the settings for optional devices and additional features.
	 The option allows you to modify the Printer Status and Stylish User Interface settings.	- Change device: Allows you to change the device into another device. - Properties: Allows you to configure the printer driver properties, such as the name of the printer driver and its location, or add comments about the printer driver . • Actions: Allows you to use the scan feature (this option is enabled only if the selected device supports the scan feature). • Management: Allows you to manage the devices registered in the program. - Add a new printer / Remove printer: Adds a new device or removes an existing device. - Diagnose printer: Diagnoses problems in the selected device and suggests solutions. - Update software: Downloads and applies the applicable software updates.

3	Printer information	Provides general information about the selected device, such as its model, IP address, port number, and status.
---	----------------------------	---

Scanner & Fax Tab



- The screenshot may differ depending on operating system you are using.
- Available for multifunction products only.



1	Printer list	Displays the fax and scanner driver installed on your computer. To add a fax or scanner driver to the list, click the  (Add Fax) or  (Add Scanner) button.
---	---------------------	---

Using Samsung Printer Center

2	Quick links	Displays links to the functions available for managing fax or scanner drivers. The quick links in the Scanner & Fax tab offer the following features:  To use this feature, the scanner driver and fax driver must be installed on the computer. • Settings: Allows you to configure the settings for fax or scanner drivers. - Address Book (fax only): Opens the Address Book. - Fax Transmission History (fax only): Opens the fax transmission history. - Fax preferences (fax only): Allows you to configure the default fax settings. - Change device: Allows you to change the devices into another device. - Properties: Allows you to configure the properties of a device, such as location and add comments about the device. • Actions: Allows you to use the scan feature. • Management: Allows you to manage the devices registered in the program. - Remove fax or Remove scan: Removes the selected fax or scan driver. - Update software: Downloads and applies the applicable software updates.
	3	Printer information

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



- Available for Windows and Mac OS users only.
- For Windows, Internet Explorer 6.0 or higher is the minimum requirement for 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 a button.

Understanding Samsung Easy Printer Manager

To open the program:

For Windows,

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

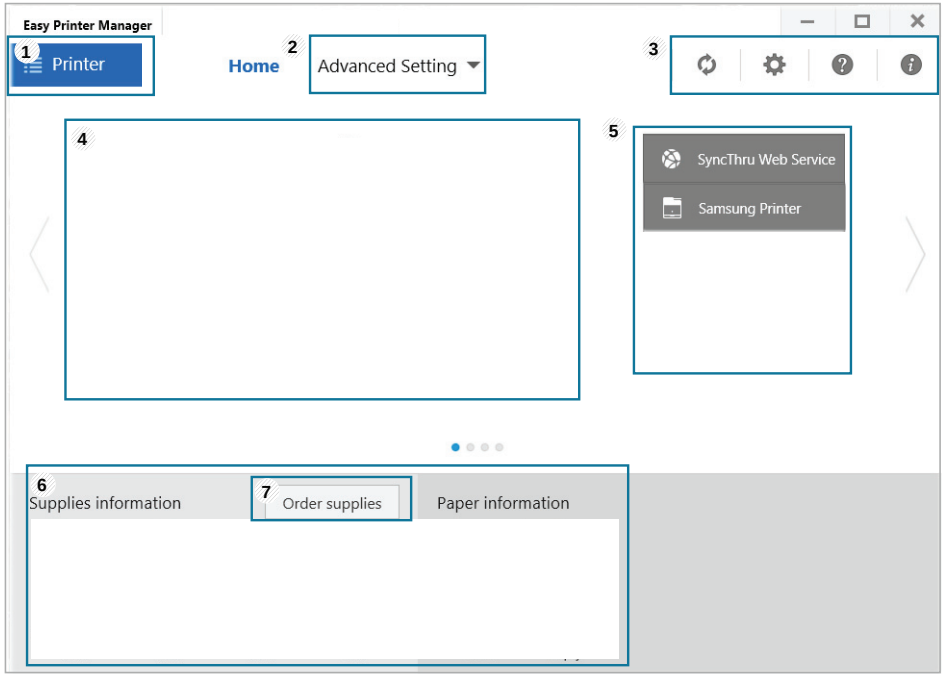
For Mac,

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.



