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Switches

1. Define, compare and contrast hubs and switches.

- A hub splits Ethernet signals. It goes through every signal/pc connected to the hub.

- A switch splits Ethernet signals as well but only sends the appropriate data packets to computers through the switch. It can send signals to a variety of more computers. The switches figure out the computer connected through a MAC address.

2. On which OSI model layer, do switches reside?

-Layer 2

3. On which OSI model layer do hubs reside?

-Layer 1

4. What information does the first half of the MAC address contain?

-Provides identifier for the manufacturer of equipment

5. What information does the last half of the MAC address contain?

-Provides the social security/serial number

6. What access methodology does Ethernet utilize?

-It uses power over Ethernet methodology. It does not only send data but also sends power to devices and computers.

7. Briefly explain the difference between managed and unmanaged switches.

-Both deal with how much it can configure the brainpower inside the switch.

-Managed Switches: The switchboard can be hardcoded or automatic for configuration. Allows you go in a switch and manually set configurations. E.G. SPEED, DUPLEX, CLASS OF SERIVCE.

-Unmanaged Switches: It automatically sets configurations.

8. Compare and contrast full and half duplex.

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-Both duplex decide whether or not devices/pc can talk or listen on a network at a same time

-Half duplex: Can only talk or listen one moment at a time

-Full duplex: Full duplex you can talk or listen between devices at the same time, e.g. mobile phone.

9. What is a VLAN? Briefly describe its function.

-Stands for Virtual Local Area Network, it allows you to separate the ports on a switch into different networks. Mostly used in managed switches.

10. What is QOS? Briefly describe an environment where it would be useful?

-Quality of Service prioritizes packets based on what packets are being sent between devices over a network.

11. What is the spanning tree protocol? What problem does it prevent?

-STP is used by switches, it allows the switches to talk to each other and be able to route packets the fastest way possible between multiple switches. It prevents from having router loops.