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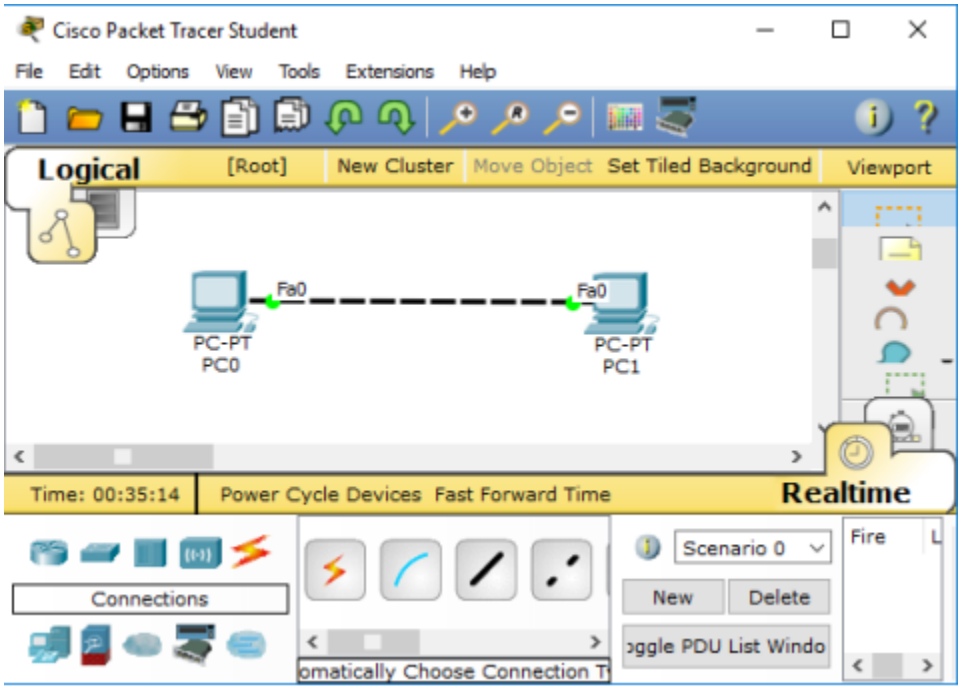
Amrita School of Engineering, Amritapuri
Amrita Center for Wireless Networks and Applications
First Semester - MTech WNA
21WN602 Advanced Computer Networks
Final Lab Examination, Feb 2023

Duration: 3 Hours Max. Marks: 50

1. Find the attached capture file. Open it in Wireshark (10 marks)
    a. Name the protocols shown in capture pane
    b. Explain the meaning/significance of the captured packets (process by process). [**Hint: This is a capture of a Skype conversation!**]
2. Prepare Wireshark to Capture Packets (10 marks)
    a. Ping www.ieee.org
    b. Answer the following questions and provide appropriate screenshots
        i. Source port and destination port of the first DNS packet
        ii. Draw the UDP header according to your capture
3. Packet tracer (30 marks)
    a. Configure a simple network comprising of two computers interconnected by an Ethernet cable

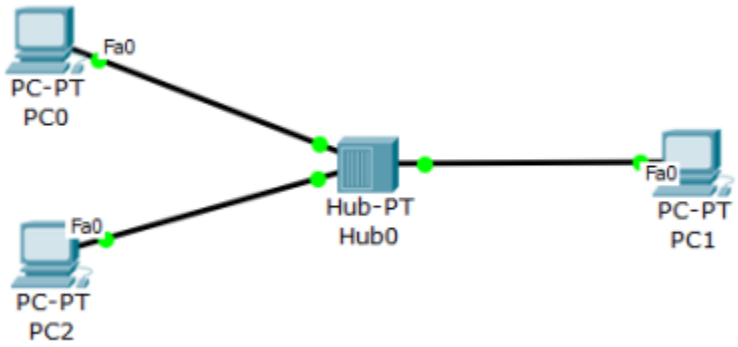


    b. Assign IP address and Subnet mask for PC 0. Submit screenshot of output of "ipconfig".

c. Assign IP address and Subnet mask for PC 1. Submit screenshot of output of "ipconfig".

d. On computer PC0, verify that there is network connectivity to PC1 by pinging the IP address of PC1. Submit screenshot of the result of "ping".

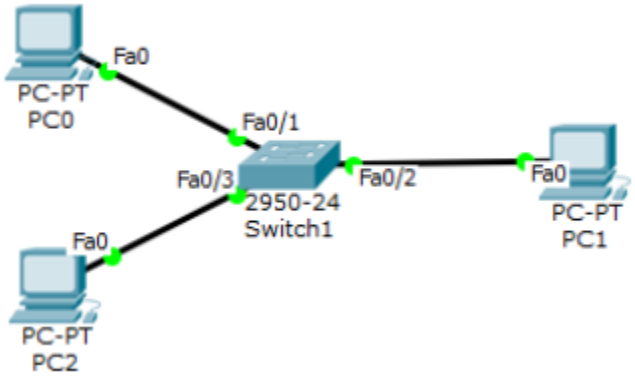
e. Modify the network by adding a third computer PC2 and interconnecting the three computers using an Ethernet hub and three Ethernet cables shown below.



f. Configure PC2. Verify that computer PC2 can ping the IP addresses of PC0 and PC1. Submit a screenshot of the result.

g. Observe how the hub always replicates incoming packets out of all other ports by clicking "Simulation tab" and "Auto Capture/Play" button while pinging PC1 from PC0. Submit a screenshot showing that that the hub is sending a replicated copy from PC0 to PC1 and PC2.

h. Modify the network by replacing the hub with an Ethernet switch shown below



i. Observe how the switch replicate packets only when necessary, by clicking "Simulation tab" and "Auto Capture/Play" button while pinging PC1 from PC0. Submit a screenshot showing where the switch forwards the packet.