Trường Đại Học Bách Khoa Tp.Hồ Chí Minh
Khoa Khoa Học và Kỹ Thuật Máy Tính

ĐẠI HỌC QUỐC GIA TP. HỒ CHÍ MINH

TRƯỜNG ĐẠI HỌC BÁCH KHOA

KHOA KHOA HỌC VÀ KỸ THUẬT MÁY TÍNH

BÁO CÁO

MẠNG MÁY TÍNH THỰC HÀNH (CO3094)

LAB 6

GV hướng dẫn: Bùi Xuân Giang

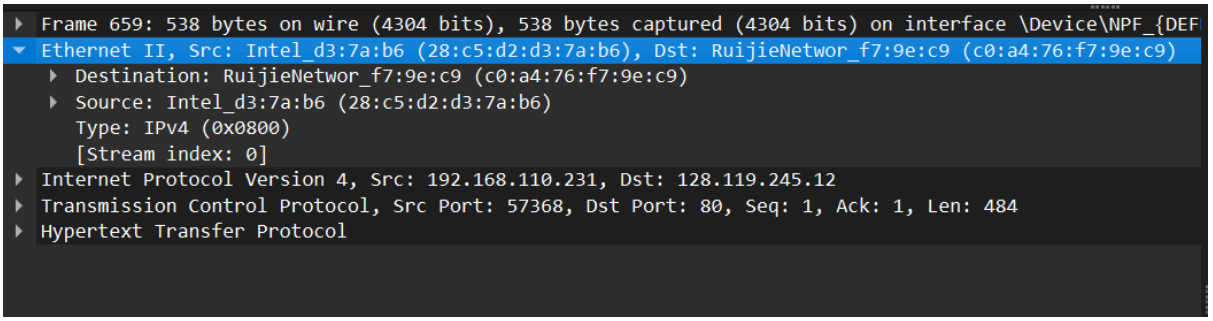
SV thực hiện: Trịnh Thị Mỹ Lệ

Thành phố Hồ Chí Minh, Tháng 3 năm 2025

1. Question 1

Question: What is the 48-bit Ethernet address of your computer?

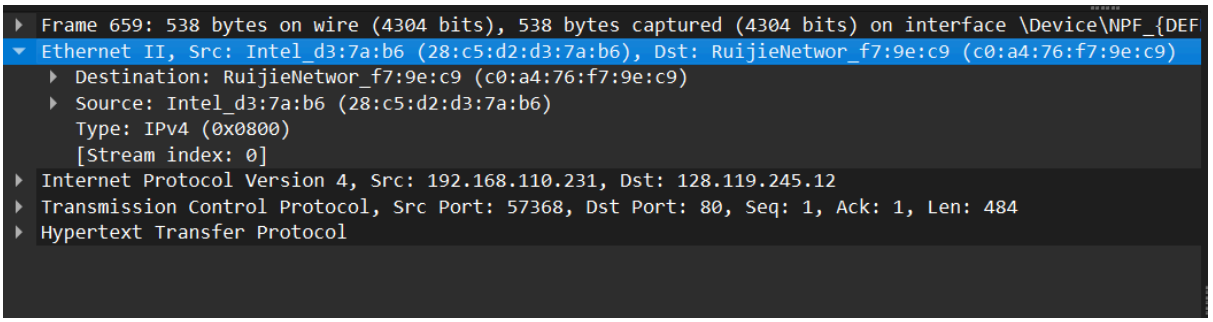
Answer: The Ethernet of my computer is (28:c5:d2:d3:7a:b6)



2. Question 2

Question: 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?

Answer: dst address is (c0:a4:76:f7:9e:c9). No, it is the address of my home router, which is the link used to gett off the subnet



3. Question 3

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

Answer:

- Hex value is 0x0800
- Upper layer protocol is IP

4. Question 4

Question: How many bytes from the very start of the Ethernet frame does the ASCII "G" in "GET" appear in the Ethernet frame?

