Computer Networking Lab

Assignment No 04.

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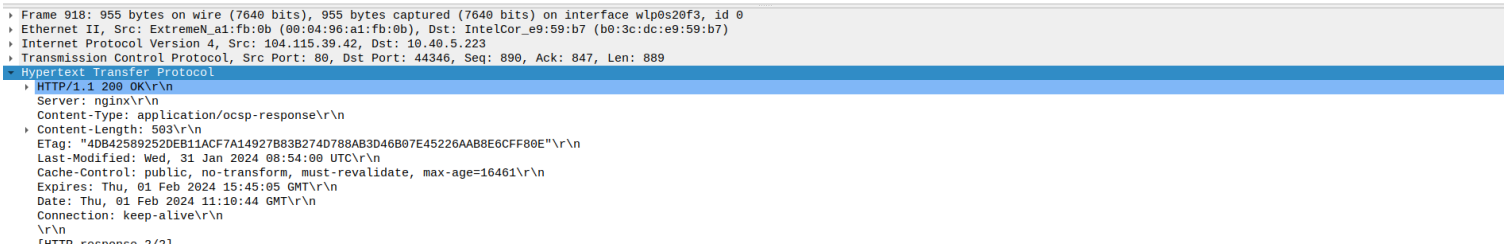
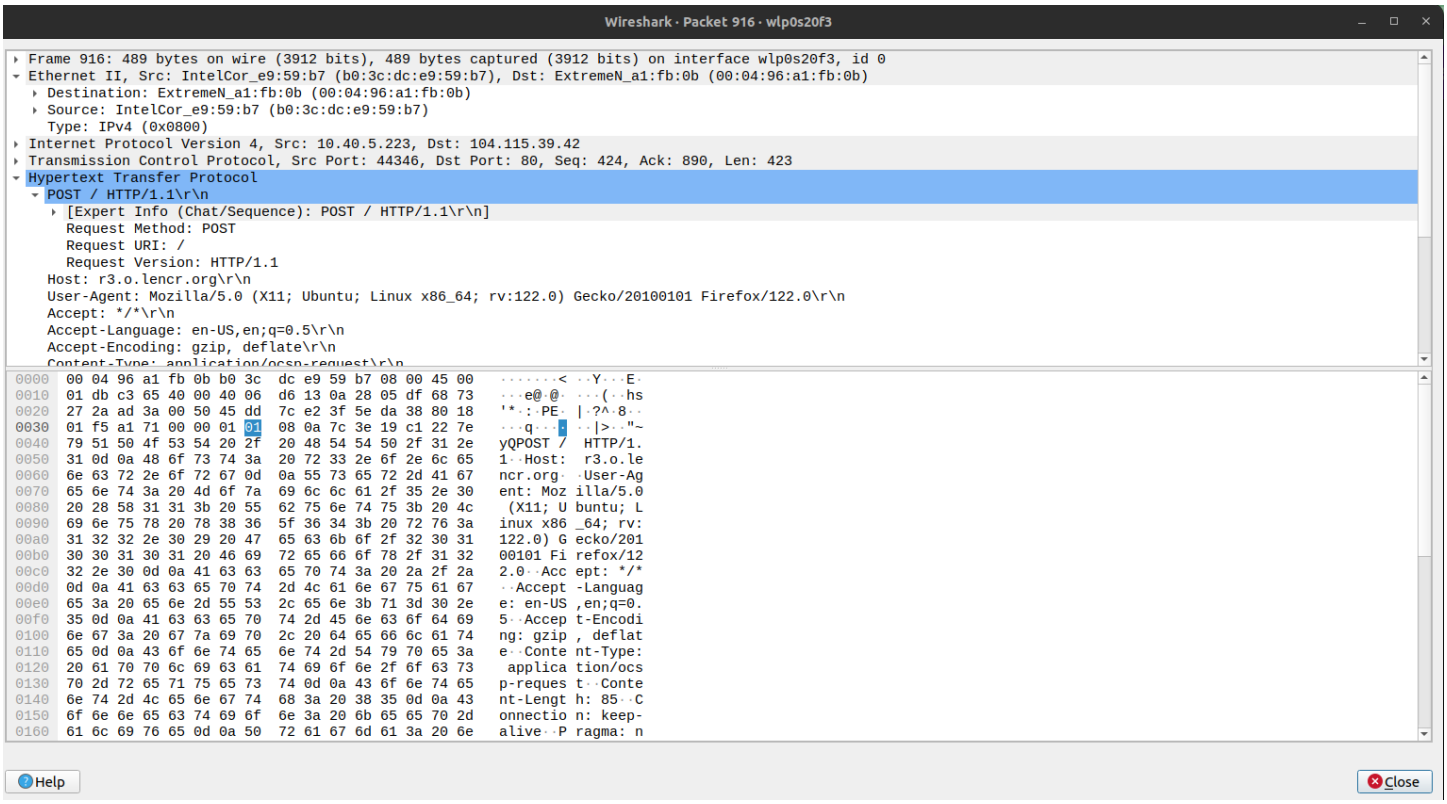
Wireshark Lab: Ethernet





