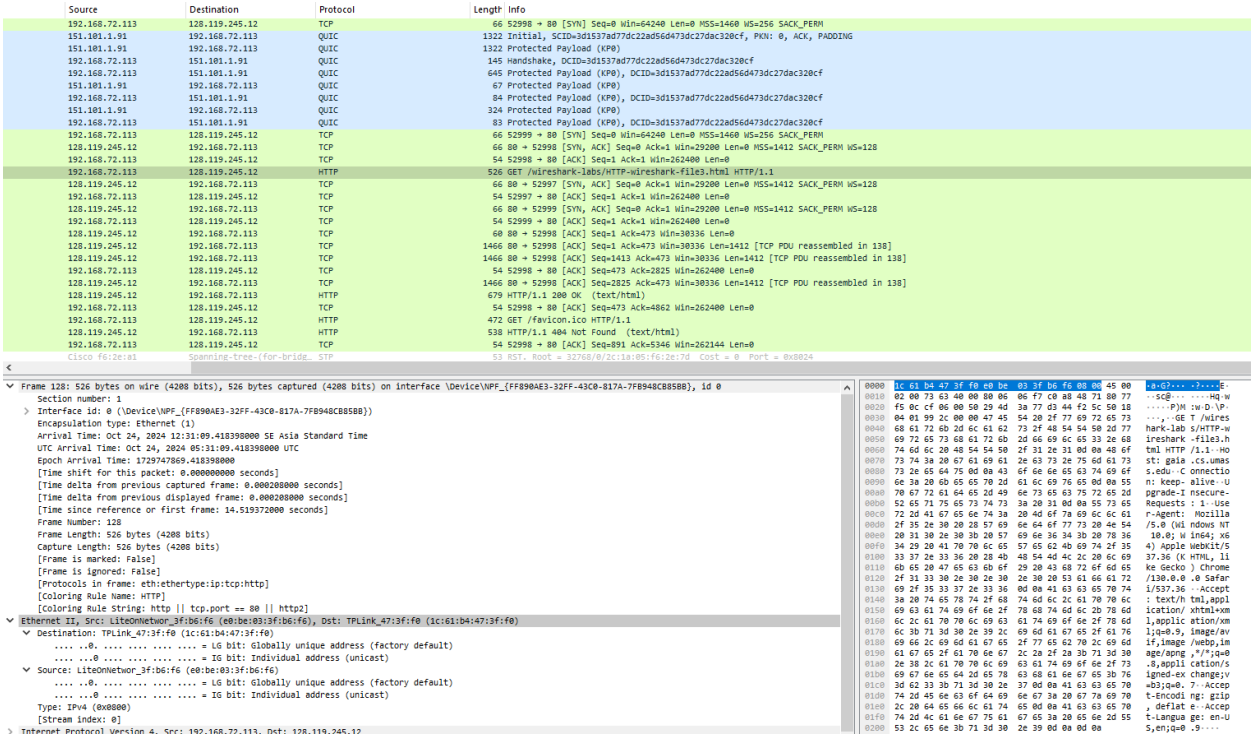

1. What is the 48-bit Ethernet address of your computer?

Ans: My 48-bit Ethernet address of my computer is = e0:be:03:3f:b6:f6

2. What is the 48-bit destination address in the Ethernet frame? Is this the Ethernet address of gaia.cs.umass.edu? (Hint: the answer is *no*). What device has this as its Ethernet address? [Note: this is an important question, and one that students sometimes get wrong. Re-read pages 483-484 in the text and make sure you understand the answer here.]

Ans: According to the figure above, the destination address is 1c:61:b4:47:3f:f0.This address is not the ethernet address of gaia.cs.umass.edu , it is the address of TP Link router

3. What is the hexadecimal value for the two-byte Frame type field in the Ethernet frame carrying the HTTP GET request? What upper layer protocol does this correspond to?

Ans: The hexadecimal value for the two-byte Frame type field is Type : IPv4 (0x0800) . This corresponds to IP protocol version 4.

4. How many bytes from the very start of the Ethernet frame does the ASCII "G" in "GET" appear in the Ethernet frame? Do not count any preamble bits in your count, i.e., assume that the Ethernet frame begins with the Ethernet frame's destination address

Ans: The G in the GET appears 54 bits into the frame.

5. What is the value of the Ethernet source address? Is this the address of your computer, or of gaia.cs.umass.edu (Hint: the answer is *no*). What device has this as its Ethernet address?

Ans: e0:be:03:3f:b6:f6 . It is the address of my router.

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

Ans: 1c:61:b4:47:3f:f0 . Yes, 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?

Ans: The hex value is 0x0800 , corresponds to the IP protocol.

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? Do not count any preamble bits in your count, i.e., assume that the Ethernet frame begins with the Ethernet frame's destination address.

Ans: 14 bytes appear in the Ethernet frame

9. How many Ethernet frames (each containing an IP datagram, each containing a TCP segment) carry data that is part of the complete HTTP “OK 200 ...” reply message?

Ans: The number of Ethernet frames carrying data from the complete HTTP "OK 200..." reply message depends on the size of the message and the MTU of the network. In most cases, a single TCP segment can fit into one IP datagram and one Ethernet frame, so the answer is 1.