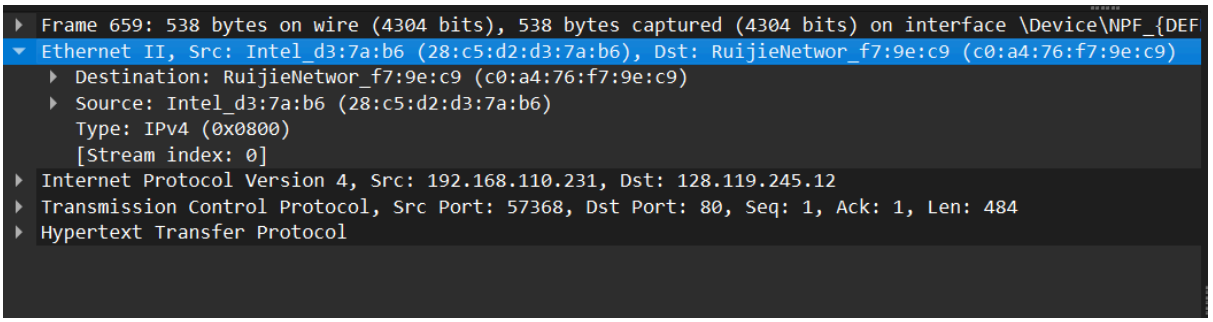
Answer: 48 bytes

5. Question 5

Question: 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?

Answer:

- 28:c5:d2:d3:7a:b6
- This address is not the address of my computer or gaia.cs.umass.edu. This is the address of my router.

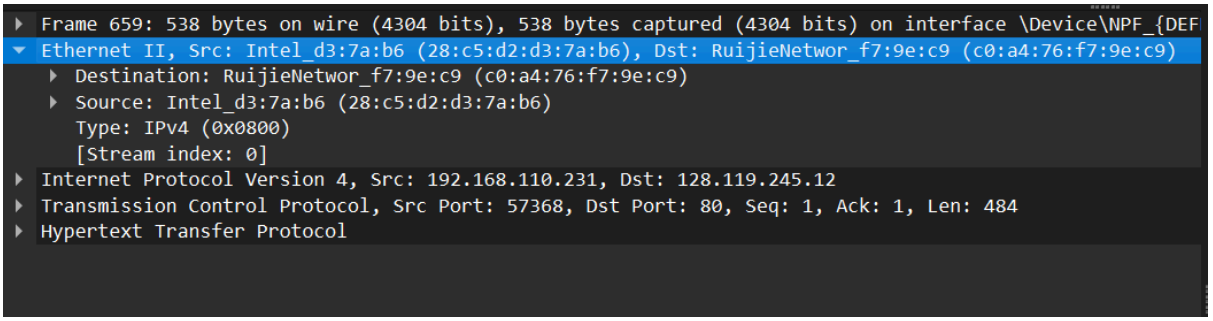


6. Question 6

Question: What is the destination address in the Ethernet frame? Is this the Ethernet address of your computer?

Answer:

- c0:a4:76:f7:9e:c9
- My own address



7. Question 7

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

Answer: 0x0800, corresponds to IPv4

8. Question 8

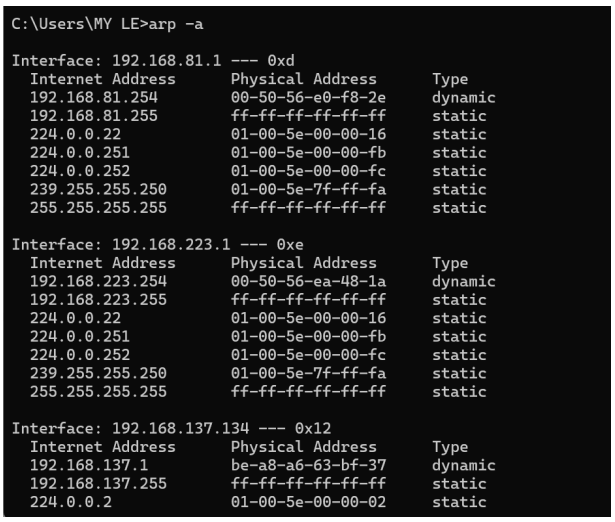
Question: How many bytes from the very start of the Ethernet frame does the ASCII “O” in “OK” (i.e., the HTTP response code) appear in the Ethernet frame?

Answer: 13 bytes

9. Question 9

Question: Write down the contents of your computer’s ARP cache. What is the meaning of each column value?