	Printer list	The Printer list displays printers installed on your computer and network printers added by network discovery (Windows only).
1		

Using Samsung Easy Printer Manager

2	Advanced Setting	The advanced user interface is intended to be used by the person responsible for managing the network and machines.  Some menus may not appear in the display depending on options or models. If so, it is not applicable to your machine. • Device Settings: You can configure various machine settings such as machine setup, paper, layout, emulation, network, and print information.  If you connect your machine to a network, the SyncThru™ Web Service icon is enabled. • Scan to PC Settings: This menu includes settings to create or delete scan to PC profiles. - Scan Activation: Determines whether or not scanning is enabled on the device. - Basic tab: Contains settings related general scan and device settings. • 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. - Alert History: Provides a history of device and toner related alerts.
3	Application information	Includes links for changing to the refresh, preference setting, help, and about.
4	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.  This button opens the Troubleshooting Guide when an error occurs. You can directly open the troubleshooting section in the user's guide.
5	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.
6	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.
7	Order supplies	Click on the Order button from the supply ordering window. You can order replacement toner cartridge(s) from online.
 Select the Help menu or click the  button from the window and click on any option you want to know about.		

Using Samsung Printer Status

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



- The Samsung Printer Status window and its contents shown in this user's guide may differ depending on the machine or operating system in use.
- Check the operating system(s) that are compatible with your machine (see "System requirements" on page 71).
- Available for Windows OS users only.

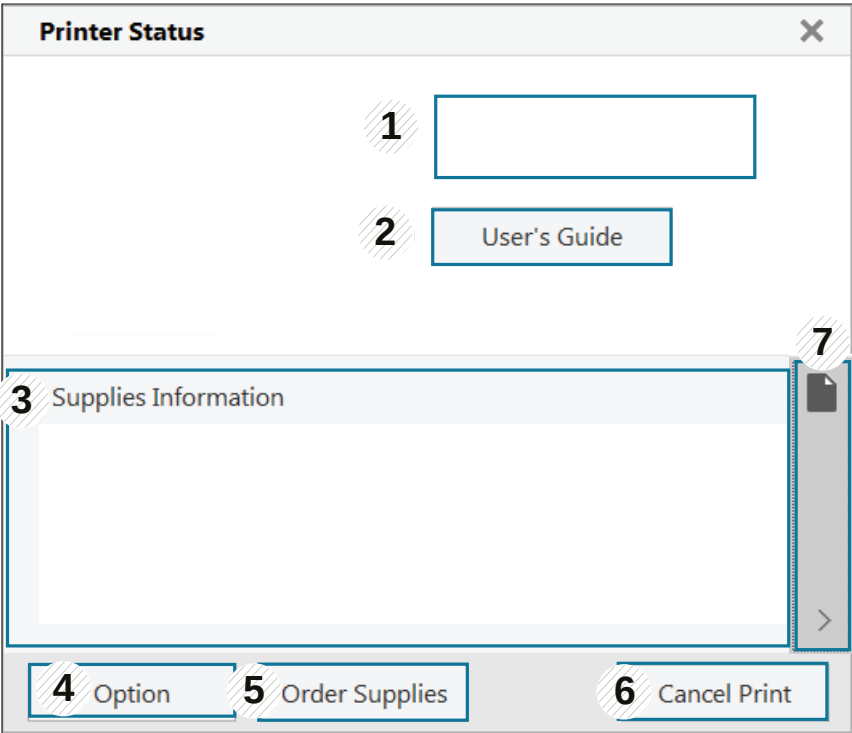
Samsung Printer Status overview

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.



Using Samsung Printer Status

1	Device Information	You can see the device status , current printer model name, connected port name in this area.
2	User's Guide	You can view the online User's Guide.  This button opens the Troubleshooting Guide when an error occurs. You can directly open the troubleshooting section in the user's guide.
3	Supplies Information	You can view the percentage 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.
4	Option	You can set printing job alert related settings.
5	Order Supplies	You can order replacement toner cartridge(s) from online.
6	Cancel Print or Close	• Cancel Print : If print job is waiting in the print queue or printer, cancel all user's print jobs in the print queue or the printer. • Close : Depending on the status of the machine or the supported functions, the Close button may appear to close the status window.

