

# 1 Networking Today

- Host, End Device: Computer, that is connected to a network. IP Address
  - Client: request information
  - Server: provide information
- Peer-to-Peer-Network: many computers function as servers and clients
- End Device: source or destination of a message
- Intermediary Device: connect end devices and networks
  - Router
  - Switch
- Network Media
  - Copper: electrical impulses
  - Fiber-Optic: light
  - Wireless: electromagnetic waves
- Topology Diagram
  - Physical Topology Diagram: physical location of devices and cable
  - Logical Topology Diagram: addressing
- Network Sizes
  - Small Home Network
  - Small Office and Home Office Networks (SOHO)
  - Medium to Large Networks
  - World Wide Networks
- LAN vs. WAN
  - Local Area Network: limited area, single organisation, high-speed
  - Wide Area Network: connect LANs, wide area, service providers, slower speed
- Internet: interconnected LANs and WANs
- Intranet vs. Extranet
  - Intranet: accessible by employees
  - Extranet: accessible by external people
- Internet Access Technologies
  - Home: Cable, DSL, Cellular, Satellite, Dial-up Phone
  - Business: Dedicated Leased Line, Metro Ethernet, business DSL, Satellite
- Converging Network
  - Data
  - Telephone
  - Video
- Network Architecture
  - Fault tolerance
  - Scalability
  - Quality of Service
  - Security

- Network Trends
  - BYOD
  - Online Collaboration
  - Video Communication
  - Cloud Computing: Public, Private, Hybrid, Community
  - Powerline
  - Wireless Broadband
- Network Security
  - Security Threats
    - \* Virus, worm, trojan horse
    - \* Spyware, adware
    - \* Zero-day-attacks
    - \* Threat actor attacks
    - \* Denial of Service attack
    - \* Data interception and theft
    - \* Identity theft
  - Security Solutions
    - \* Antivirus
    - \* Firewall
    - \* ACL (Access Control List)
    - \* IPS (Intrusion prevention system)
    - \* VPN (Virtual Private Network)