Components of a Computer Network

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1. Nodes (Send data, receive data or do both)

Communication starts and ends with end devices. Between devices that help the communication are intermediary devices.

* 1. End nodes (End devices): Starting or end point of communication
     1. Ex: Computers, Network Printers, VoIP phones, Telepresence endpoint, security cameras, mobile handheld devices (smart phones, PDAs, wireless debit/credit card reader, barcode scanner)
  2. Intermediary nodes ()Forwards the data from one node to another node.
     1. Ex: Switches, Wireless access points, routers, security devices (firewall), bridges, hubs, repeaters, cell towers.

1. Media (the link): Will carry the data from one side to the other.

Wired needs cables while wireless does not need cable. That is why it is called unguided.

* 1. Wired Medium (Guided Medium)
     1. Ex:
        1. Ethernet straight-through cable(if we want to connect different kinds of devices)(electrical wave),
        2. ethernet crossover cable (if we want to connect the same kind like 2 routers or 2 computers etc.)(electrical wave),
        3. fiber optic cable(light wave),
        4. coaxial cable (mainly used for audio or video communication)(electrical signals),
        5. usb cable.
  2. Wireless medium (Unguided medium) (no need for cable) (data is converted to waves)
     1. Ex (Waves):
        1. Infrared: ex→ Short range communication - tv remote control
        2. Radio: ex→ Bluetooth, WIFI
        3. Microwaves: ex → Cellular System (telephone)
        4. Satellite: Ex → Long range communication - GPS

1. Services
   1. Ex:
      1. E-mail
      2. Storage services
      3. File sharing
      4. Instant messaging
      5. Online game
      6. Voice over IP
      7. Video telephony
      8. World Wide Web (www)