Protocol Visualization with Packet Tracer (Continue)

Learning Objectives:

1.   Examine a device configuration
2.   Review the standard lab setup
3.   Overview the devices
4.   Get better understanding on every applications configured in the exercise

With reference to the previous lab setup (refer Lab 3), answer **ALL** of the following questions.

1.   Briefly describe the function of the following application layer protocols:
        a)   HTTP
        b)   HTTPS
        c)   DHCP
        d)   DNS
        e)   SMTP

2.   Under Simulation Mode, click Dynamic 1, then Command Prompt (on Desktop Tab, then execute *ipconfig/release*, then *ipconfig/renew*. Click **Auto Capture/Play** until Packet Tracer finishes the simulation (or reach Buffer Full Status). On the Simulation panel, look for the frame DHCP 172.16.0.10/16 (Last Device column) and Switch 1 (At Device column). Click Outbound PDU details at the PDU information.

	Answer
Preamble	
Source MAC address	
Destination MAC address	
Type field value	
Source IP address	
Destination IP address	

        a)   A connection-oriented communication is where the sender and receiver must prearrange for communications to occur, otherwise communications fails. Connectionless services do not prearrange for communications to occur. Connection-oriented services use TCP as its transport layer protocol whereas connectionless services use UDP. Is DHCP a connection-oriented service or a connectionless service? Is DHCP running TCP or UDP services? What is the source port used by DHCP servers?
        b)   From the five application protocols under this study, identify the three protocols using TCP services.

3.   Under Simulation Mode, click Dynamic 2, then Command Prompt (on Desktop tap), then type the URL http://www.example.com on the web browser. Similarly, do the same for Static PC, typing in https://www.example.com. Click **Auto Capture/Play** until Packet Tracer finishes simulation (or reach Buffer Full Status).

     a)   Before the interaction of the clients using HTTP and HTTPS, what protocol was used first?

     b)   What is the source port used by HTTP servers? HTTPS servers?

     c)   Look at any PDU information containing an HTTP frame and PDU information containing HTTPS frame. Look at the difference between the data stored via HTTP with that of HTTPS.

4.   Under Simulation Mode, click Dynamic 1, then send email on one of the other client computers. Click **Auto Capture/Play** until Packet Tracer finishes the simulation (or reach Buffer Full Status).

     a)   Before the interaction of the clients using SMTP, what protocol was used first?

     b)   What is the source port used by servers running SMTP?

5.   By identifying the protocols services by TCP and UDP, identify three fields present in TCP that are not found in UDP.

6.   Perform a ping from Dynamic 1 to Dynamic 2 under Simulation Mode.
Note: Before doing a ping, type in **arp –d** at the command prompt of Dynamic 1 and execute **arp –a** after. Internet address and physical address must be empty after typing **arp –a**

     a)   Before the interaction of the clients with ping, what protocol was used first?

     b)   Execute arp –a after the successful ping. Write down the internet address and physical address on Dynamic 1

     c)   Analyze the first ICMP frame and complete the table below:

	Answer
Source IP address	
Destination IP address	
ICMP Type value	
ICMP Code value	
Source Ethernet Address	
Internet Protocol Version	
Time to Live (TTL) value	