

WSA7

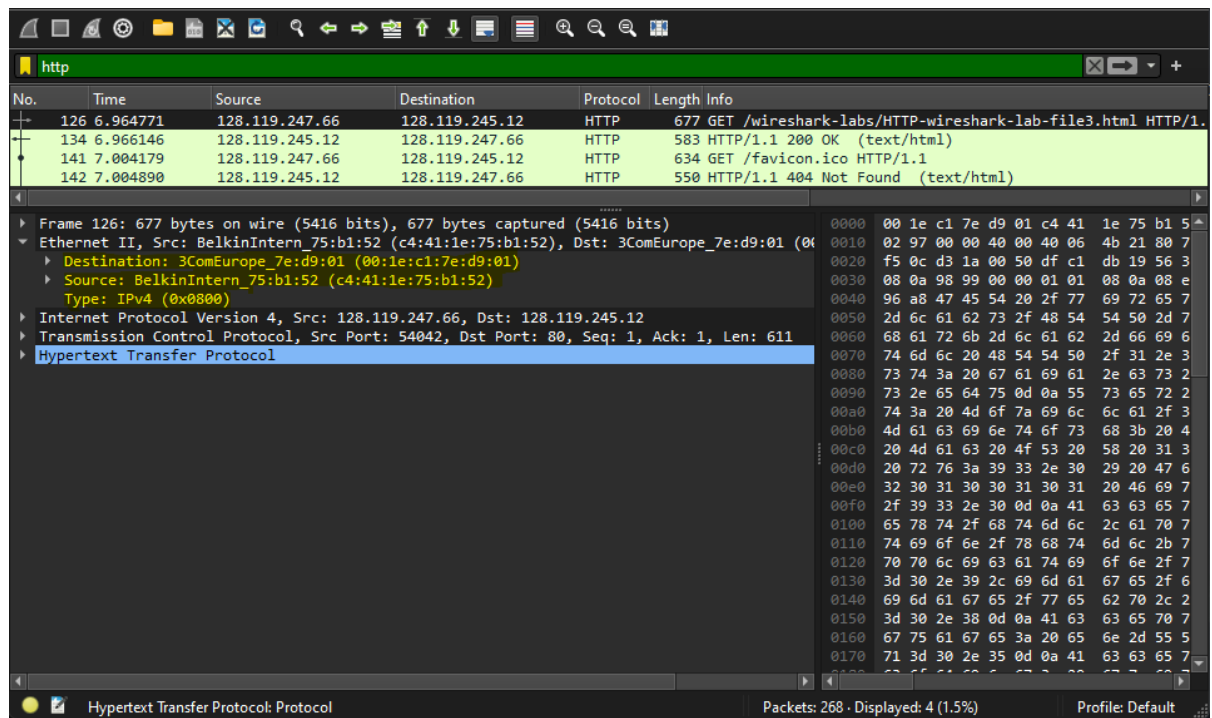
2448025

1. Source 48-bit Ethernet address: BelkinIntern_75:b1:52 (c4:41:1e:75:b1:52)

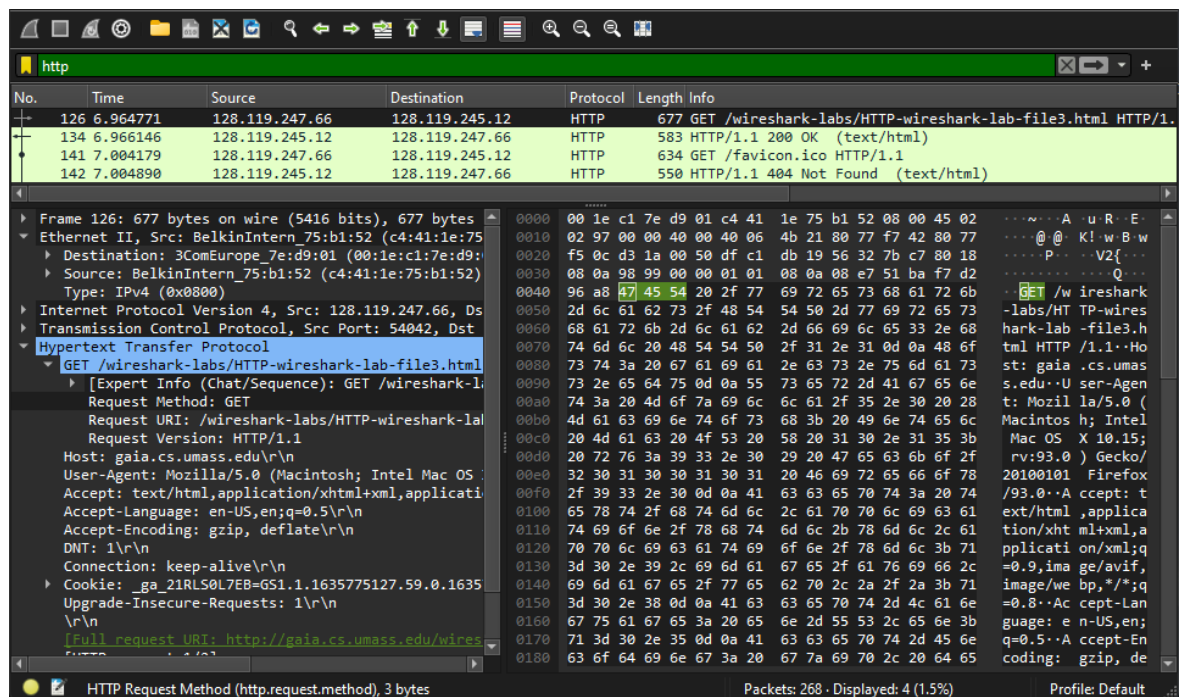
2. Destination 48-bit Ethernet address: 3ComEurope_7e:d9:01 (00:1e:c1:7e:d9:01)