7	Toner/Paper Information	This button areas for paper and toner info will be available based on the device.
---	--------------------------------	---

Using Samsung Printer Experience

Samsung Printer Experience is a Samsung application that combines Samsung machine settings and machine management into one location. You can set device settings, order supplies, open troubleshooting guides, visit Samsung’s web site, and check connected machine information. This application will be automatically downloaded from the Windows **Store** if the machine is connected to a computer with an Internet connection.

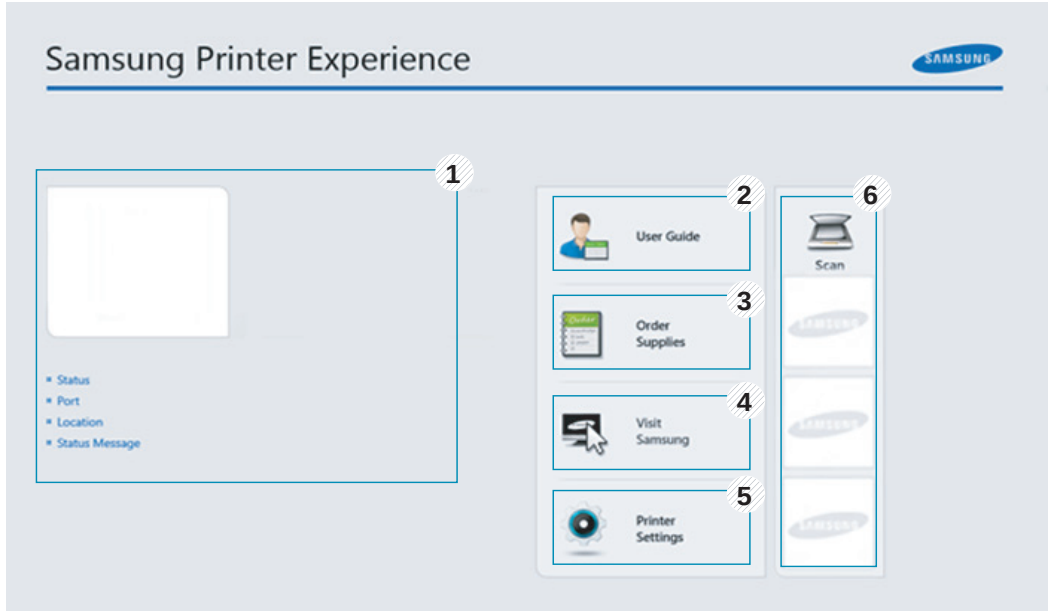
Understanding the Samsung Printer Experience

To open the application,

From the **Start** screen, select the **Samsung Printer Experience** () tile.

The **Samsung Printer Experience** interface comprises various useful features as described in the following table:

 The screenshot may differ depending on the model you are using.



1	Printer Information	This area gives you general information about your machine. You can check information, such as the machine’s status, location, IP address, and remaining toner level.
---	----------------------------	---

Using Samsung Printer Experience

2	User's Guide	You can view the online User's Guide. You need to be connected to the Internet to use this feature.  This button opens the Troubleshooting Guide when an error occurs. You can directly open the troubleshooting section in the user's guide.
3	Order Supplies	Click on this button to order replacement toner cartridges online. You need to be connected to the Internet to use this feature.
4	Visit Samsung	Links to Samsung printer website. You need to be connected to the Internet to use this feature.
5	Printer Settings	You can configure various machine settings such as machine setup, paper, layout, emulation, networking, and print information through SyncThru™ Web Service. Your machine needs to be connected to a network. This button will be disabled if your machine is connected via USB cable.
6	Device List & Latest Scanned Image	The scan list displays devices that supports Samsung Printer Experience. Under the device, you can see the latest scanned images. Your machine needs to be connected to a network to scan from here. This section is for the users with multi-functional printers.

Adding/Deleting Printers

If you do not have any printer added to the **Samsung Printer Experience**, or if you want to add/delete a printer, follow the instructions below.



You can only add/delete network connected printers.

Adding a printer

- 1 From the **Charms**, select **Settings**.
Or, right-click the **Samsung Printer Experience** page and select **Settings**.
- 2 Select **Add Printer**
- 3 Select the printer you want to add.
You can see the added printer.



If you see  mark, you can also click  mark to add printers.

