

CIS 380/ENGR 465

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- Labs are done as a team of two people
- Each two people have a router and a switch
- You should also have:
 - A cable to connect your outside to my "net"
 - One or more Cisco "blue" cables
 - One or more Cisco Serial Cables
 - One old piece of junk computer

Lab Format

- Little Lecture
- Lots of work on building some different things and learning to manage them
- There is lots of room in the class for your add ons if you want them.

Class Format

- Cover the material for CCNA
- Cover any additional material we have time to do.

Objective

- Layer 1
- Layer 2
- Layer 3

Review of TCP/IP

- **IP Addresses and Subnets**

- Your Network is 10.0.0.0 subnetted into 255.255.0.0 currently. This is accessed via the port in front on the right side. (stage left)

Layer 3

- Solve some problems in class
- Book covers these in depth as well from the Cisco approach.

Layer 3 VLSM Review

- **ICMP Packets**

- PING – Request a response. A return packet is sent back and the turnaround time is noted.
 - Pings are mostly blocked in the world but are widely used locally to test.
- Tracert/traceroute – send a icmp packet out with a limited TTL. Each hop increment ttl up one. This allows the packet to hop one further step. Document the replies with times and ip stamps to build a map of the path.

TCP Reviews

- 172.16.x.x
- 10.x.x.x
- 192.168.x.x
- CIDR – classless interdomain routing

TCP Reviews

- Converting decimal to binary to hex
- Converting hex to binary to decimal

Quick Hex Review

- Virtual Design of Lab Environment for this problem.
- Your team is a single entity. Your entity is planning to put up a server and join the internet.
- Classroom – Work out the design of the network and map it out with subnets and ip schema.

Problem 1