Wednesday, August 29, 2018

CECS 327 Intro to Networking and Distributed Computing

Seminar Notes

August 29, 2018

Goal of Networking:

- Enable communication between network applications on different end points

  Endpoint = computers, cell phones, …

  Application = web, peer to peer, streaming video

  Communication = transfer bits

- Network must understand application needs/demands

  - What data rate?

  - Traffic patter? (bursty or constant bit rate)

  - Traffic target? (multipoint or single destination)

  - Application sensitivity? (to delay, “jitter”, loss)

  - Difficulty

- How does application “use” networking?

  - client-server: web….

  - peer to peer: Skype….

Defining a “Network”

- Network = nodes + links
- Different networks:

  - The Internet

  - UWT network

  - Telephone network

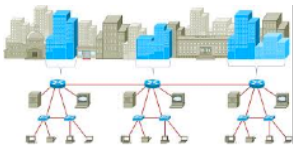
  - Home Wireless Networks

  - Others - sensor nets, cellular networks

- WAN (Wide Area Network)
    - All network talking to each other
- MAN (Metropolitian Area Network)
    - Like LAN but a bigger network

        IE: LAN = home & WAN = School

MAN



"The Internet"

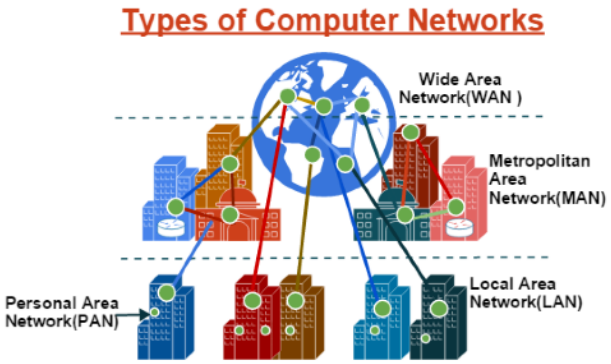
- Internet vs internet
- The interconnected set of networks of the Internet Service Providers (ISPs) and end-networks, providing data communications services
    - IE: www.csulb.edu —> .edu will provide ISPs which server to look for
    - About 17k different ISP networks make up the internet
    - ISP contact each other to find if that webaddr is cached
        - if not then it goes to DNS

Requirements

- Application Programmer

Connectivity

Terminologies



- Scale
- Link
- Nodes
- Point-to-Point (type of connection where 2 nodes talk to each other)
- Multiple Access (nodes have access to shared resources)
- Switched Network
    1. Circuit Switched
        - Circuit needs to be open until call ends
        - Second call can't be made until circuit is free

- while you are talking, package is send
    - Even if you are not talking, you send empty pack.

2. Packet Switched
    - Doesn't care about one on one circuit, as circuit is shared
    - If package needs to be send, then it is send on same circuit
    - Thus no one is waiting on circuit to open
    - Big Different: send pieces of packages, not one whole

- Packet, Message
- Store-and-Forward
- Cloud
- Hosts
- Switches
- Internetwork
- Router/Gateway
- Host-to-host connectivity
- Address
- Routing
- Unicast/Broadcast/Multicast

September 03, 2018

September 05, 2018