Using Samsung Printer Experience

Deleting a printer

- 1 From the **Charms**, select **Settings**.
Or, right-click the **Samsung Printer Experience** page and select **Settings**.
- 2 Select **Remove Printer**
- 3 Select the printer you want to delete.
- 4 Click **Yes**.
You can see that the deleted printer is removed from the screen.

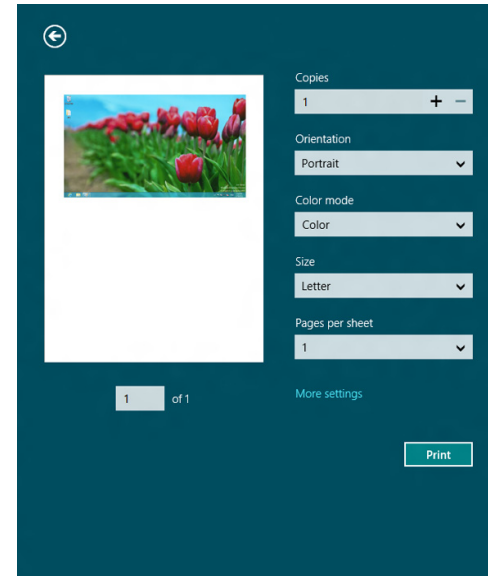
Printing from Windows 8

This section explains common printing tasks from the **Start** screen.

Basic printing

- 1 Open the document to print.
- 2 From the **Charms**, select **Devices**.
- 3 Select your printer from the list

- 4 Select the printer settings, such as the number of copies and orientation.
- 5 Click the **Print** button to start the print job.



Cancelling a print job

If the printing job is waiting in the print queue or print spooler, cancel the job as follows:

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

Using Samsung Printer Experience

Opening more settings

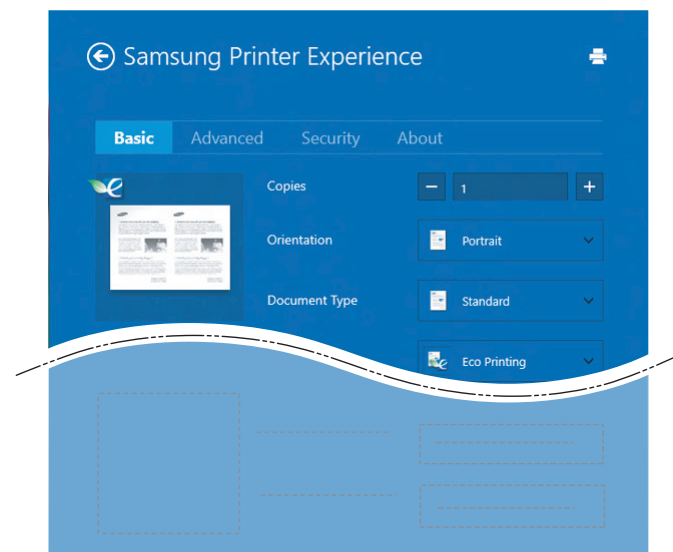


The screen may appear somewhat different depending on the model or options.

You can set up more printing parameters.

- 1 Open the document you want to print.
- 2 From the **Charms**, select **Devices**.
- 3 Select your printer from the list
- 4 Click **More settings**.

Basic tab



Basic

This option allows you to choose the basic printing settings such as copies, orientation, and document type.

Eco settings

This option allows you to choose multiple pages per side to save media.

Using Samsung Printer Experience

Advanced tab



Paper settings

This option allows you to set the basic paper handling specifications.

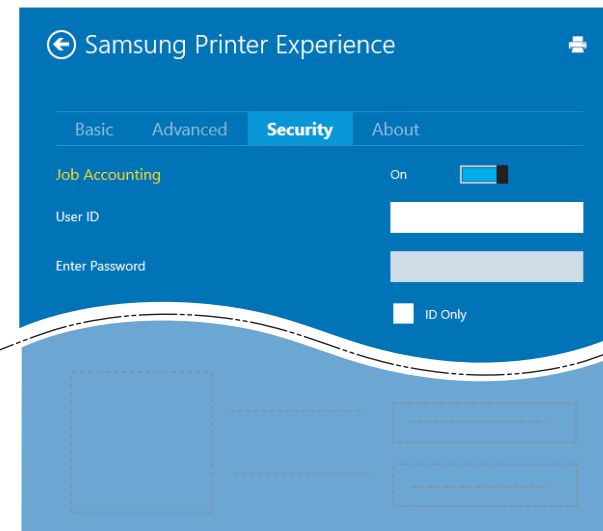
Layout settings

This option allows you to set the various ways to layout your documents.

