

## Step 2: Generate web (HTTP) traffic.

D .Click **Capture/Forward** four times. There should be four events in the Event List.

Look at the Web Client web browser page. Did anything change?

- The webpage is successfully opened



## Step 3: Explore the contents of the HTTP packet.

- b. Ensure that the **OSI Model** tab is selected. Under the **Out Layers** column, ensure that the **Layer 7** box is highlighted.

What is the text displayed next to the **Layer 7** label?

- HTTP

What information is listed in the numbered steps directly below the **In Layers** and **Out Layers** boxes?

- In Layer : no information
- Out Layer : information about layer 7-HTTP  
Layer 4 –TCP Src Port and Dst Port  
Layer 3 –IP Header Src and Dest IP  
Layer 2 –Ethernet II Header  
Layer 1 -Port

- c. Click **Next Layer**. Layer 4 should be highlighted. What is the **Dst Port** value?
- 80
- d. Click **Next Layer**. Layer 3 should be highlighted. What is the **Dest. IP** value?
- 192.168.1.254
- e. Click **Next Layer**. What information is displayed at this layer?
- Next-hop Mac address = 0060.47CA.4DEE >> 0001.96A9.401D

- f. Click the **Outbound PDU Details** tab.

Information listed under the **PDU Details** is reflective of the layers within the TCP/IP model.

**Note:** The information listed under the **Ethernet II** section provides even more detailed information than is listed under Layer 2 on the **OSI Model** tab. The **Outbound PDU Details** provides more descriptive and detailed information. The values under **DEST MAC** and **SRC MAC** within the **Ethernet II** section of the **PDU Details** appear on the **OSI Model** tab under Layer 2, but are not identified as such.

What is the common information listed under the **IP** section of **PDU Details** as compared to the information listed under the **OSI Model** tab? With which layer is it associated?

- SRC IP and DEST IP associated or related with layer 3.

What is the common information listed under the **TCP** section of **PDU Details**, as compared to the information listed under the **OSI Model** tab, and with which layer is it associated?

- SRC PORT and DST PORT associated with layer 4.

What is the **Host** listed under the **HTTP** section of the **PDU Details**? What layer would this information be associated with under the **OSI Model** tab?

- Host: [www.osi.local](http://www.osi.local) associated with layer 7.

- h. Advance to the next HTTP **Info** box within the **Event List** and click the colored square box. This window contains both **In Layers** and **Out Layers**. Notice the direction of the arrow directly under the **In Layers** column; it is pointing upward, indicating the direction the information is travelling. Scroll through these layers making note of the items previously viewed. At the top of the column the arrow points to the right. This denotes that the server is now sending the information back to the client.

Comparing the information displayed in the **In Layers** column with that of the **Out Layers** column, what are the major differences?

- SRC PORT and DST PORT inverted change
- SRC IP and DST IP inverted change
- Layer 2 mac address inverted change

- i. Click the **Outbound PDU Details** tab. Scroll down to the **HTTP** section.

What is the first line in the HTTP message that displays?

- HTTP/1.1 200 OK

- j. Click the last colored square box under the **Info** column. How many tabs are displayed with this event and why?

- 2 tabs because the data reached its destination and would not be moving again

## Part 2: Display Elements of the TCP/IP Protocol Suite

### Step 1: View Additional Events

- b. In the Event List Filters > Visible Events section, click **Show All**.

What additional Event Types are displayed?

- TCP, DNS, ARP

- d. Click the **Outbound PDU Details** tab. What information is listed in the **NAME:** in the DNS QUERY section?

- NAME: www.osi.local

- e. Click the last DNS **Info** colored square box in the event list. Which device is displayed?

- The Client

What is the value listed next to **ADDRESS:** in the DNS ANSWER section of the **Inbound PDU Details**?

- ADDRESS: 192.168.1.254

- f. Find the first **HTTP** event in the list and click the colored square box of the **TCP** event immediately following this event. Highlight **Layer 4** in the **OSI Model** tab. In the numbered list directly below the **In Layers** and **Out Layers**, what is the information displayed under items 4 and 5?

- The state of connection and data transfer

TCP manages the connecting and disconnecting of the communications channel along with other responsibilities. This particular event shows that the communication channel has been ESTABLISHED.

- g. Click the last TCP event. Highlight Layer 4 in the **OSI Model** tab. Examine the steps listed directly below **In Layers** and **Out Layers**. What is the purpose of this event, based on the information provided in the last item in the list (should be item 4)?
- To show when the connection ends

## Challenge

This simulation provided an example of a web session between a client and a server on a local area network (LAN). The client makes requests to specific services running on the server. The server must be set up to listen on specific ports for a client request. (Hint: Look at Layer 4 in the **OSI Model** tab for port information.)

Based on the information that was inspected during the Packet Tracer capture, what port number is the **Web Server** listening on for the web request?

- Port 80

What port is the **Web Server** listening on for a DNS request?

- Port 53