

Printers

Chapter 10

This presentation covers:

- > Ethics
- > Printers Overview

Qualities of a Good Technician

“Soft skills” as they are known across many industries
are essential

Ethics

- > Ethics is a set of morals by which you live or work
- > Be honest, trustworthy, and dependable
 - > IT technicians are exposed to many personal things—passwords, private data, and visited Internet sites
- > Always be professional—if you are in a situation where someone asks you to share another person’s password, ask yourself whether divulging the information is professional
- > Being ethical at work goes a long way in establishing a good reputation.

Ethics

- > In situations where you are asked to provide access to a room/area where access is restricted, there are a few options:
 - > (1) Be polite and refuse
 - > (2) adamantly refuse
 - > (3) report the person to a supervisor
- > If a request is against corporate policy or could hurt others in the company, you need to report this to a company manager or security

Printers Overview

Printers

- > Printers are a common output device
- > All printers have three subsystems:
 - > (1) the paper transport subsystem
 - > (2) the marking subsystem
 - > (3) the print engine subsystem

Printer Ports

- > Printers connect to IEEE 1394 (FireWire), Ethernet, USB ports, or wirelessly
- > Most wired printers attach to a PC by using the USB port
- > The USB host controller (built into the motherboard or on an adapter) powers up and queries all USB devices about the type of data transfer they want to perform
- > Data is sent in 64-byte sections
- > USB uses only one interrupt for the devices connected to the bus

Categories of Printers

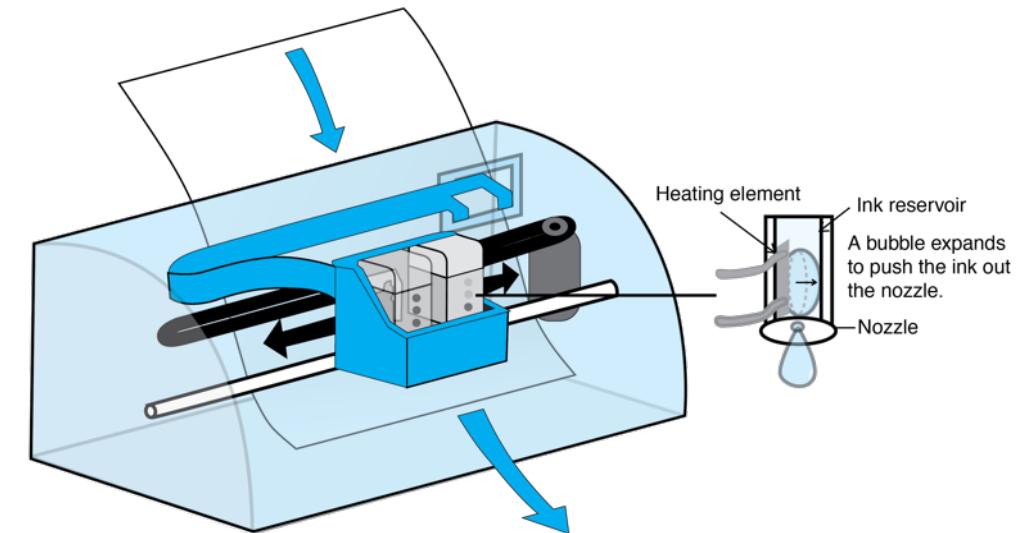
- > Impact (also known as dot matrix)
- > Inkjet
- > Laser
- > Thermal
- > There are more types, but these make up the majority

Impact Printers

- > Impact printers are frequently called dot matrix printers because of the way they create an image on paper
- > It has an impact print head that holds tiny wires called print wires
- > The wires individually strike a print ribbon hard enough to create a dot on the paper. The dots collectively form letters or images
- > The most common print wires are 9, 18, and 24
 - > The 24-pin printers can print near letter quality (NLQ) output