Security tab



Some features may not be available depending on the model or options. If this tab is not shown or disabled, it means that these features are not supported.



Job Accounting

This option allows you to print with the given permission.

Confidential Printing

This option is used for printing confidential documents. You need to enter a password to print using it.

Using Samsung Printer Experience

Using the sharing feature

Samsung Printer Experience allows you to print from other applications installed on the computer using the sharing feature.



This feature is only available for printing jpeg, bmp, tiff, gif, and png file formats.

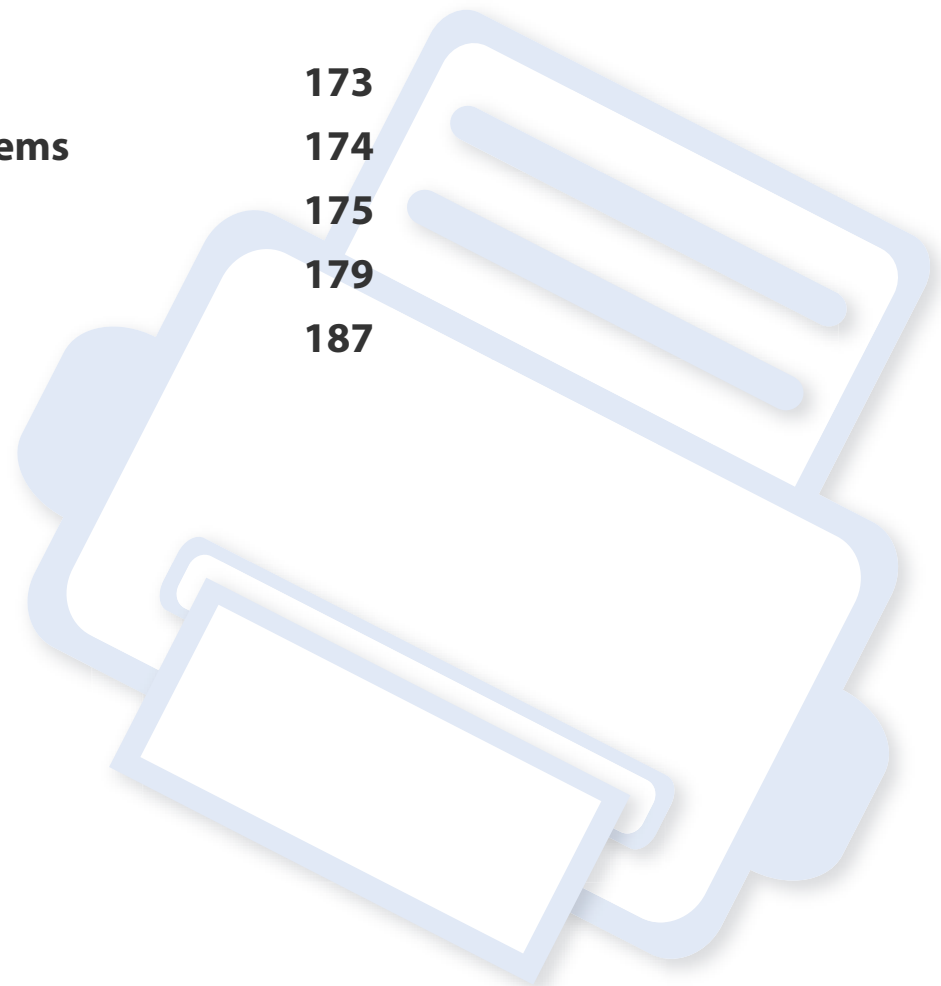
- 1 Select the content you want to print from other application.
- 2 From the **Charms**, select **Share** > **Samsung Printer Experience** .
- 3 Select the printer settings, such as the number of copies and orientation.
- 4 Click the **Print** button to start the print job.