1. What is the 48-bit Ethernet address of your computer?

- The 48-bit Ethernet address (MAC address) of my computer is b0:3c:dc:e9:59:b7.

2. What is the 48-bit destination address in the Ethernet frame? Is this the Ethernet address of www.google.com?

- The 48-bit destination address in the Ethernet frame is 00:04:96:a1:fb:0b. This is not the Ethernet address of www.google.com.

3. What device has this as its Ethernet address?

- The device with the MAC address 00:04:96:a1:fb:0b is identified as ExtremeN_a1:fb:0b.

4. Give the hexadecimal value for the two-byte Frame type field. What upper layer protocol does this correspond to?

- The hexadecimal value for the two-byte Frame type field is 0x0800, which corresponds to the upper-layer protocol IPv4.

5. How many bytes from the very start of the Ethernet frame does the ASCII “G” in “GET” appear in the Ethernet frame? Next, answer the following questions, based on the contents of the Ethernet frame containing the first byte of the HTTP response message.

- The ASCII "P" in "POST" appears 34 bytes from the very start of the Ethernet frame containing the HTTP response message.

5. What is the value of the Ethernet source address? Is this the address of your computer, or of www.google.com(Hint: the answer is no). What device has this as its Ethernet address?

- Ethernet source address is 00:04:96:a1:fb:0b. This is not the address of your computer, nor is it the address of www.google.com.

6. What is the destination address in the Ethernet frame? Is this the Ethernet address of your computer?

- The destination address in the Ethernet frame is b0:3c:dc:e9:59:b7.
- wlp0s20f3 (Wi-Fi interface): MAC Address: b0:3c:dc:e9:59:b7

  AS BOTH ARE THE SAME, IT IS THE ADDRESS OF MY COMPUTER!

7. Give the hexadecimal value for the two-byte Frame type field. What upper layer protocol does this correspond to?

- The hexadecimal value for the two-byte Frame type field is 0x0800. This corresponds to the upper-layer protocol IPv4. In Ethernet frames, the Frame type field indicates the type of the payload encapsulated within the frame. In this case, 0x0800 indicates that the payload is an IPv4 packet.

8. How many bytes from the very start of the Ethernet frame does the ASCII “O” in “OK” (i.e., the HTTP response code) appear in the Ethernet frame?

- To determine the position of the ASCII "O" in "OK" within the Ethernet frame, we need to examine the payload of the Ethernet frame containing the HTTP response message. Based on the provided output, the payload of the Ethernet frame starts at byte offset 0x46.

Scanning through the payload, we find the ASCII "O" in "OK" at byte offset 0x47 within the payload. However, to determine the byte offset from the very start of the Ethernet frame, we need to add the byte offset of the payload within the frame to the byte offset of the "O" within the payload. The byte offset of the payload within the Ethernet frame is 0x46, and the byte offset of the "O" within the payload is 0x47. Therefore, the total byte offset from the very start of the Ethernet frame to the ASCII "O" in "OK" is 0x46 + 0x47 = 0x8D. So, the ASCII "O" in "OK" appears 141 bytes from the very start of the Ethernet frame.