

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 pattern? (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....

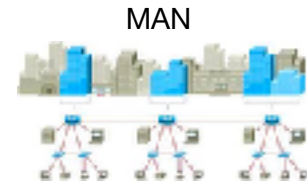
Defining a “Network”

- 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 (Metropolitan Area Network)
 - Like LAN but a bigger network

IE: LAN = home & WAN = School



“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

Types of Computer Networks



Wednesday, August 29, 2018

- 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

Wednesday, August 29, 2018