5. Troubleshooting

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

- **Paper feeding problems** 173
- **Power and cable connecting problems** 174
- **Printing problems** 175
- **Printing quality problems** 179
- **Operating system problems** 187

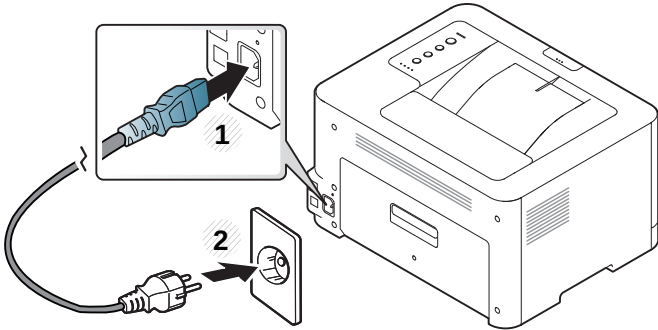
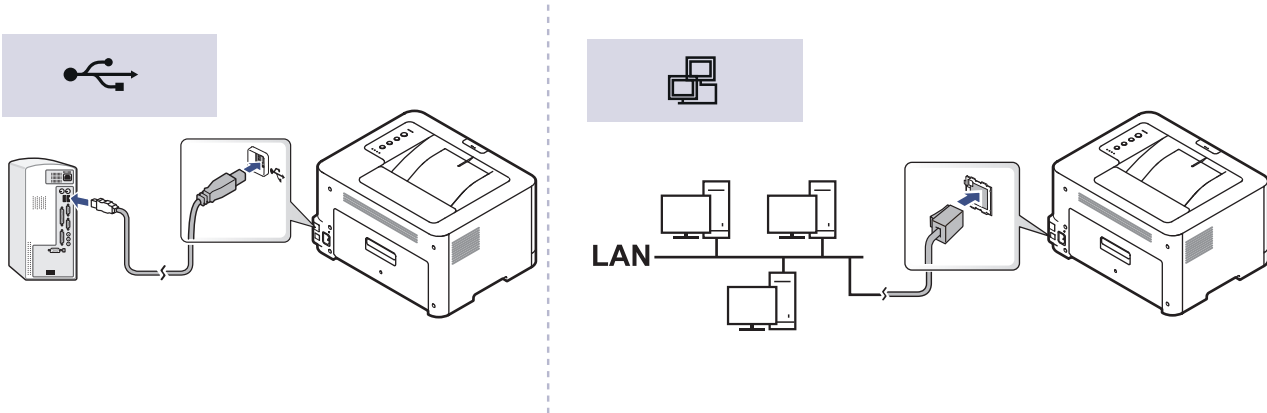


Paper feeding problems

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

Reboot the power. If the problem persists, please call for service.

Condition	Suggested solutions
The machine is not receiving power, or the connection cable between the computer and the machine is not connected properly.	1 Connect the machine to the electricity supply first.  2 Check the USB cable or network cable in the machine's rear.  3 Disconnect the USB cable or network cable in the machine's rear and then, 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 59). • No paper is loaded. Load paper (see "Loading paper in the tray" on page 28). • The toner cartridge is not installed. Install the toner cartridge (see "Replacing the toner cartridge" on page 48). • Make sure the protect cover and sheets are removed from the toner cartridge (see "Replacing the toner cartridge" on page 48). 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 19).
	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 36). Select the correct paper source. See the printer driver help screen (see "Using help" on page 38).
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 36). See the printer driver help screen (see "Using help" on page 38).
	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 36).

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 46. • See "Replacing the toner cartridge" on page 48.
	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

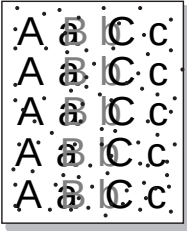
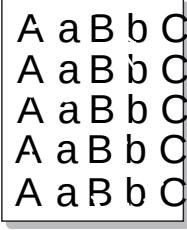
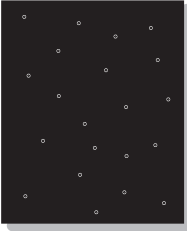
Condition	Possible cause	Suggested solutions
Before printing, the machine emits vapor near the output tray.	Using damp/wet paper can cause vapor [white smoke] during printing.	This is not a problem, just keep printing. If you are bothered by the smoke [vapor], then replace the paper with fresh paper from an unopened ream.
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 36).
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 36).