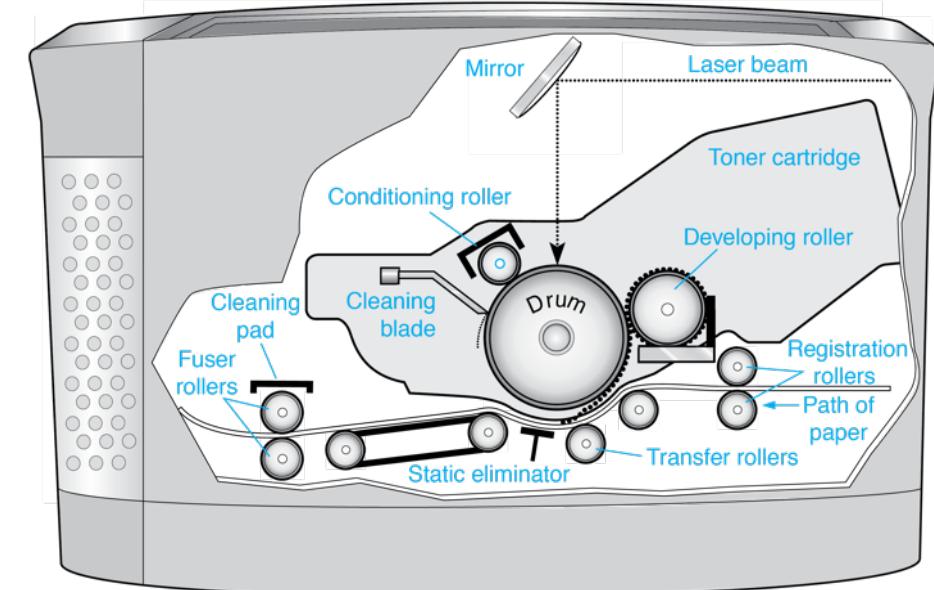
Inkjet Printers

- > Used to print black and white, gray-scale, and color output
- > Has a print head, but does not have metal pins that fire out from the print head
- > The print head has many tiny nozzles that squirt ink onto the paper
- > When the ink runs out, you replace the entire print head
- > The inkjet printer print head is known as the print, or ink, cartridge
- > An ink cartridge has up to 6,000 nozzles instead of the 9-, 18-, or 24-pin configuration of the impact printer



Laser Printers

- > The term laser stands for light amplification by stimulated emission of radiation
- > Uses a process similar to a copy machine's electrophotographic process



Laser Printer Imaging Process Steps

- > Processing – get the data ready to send to the printer
- > Charging – get the drum ready for use
- > Exposing – write 1s and 0s on the drum surface with light from an LED or laser beam array
- > Developing – release toner into the drum to be attracted to where light struck the drum
- > Transferring – as paper rolls through the printer, transfer the image to the paper
- > Fusing – toner is melted and pressed into the paper
- > Cleaning – wipe away excess toner

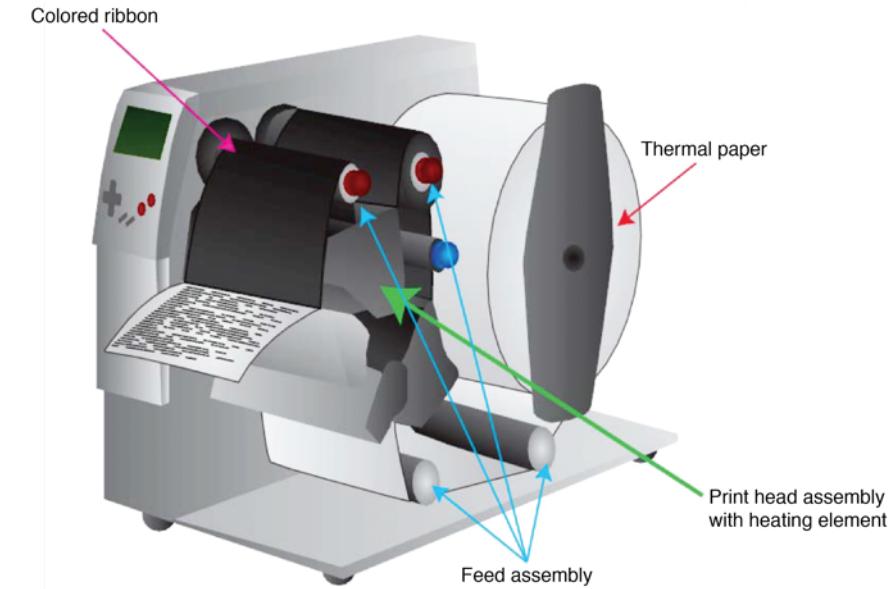


Mnemonic

People
Can't
Expect
Dummies
To
Fix
Computers

Thermal Printers

- > Thermal printers are used at kiosks, gas pumps, trade shows, etc.
- > Uses special thermal paper that is sensitive to heat
- > The print head has closely spaced heating elements that appear as closely spaced dots on the heat-sensitive paper
- > A feed assembly is used to move the thermal paper through the printer



