

Topic 4B: Compare Networking Hardware Notes:

Networking Hardware Notes (Direct Points)

- **Network Interface Cards (NICs):** Enables network connection; supports Ethernet standards like 1000BASE-T; includes MAC addresses for unique identification.
- **Patch Panels:** Centralized hub for organizing network cabling; uses IDC punchdown blocks; requires clear labeling for easy management.
- **Hubs:** Outdated device; connects multiple devices; broadcasts data to all ports; prone to collisions.
- **Switches:** Replaced hubs; creates separate collision domains; forwards data based on MAC addresses; supports full-duplex communication.
- **Unmanaged Switches:** Simple plug-and-play devices; used for small networks.
- **Managed Switches:** Configurable; used in larger networks; supports VLANs, traffic management, and security settings.
- **Power Over Ethernet (PoE):** Supplies power and data through one Ethernet cable; supports devices like cameras and access points.
- **PoE Standards:**
 - 802.3af: Up to 13W.
 - 802.3at (PoE+): Up to 25W.
 - 802.3bt (PoE++): Up to 73W.
- **PoE Injector:** Adds power to Ethernet cables when a switch doesn't support PoE.