Printing quality problems

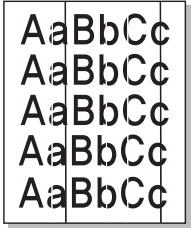
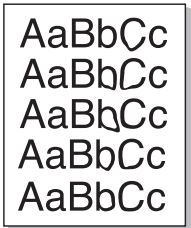
If the inside of the machine is dirty or paper has been loaded improperly, there might be a reduction in print quality. See the table below to clear the problem.

Condition	Suggested Solutions
Light or faded print AaBbCc AaBbCc AaBbCc AaBbCc AaBbCc	• If a vertical white streak or faded area appears on the page, the toner supply is low. Install a new toner cartridge (see "Replacing the toner cartridge" on page 48). • 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 17). • 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 54). • The surface of the LSU part inside the machine may be dirty. Clean the inside of your machine (see "Cleaning the machine" on page 54). If these steps do not correct the problem, contact a service representative.
The top half of the paper is printed lighter than the rest of the paper AaBbCc AaBbCc AaBbCc AaBbCc AaBbCc	The toner might not adhere properly to this type of paper. • Change the printer option and try again. Go to Printing Preferences, click the Paper tab, and set the paper type to Recycled (see "Opening Printing Preferences" on page 36).

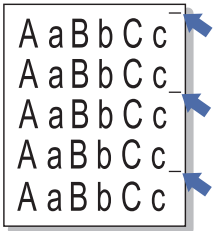
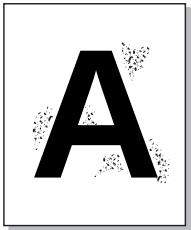
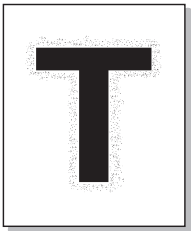
Printing quality problems

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 54). • The paper path may need cleaning. Contact a service representative (see "Cleaning the machine" on page 54).
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 36). 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 54). • The paper path may need cleaning. Clean the inside of your machine (see "Cleaning the machine" on page 54). 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 52). 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 54). 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 52). • Thoroughly redistribute the toner (see "Redistributing toner" on page 46).
Toner smear 	• Clean the inside of the machine (see "Replacing the toner cartridge" on page 48). • Check the paper type and quality. • Remove the old imaging unit and install a new one (see "Replacing the imaging unit" on page 52).

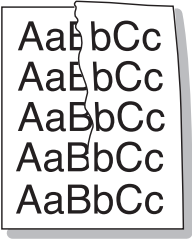
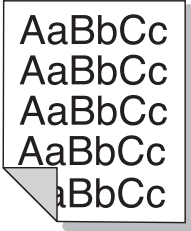
Printing quality problems

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 52). • 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 36). 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 46).
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 36). • 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.

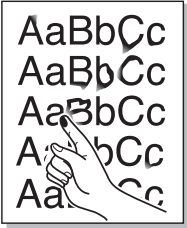
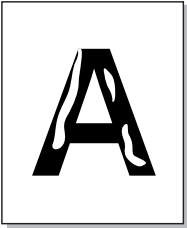
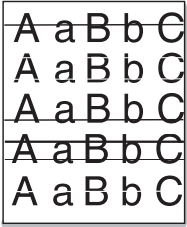
Printing quality problems

Condition	Suggested Solutions
Misformed characters AaBbCc AaBbCc AaBbCc AaBbCc AaBbCc AaBbCc AaBbCc	If characters are improperly formed and producing hollow images, the paper stock may be too slick. Try different paper.
Page skew AaBbCc AaBbCc AaBbCc AaBbCc AaBbCc	- 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 AaBbCc AaBbCc AaBbCc AaBbCc AaBbCc	- 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.

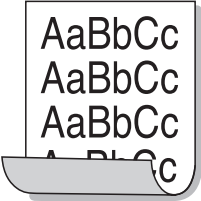
Printing quality problems

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 54).
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 52). • 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 54). • Check the paper type and quality. • Remove the imaging unit and then, install a new one (see "Replacing the imaging unit" on page 52). 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 52). 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 36).
• 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 138).

