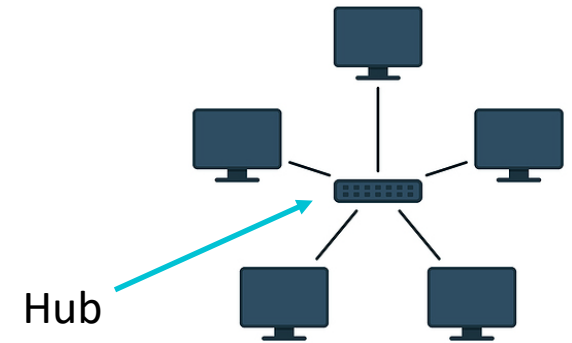# Networking

Networking Devices

Networking Devices

- Hub - Device that connects all the segments of a network together
  - Typically, in a star topology

Hub

- Access Point – Connects devices to a network
 - A router is typically an access point for a single-family home network

A router acts as an access point on some networks

Networking Devices

- Bridge – Connects two similar network segments together
  - A wireless access point is a bridge because it connects a wireless network to a wired network

- Switch– Connects multiple segments of a network together
  - Like a hub, but can filter packets (unlike a hub)
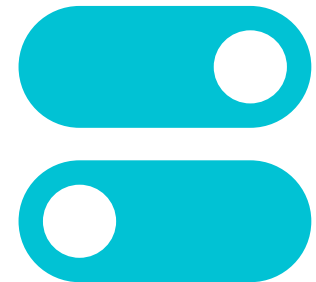
Networking Devices

- Router – Connects multiple network segments together
  - Layer 3 device that forwards traffic based on IP addresses

- Modem – Connects a network to the WAN
  - Converts analog signals to digital signals and vice versa
  - Common modems are cable and DSL modems
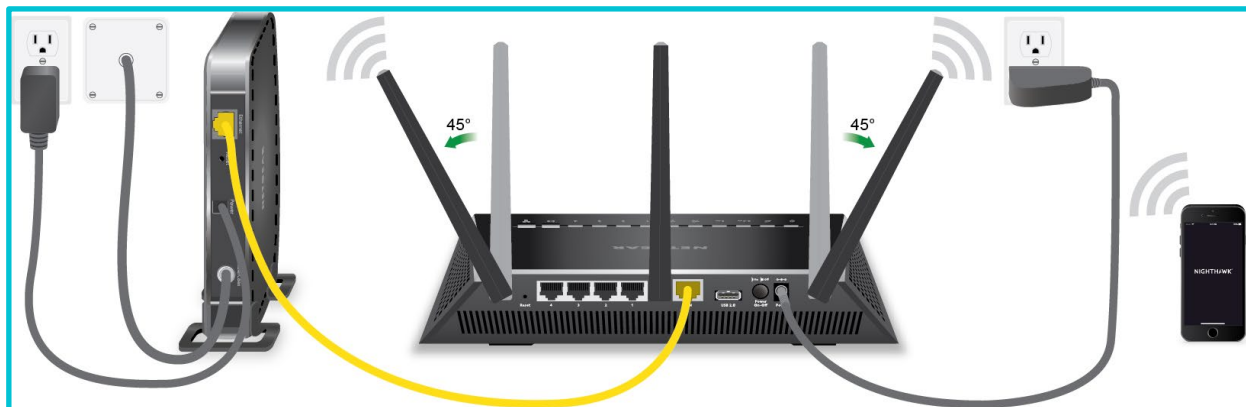
A typical router and modem set-up

Credit: Netgear
Source: https://kb.netgear.com/119/How-do-I-set-up-and-install-my-NETGEAR-router

Networking Devices

- Repeater - Device used to increase a network connectivity range
  - Boosts the signal by repeating it

- Media Converter - Converts one type of cabling to another
  - Example: Ethernet-to-fiber

Cell tower repeaters help extend the range for cellular connections

Advanced Networking Devices

- Wireless LAN Controller - Manages wireless network access points
  - Allows or denies wireless devices to connect to the network

- Load Balancer - Distributes incoming network traffic across a group of backend servers
  - Used for large scale implementations
  - Ability to scale up or scale down

Advanced Networking Devices

- Proxy Server - Gateway between a client requesting a resource and the server providing that resource
  - Typically, used with browsing the internet

- Voice Gateway - Connects an enterprise VoIP network with a telecommunications provider

Advanced Networking Devices

- Intrusion Detection System (IDS) – Detects malicious activity on a network

- Intrusion Prevention System (IPS) – Helps prevent malicious activity on a network

- VPN concentrator/headend - device that accepts multiple VPN connections from remote locations