No, the destination address is not the Ethernet address of gaia.cs.umass.edu. It is the address of 3ComEurope router.

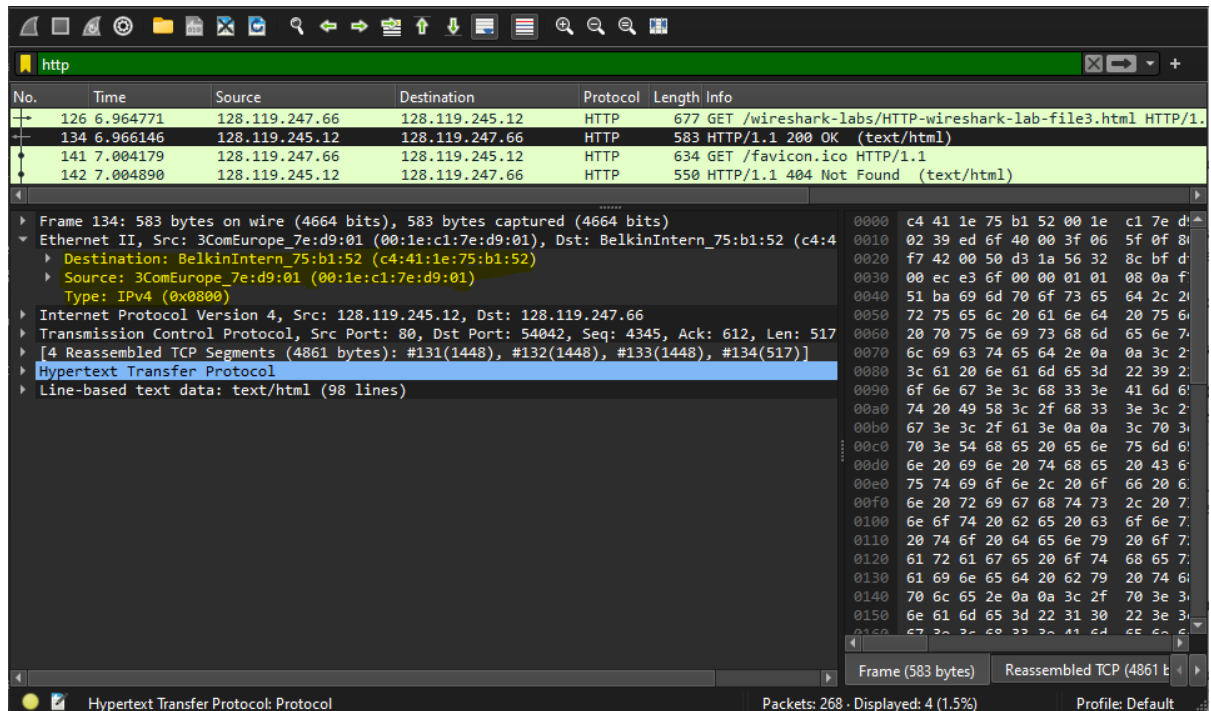
3. Hexadecimal Frame Type Value : 0x0800. This corresponds to IP protocol.