Answer: The Internet Address column contains the IP address, the Physical Address column contains the MAC address, and the type indicates the protocol type



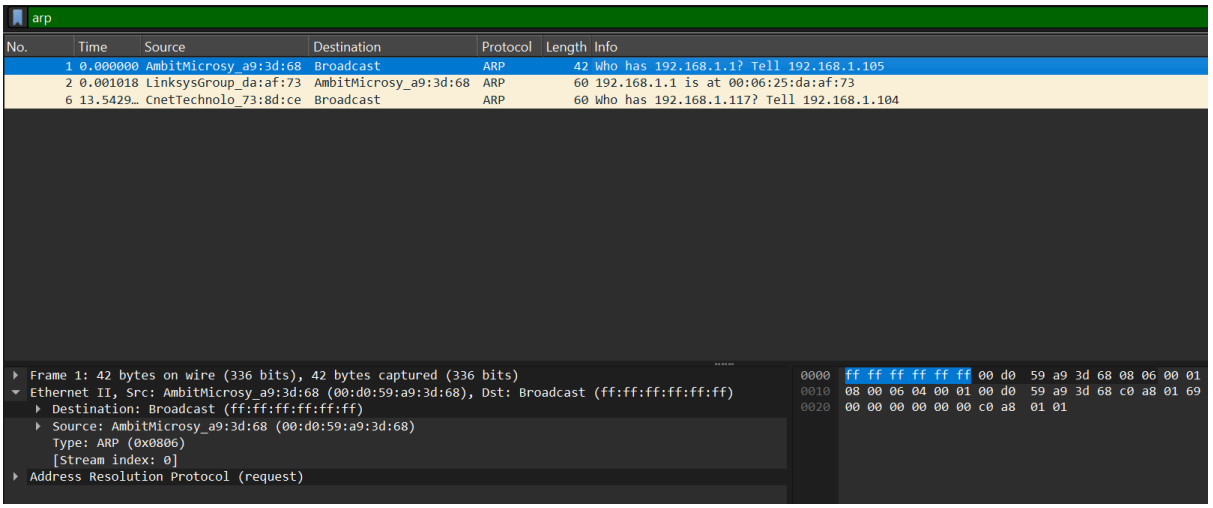
10. Question 10

Question: What are the hexadecimal values for the source and destination addresses in the Ethernet frame containing the ARP request message?

Answer:

src address: 00:d0:59:a9:3d:68

dst address: ff:ff:ff:ff:ff:ff



11. Question 11

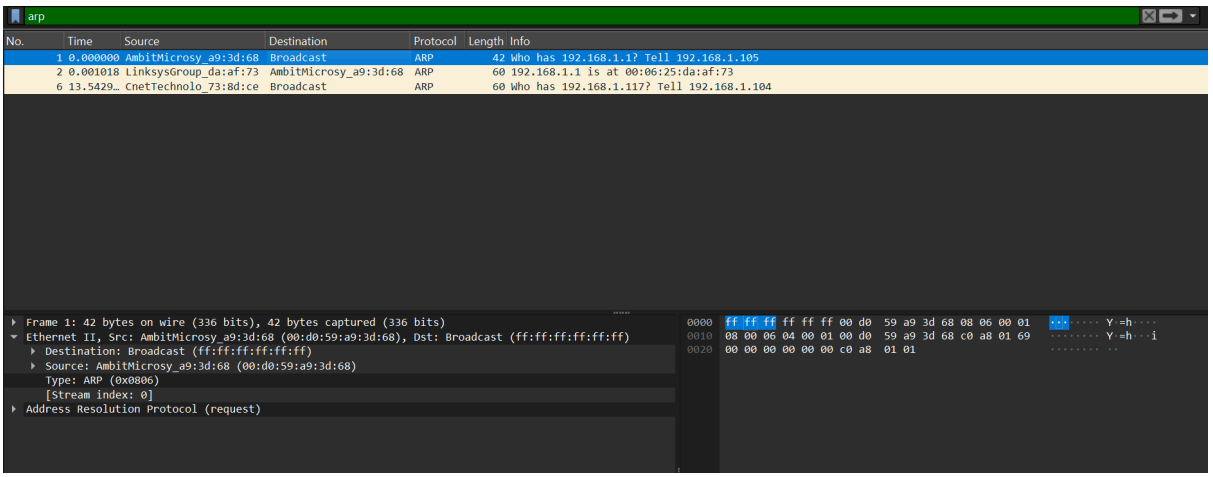
Question: Give the hexadecimal value for the two-byte Ethernet Frame type field. What upper layer protocol does this correspond to?

