



2.0 Infrastructure

2.1 Given a scenario, deploy the appropriate cabling solution.

- **Media types**
 - Copper
 - UTP
 - STP
 - Coaxial
 - Fiber
 - Single-mode
 - Multimode
- **Plenum vs. PVC**
- **Connector types**
 - Copper
 - RJ-45
 - RJ-11
 - BNC
 - DB-9
 - DB-25
 - F-type
 - Fiber
 - LC
 - ST
- SC
- APC
- UPC
- MTRJ
- **Transceivers**
 - SFP
 - GBIC
 - SFP+
 - QSFP
 - Characteristics of fiber transceivers
 - Bidirectional
 - Duplex
- **Termination points**
 - 66 block
 - 110 block
 - Patch panel
 - Fiber distribution panel
- **Copper cable standards**
 - Cat 3
 - Cat 5
 - Cat 5e
 - Cat 6
 - Cat 6a
 - Cat 7
 - RG-6
 - RG-59
- **Copper termination standards**
 - TIA/EIA 568a
 - TIA/EIA 568b
 - Crossover
 - Straight-through
- **Ethernet deployment standards**
 - 100BaseT
 - 1000BaseT
 - 1000BaseLX
 - 1000BaseSX
 - 10GBaseT

2.2 Given a scenario, determine the appropriate placement of networking devices on a network and install/configure them.

- Firewall
- Router
- Switch
- Hub
- Bridge
- Modems
- Wireless access point
- Media converter
- Wireless range extender
- VoIP endpoint



2.3 Explain the purposes and use cases for advanced networking devices.

- Multilayer switch
 - Wireless controller
 - Load balancer
 - IDS/IPS
 - Proxy server
 - VPN concentrator
 - AAA/RADIUS server
 - UTM appliance
 - NGFW/Layer 7 firewall
 - VoIP PBX
 - VoIP gateway
 - Content filter
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2.4 Explain the purposes of virtualization and network storage technologies.

- **Virtual networking components**
 - Virtual switch
 - Virtual firewall
 - Virtual NIC
 - Virtual router
 - Hypervisor
 - **Network storage types**
 - NAS
 - SAN
 - **Connection type**
 - FCoE
 - Fibre Channel
 - iSCSI
 - InfiniBand
 - **Jumbo frame**
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2.5 Compare and contrast WAN technologies.

- **Service type**
 - ISDN
 - T1/T3
 - E1/E3
 - OC-3 – OC-192
 - DSL
 - Metropolitan Ethernet
 - Cable broadband
 - Dial-up
 - PRI
- **Transmission mediums**
 - Satellite
 - Copper
 - Fiber
 - Wireless
- **Characteristics of service**
 - MPLS
 - ATM
 - Frame relay
 - PPPoE
 - PPP
 - DMVPN
 - SIP trunk
- **Termination**
 - Demarcation point
 - CSU/DSU
 - Smart jack