CSET 2200 Lecture 13

Review/Questions

Homework Question 3

DNS Review

- ▶ DNS is Hierachal
- ▶ Maps name to IP and IP to Name
- ▶ A records = hosts
- ▶ NS records delegate
- ▶ PTR records map IP to host

Tying it all together

- So far covered LAN
- Some WAN
- How do we tie them together

Internetworks

- Connecting individual networks
- Internet is the prime example
- Architecture has varied over the years

History of internetworks

- ▶ Ethernet long king for LAN
- ▶ How LAN connects has varied over years

Early days

- ▶ Slow links
- ▶ Expensive dedicate circuits
- ▶ Little redundancy

Getting more complex

- Links get faster
- Still largely dedicated
- Some virtual connections over dedicated

Modern days

- VPN slowly replacing dedicated circuits
- Ethernet taking over WAN/MAN circuits
- Common for many companies to only have internet

Connecting Internetworks

- ▶ We've discussed Layer 2 connections
- ▶ Routers connect layer 2 segments
    - ▶ This should be review

What is a router

- ▶ Essential specialized PC
- ▶ Has multiple network cards
- ▶ Makes decisions based on layer 3 data
- ▶ These days may be a switch too

How routers work

- ▶ Read packet
- ▶ Examine Layer header
- ▶ Examine Route table for destination network
- ▶ Resolve layer 2 address of next hop
- ▶ Forward Packet

Routing tables

- ▶ Route tables also called Routing Information Base
- ▶ Store Information needed to move packets
  - ▶ Destination Network
  - ▶ Destination Mask
  - ▶ Next Hop
  - ▶ Optional metric

How packets are routed

- Most specific match wins
- If tie, pick the lowest of highest metric

Default Route

- Route of 0.0.0.0/0
- Where packets get sent if no other match present
- Most hosts have ONLY default route

Questions

To summarize

- ▶ Networks link computers together
- ▶ Started as low speed links
- ▶ Over time got faster

OSI Model

- ▶ Physical
- ▶ Data Link
- ▶ Network
- ▶ Transport
- ▶ Session
- ▶ Presentation
- ▶ Application

TCP/IP Model

- ▶ Physical (Optional)
- ▶ Link
- ▶ Internet
- ▶ Transport
- ▶ Application

Next Session

- Summary (contd)