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)