Overview

- Begin to look specifically at networks.

- From a high level.

- All of the architectural models and fundamental models earlier have one thing in common:
  - A network connecting everything together.
A network is composed of
  - Transmission media
  - Hardware devices
  - Software components

We call the hardware devices and software components collectively a “communication subsystem”.

Devices and computers that use the network for communication purposes are called *hosts*.

The term *node* refers to any computer or switching device attached to the network.
The Internet

- The Internet is a single communication subsystem split into distinct subnetworks (subnets) that act as routing units.
Requirements of Networks

- What sorts of requirements typically get imposed on networks?

  - Performance
    - Latency and data transmission rates
  - Scalability
    - Tolerate addition of many nodes
  - Reliability
  - Security
  - Mobility
  - Quality of Service
    - Performance guarantees/bounds.
  - Multicasting
    - Facilitate more than point-to-point pair wise transfers.
Types of networks

- Personal area networks
  - Bluetooth
- Local area networks (LAN)
  - University or corporate network
- Wide area networks (WAN)
- Metropolitan area networks (MAN)
  - DSL/Cable networks
- Wireless LAN/WAN/MAN
  - Cellular data networks
- Internetworks
  - Multiple interoperating networks connected via routers or gateway devices.