3-D Printers

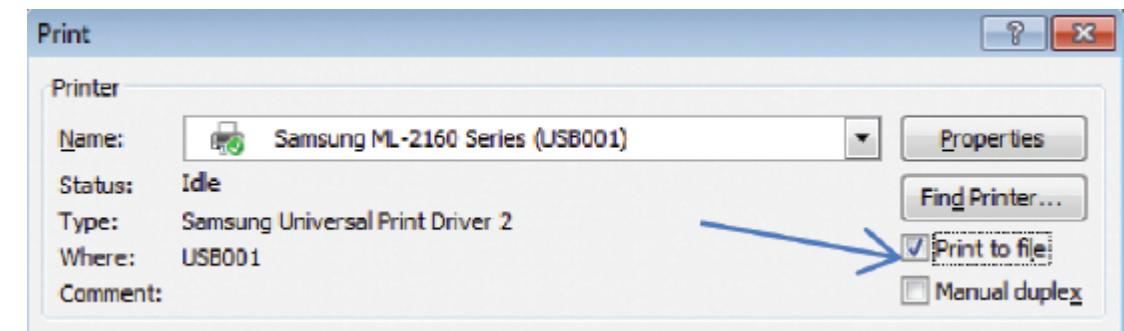
- > Used to “print” or create 3-D solid objects out of various types of materials including plastic, ceramics, metals, metal alloys, clay, etc.
- > A 3-D image is scanned into the computer, drawn, or downloaded from the Internet
- > Software takes the image and slices it into thousands of layers
- > The printer “prints” each layer until the object is formed

Paper

- > Impact printers are the most forgiving because a mechanism physically impacts the paper
- > Ink-jet printers spray ink onto the paper, so the quality of paper determines how well the ink adheres
 - > If the paper absorbs too much of the ink, the printout appears faded
- > For a laser printer, how well the paper heats and absorbs the toner also affects the printed output
 - > Paper is a big factor in the quality of how long the ink lasts and the quality of print produced
 - > Erasable-bond paper does not work well in laser printers because the paper does not allow the toner to fuse properly

Virtual Printing

- > Virtual printing is printing to somewhere other than the directly connected printer and commonly to a specific file type so the file can be viewed, saved, or even emailed, instead of printed or eventually sent to a printer
- > Print options
 - > Print to file
 - > Print to PDF
 - > Print to XPS
 - > Print to image



Impact Printer Maintenance

Maintenance done on an impact printer commonly involves the following:

- > Replacing the ribbon
- > Replacing the print head
- > Replacing paper
- > Clearing and cleaning the paper path

Inkjet Printer Maintenance

Maintenance done on an inkjet printer commonly involves the following:

- > Replacing the cartridge
- > Performing calibration/print head alignment
- > Clearing paper jams
- > Cleaning the print head

Laser Printer Maintenance

Maintenance done on a laser printer commonly involves the following:

- > Replacing a toner cartridge
- > Applying a maintenance kit
- > Performing calibration
- > Clearing paper jams
- > Cleaning the printer

Printers in the Windows Environment

There are three essential areas for a technician to know:

- > (1) configuration utilities
- > (2) managing the print driver
- > (3) printer settings

Printers in the Windows Environment

To print in Windows, use one of the following methods

- > Open the file in the appropriate application. Click the File menu item and click the Print option.
- > Drag the file to print to the printer's icon in the Printers folder.
- > Create a shortcut icon on the desktop for a specific printer and drag the file to this icon.
- > Right-click the filename and select the Print option.
- > From within the application, press the Ctrl+P keys to bring up the Print window.
- > From within an application, click the printer icon located under the menu bar.

Cloud Printing

- > Print using any device whether they are connected to the network where the printer is located or not
- > Can be through a service provided by the printer manufacturer or through a provider such as Google

Computer Terms

Refer to the glossary terms at the end of the textbook chapter. Review Chapter 10 and become familiar with the terms.

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of

**The Complete CompTIA A+ Guide to IT
Hardware and Software 7th Ed.**

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