CompTIA A+ (220-1101) Day 8 Notes

Troubleshooting Video, Projector, and Display Issues - Section 5.4

No Image

- A common issue with display technologies is the lack of an image.
- The usual suspects include:
    - Display device not turned on
    - Physical cabling issues
    - Incorrect input selected on the monitor or projector
    - A burned-out bulb on projectors
- Only after verifying power, physical connectors, and input source should other theories be pursued.

Fuzz or Stretched Images

- Fuzziness (blurriness) can occur when the resolution is set too low.
- Missing video drivers can cause the system to default to lower resolutions.
- Stretched images may be the result of incorrect aspect ratios.

Physical Display Issues

- Burn-in occurs when an image is on screen for too long and becomes visibly etched into the display.
    - Replace screen.
- Dead pixels are caused by manufacturing defects or physical failures over time.
    - Replace monitor, depending on warranty.
    - Use browser-based or native application to attempt fix.
    - Remove power from display and apply moderate pressure.
- Incorrect color display:
    - Ensure that color quality is as high as possible (32-bit on Windows).
    - Double-check that the right driver is in use.
    - Tint, saturation, and contrast settings on the monitor may also be the culprit.
- Dim image:
    - Check screen brightness in the monitor's settings.
    - Try disabling auto-dimming functions.
    - Physical backlight failures may also be the culprit.
- Flashing or flickering screen:
    - Poorly seated cables
    - Incorrect refresh rate for a given monitor
    - Verify video card is functioning and driver is up to date.
- Audio issues (with monitors that support sound):
    - Ensure volume is appropriately set (in OS, browsers, monitor, etc.)
    - Confirm the audio output is correctly set.
    - Check for muted devices or Bluetooth audio devices.

- Intermittent projector shutdown:
    - Projector may be configured to shut down after a period of inactivity.
    - Ensure that the projector isn't overheating.

Troubleshooting Mobile Devices - Section 5.5

Battery Issues

- Mobile device batteries are usually based on lithium-ion chemistry, which has a finite number of charge cycles.
- Ensure an appropriate charger is being used. Incorrect chargers may be slow or even accelerate battery degradation.
- Batteries will naturally degrade over time:
    - Limited ability to hold a charge
    - Battery swelling
- The best course of action is to replace the battery.
    - Use care with swollen batteries (fire hazard)
    - Dispose of batteries properly — not in the dumpster!
    - Some mobile devices may require assistance from third-party specialists.

Screen Issues

- Cracked Screens:
    - Can be prevented outright with screen protectors
    - Are replaceable, but require specific tools such as heat guns
- Touch sensor/digitizer issues:
    - A dirty screen or low-quality screen protector may interfere with these sensors
    - Sensor drift may occur over time
    - Calibration routines may be built into the operating system or available with an app
    - Other devices may need attention from vendors or third parties

Connectivity Issues

- Degraded or absent connectivity can generally be solved by checking:
    - Is airplane mode on?
    - Is Wi-Fi or Bluetooth on?
    - Connection strength
    - Anything that would cause interference in the area
    - Single device or several?

Assorted Mobile Device Issues

- Malware affects mobile platforms and may require a factory reset to remediate.
- Physically damaged ports can be non-trivial to replace:
    - There are guides on iFixit and other sites.

    - May require the help of a third party.
- Liquid damage requires quick intervention:
    - Power down device quickly and remove battery (if possible)
    - Place device in a closed container with a desiccant (e.g., silica gel) for several days
- Overheating may be caused by internal or external factors:
    - Internal — charging, intensive processing, and blocked vents
    - External — summer heat or nearby heat sources

Troubleshooting Printers - Section 5.6

Common Printer Symptoms

Symptom	Possible Cause
Line down printer pages	Vertical lines - dirty or damaged imaging drum (laser printers). Horizontal lines - pin stuck (dot matrix printers).
Garbled print output	Incorrect driver being used for printer (all printer types).
Toner not fusing to paper	Degraded or broken fusing assembly (laser printers).
Paper jams	Printer paper is the wrong weight or stiffness (all printers). Pads and rollers are worn out (all printers). High humidity (all printers). Debris or detritus (all printers).
Faded print	Ink or toner is low (inkjet, impact, and laser printers). Charging apparatus needs replacement (laser printers). Platen gap too wide (impact printers).
Paper not feeding	Overloaded tray. Wrong paper size or weight. Pads or rollers degraded.
Prints stuck in queue	Printer has hung and needs to be reset. Printer spooler needs to be restarted (Windows).
Speckling	Dirty printer or loose toner.
Echoes and ghosting	The imaging drum isn't being properly cleaned of residual toner (laser printers).
Incorrect colors	One of the ink or toner cartridges has run out (laser printer). Clogged ink cartridge (inkjet).
Grinding noise	Paper jam (any printer type). Carriage stall – check cartridges are correctly seated (inkjet).
Wrong page orientation	Navigate to your printer options within your OS and select the correct orientation (landscape vs portrait).

Troubleshooting Networks - Section 5.7

Poor or Limited Connectivity

- **Wireless networks**:
  - Signal strength – weak signal can degrade throughput and cause intermittent connectivity.
  - Interference – are there many wireless networks in the area? Do other access points overlap with your Wi-Fi channels?
  - Misconfiguration – is the local Wi-Fi network configured?
- **Wired networks**:
  - Ensure appropriate twisted pair cabling is in use.
  - Check for damage or poorly seated connectors.
  - Twisted pair can also encounter interference near certain equipment.
- **Wired and Wireless networks**:
  - Is the upstream ISP connection the cause of poor performance?
  - Misconfigured or malfunctioning DHCP may cause limited connectivity (169.254.x.x?).

VoIP Issues

- Voice over IP (VoIP) is highly sensitive to latency, jitter, and packet loss:
  - **Latency** – packets are taking too long to reach their destination.
  - **Jitter** – packets are arriving in the wrong order (latency variations).
  - **Packet loss** – packets aren't arriving at all.
- Troubleshooting options include:
  - Identifying network congestion issues (internally or with ISP).
  - Moving VoIP systems to wired Ethernet.
  - Implementing QoS (prioritization of latency-sensitive applications like VoIP).

Port Flapping

- Occurs when a network interface repeatedly starts and stops.
  - **Physical issues** are one cause:
    - Failing interface on switch
    - Failing interface on client system
    - Damaged cable
  - **Misconfigurations** are another cause:
    - Ensure the same speed is configured on both ends.
    - Ensure the same duplex is configured on both ends.