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.
Samsung Printer Experience is not shown when you click more settings .	Samsung Printer Experience is not installed. Download the app. from the Windows Store and install it.
Machine information is not displayed when you click the device in the Devices and Printers .	Check the Printer properties . Click the Ports tab. (Control Panel > Devices and Printers > Right-click on your printer icon and select Printer properties) If the port is set to File or LPT, uncheck them and select TCP/IP, USB, or WSD.



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

Operating system problems

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

Operating system problems

Common Linux problems

Condition	Suggested solutions
Unchecking the collate option in the Print Dialog does not work.	For some distributions, GNOME Print Dialog has an issue handling the collate option. As workaround, set the default value of collate option to False using the system's printing utility(execute "system-config-printer" in the Terminal program).
Printing always works with duplex.	This duplex issue was in Ubuntu 9.10 CUPS package. Update CUPS version to 1.4.1-5ubuntu2.2.
Printer is not added through system's printing utility.	The problem occurs on Debian 7 due to the defect in 'system-config-printer' package of the Debian 7 (http://bugs.debian.org/cgi-bin/bugreport.cgi?bug=662813 in Debian bug tracking system). Please use another way to add printer (CUPS WebUI for example)
Paper size and orientation are disabled in the Print Dialog when opening text files.	The problem occurs on Fedora 19 and it's related to 'leafpad' text editor on Fedora 19. Please use other text editors like 'gedit'.
Printing produces divided images.	This issue exists in openSUSE 13.2 due to wrong ghostscript provided by the system. Update 'cups-filters-ghostscript' package with the command "zypper install --force cups-filters-ghostscript" or with "Install/Remove Software" utility.



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

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DRC	499999	www.samsung.com/ support
ECUADOR	1-800-10-7267 1-800-SAMSUNG (72-6786)	www.samsung.com/ latin/support (Spanish) www.samsung.com/ latin_en/ support(English)
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ESTONIA	800-7267	www.samsung.com/ee/support
FINLAND	030-6227 515	www.samsung.com/fi/support
FRANCE	01 48 63 00 00	www.samsung.com/fr/support
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GEORGIA	0-800-555-555	www.samsung.com/support

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GREECE	80111-SAMSUNG (80111 726 7864) only from land line (+30) 210 6897691 from mobile and land line	www.samsung.com/gr/support
GUATEMALA	1-800-299-0013 1-800-299-0033	www.samsung.com/latin/support (Spanish) www.samsung.com/latin_en/support (English)
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KAZAKHSTAN	8-10-800-500-55-500 (GSM:7799, VIP care 7700)	www.samsung.com/ support

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LUXEMBURG	261 03 710	www.samsung.com/ support
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The following glossary helps you get familiar with the product by understanding the terminologies commonly used with printing as well as mentioned in this user's guide.

802.11

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

802.11b/g/n

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

Access point

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

ADF

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

AppleTalk

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

BIT Depth

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

BMP

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

BOOTP

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

CCD

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

Collation

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

Control Panel

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

Coverage

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

CSV

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

DADF

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

Default

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

DHCP

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

DIMM

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

DLNA

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

DNS

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

Dot Matrix Printer

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

DPI

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

DRPD

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

Duplex

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

Duty Cycle

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

ECM

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

Emulation

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

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

Ethernet

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

EtherTalk

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

FDI

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

FTP

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

Fuser Unit

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

Gateway

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

Grayscale

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

Halftone

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

HDD

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

IEEE

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

IEEE 1284

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

Intranet

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

IP address

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

IPM

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

IPP

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

IPX/SPX

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

ISO

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

ITU-T

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

ITU-T No. 1 chart

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

JBIG

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

JPEG

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

LDAP

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

LED

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

MAC address

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

MFP

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

MH

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

MMR

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

Modem

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

MR

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

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.

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, labels, and transparencies which can be used in a printer, a scanner, a fax or, a copier.

PPM

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

PRN file

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

Protocol

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

PS

See PostScript.

PSTN

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

RADIUS

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

Resolution

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

SMB

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

SMTP

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

SSID

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

Subnet Mask

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

TCP/IP

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

TCR

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

TIFF

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

Toner Cartridge

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

TWAIN

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

UNC Path

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

URL

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

USB

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

Watermark

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

WEP

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

WIA

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

WPA

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

WPA-PSK

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

WPS

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

XPS

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

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