Answer: 0x0806

12. Question 12a

Question: How many bytes from the very beginning of the Ethernet frame does the ARP opcode field begin?

Answer: Ethernet 14 bytes



12. Question 12b

Question: What is the value of the opcode field within the ARP-payload part of the Ethernet frame in which an ARP request is made?

Answer: 00 01 (hex)

12. Question 12c

Question: Does the ARP message contain the IP address of the sender?

Answer: Yes, ARP message containing the IP address 192.168.1.105 for the sender

12. Question 12d

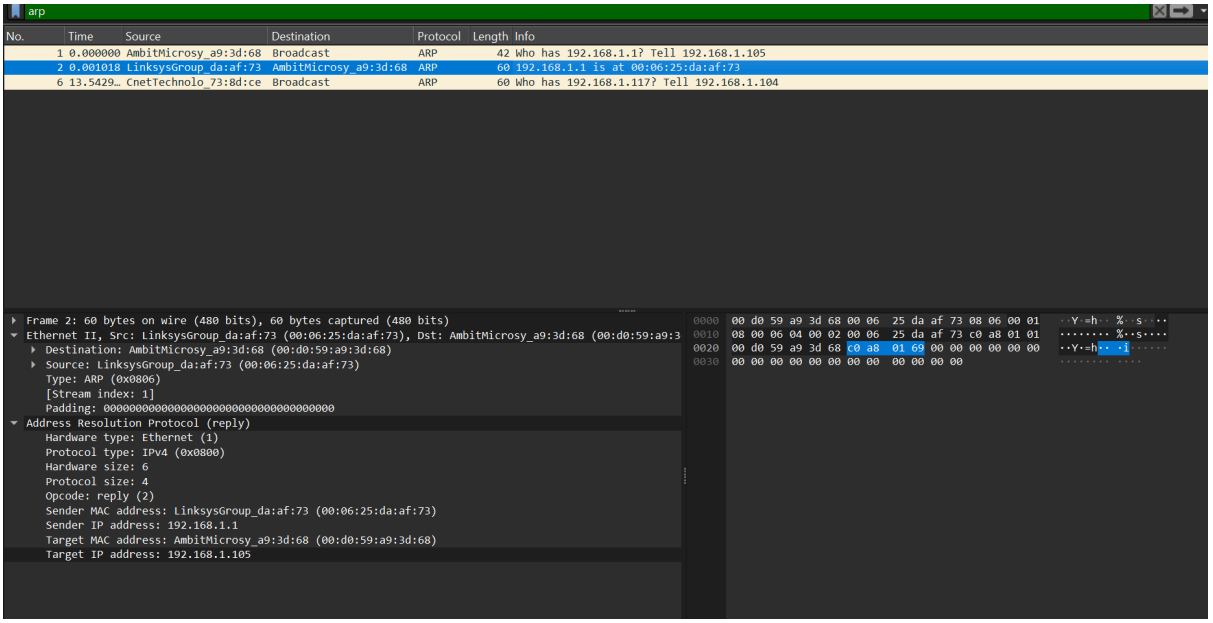
Question: Where in the ARP request does the “question” appear – the Ethernet address of the machine whose corresponding IP address is being queried?

Answer: Target IP address: 192.168.1.1

13. Question 13a

Question: How many bytes from the very beginning of the Ethernet frame does the ARP opcode field begin?

Answer: 14 bytes



13. Question 13b

Question: What is the value of the opcode field within the ARP-payload part of the Ethernet frame in which an ARP response is made?

Answer: 0x0002

13. Question 13c

Question: Where in the ARP message does the “answer” to the earlier ARP request appear – the IP address of the machine having the Ethernet address whose corresponding IP address is being queried?

Answer: Sender IP address: 192.168.1.105 and Sender MAC address: 00:06:25:da:af:73 does the “answer” to the earlier ARP request.

14. Question 14

Question: What are the hexadecimal values for the source and destination addresses in the Ethernet frame containing the ARP reply message?

Answer:

- Destination Address: 00:0b:59:a9:3d:68
- Source Address: 00:06:25:da:af:73

15. Question 15

Question: Why is there no ARP reply (sent in response to the ARP request in packet 6) in the packet trace?

Answer: Because the ARP request is broadcast, but the ARP reply is not broadcast. The reply will be sent to the computer who made the request directly