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Computer Networks
Assignment 4: HW Hands on Link Layer

1.) The entries are as follows:
port VLAN MAC Age
port VLAN MAC Age

2.) The links that saw the frame from b to e include:
- b-s1 first
- s1-s2 second
- a-s1 third
- d-s2 fourth
- e-s1 fifth

3.) The s1-s2 link included the 802.1Q frame header, and the value of the ID is 25.
4.) The entries are as follows:
port VLAN MAC Age
port VLAN MAC Age
5.) The links that saw the frame from e to b include:
- e-s2 first
- d-s2 second
- a-s1 third
- s1-s2 fourth
- b-s1 fifth

6.) The entries are as follows:
port VLAN MAC Age
port VLAN MAC Age

7.) The difference between host b pinging host e and host c is that pinging e with 5 packets ran successfully while pinging c yielded an “Destination Host Unreachable” error. The reason that host b and e are a part of VLAN 25, whereas host c is in VLAN 30. This means that even though e is not a part of host b’s LAN (determined separately by switch s2 and s1), it can still get pinged by b since it’s in the same group. However, even though host c is on the same LAN as b (determined by switch s1), it cannot be pinged by b since it’s on a different VLAN.

8.) Yes, the outcome is different in that host b pinging host c also ran successfully as it did with pinging b with 5 packets. The reason is that now none of the hosts are specified with VLAN grouping, and rather are left up to the LANs they’re a part of and physical connections between switches. We see that while hosts b and e are not a part of the same LAN, b can still ping e since its respective s1 and s2 switches are connected. This allows access to reach the network e is in. As for hosts b and c in this configuration, they

are a part of the same LAN, and with no other VLAN specifications, they can reach each other since they’re in the same network.