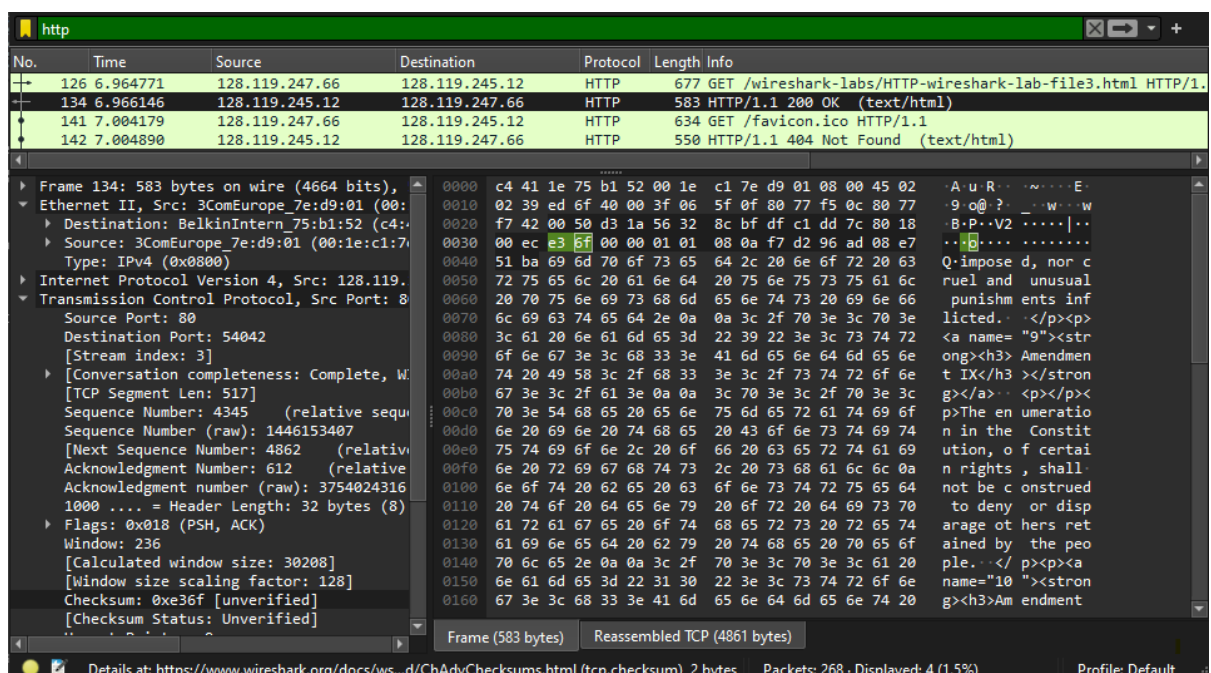
4. "G" appears 67 bytes from the beginning.



- Source 48-bit Ethernet address of response: 3ComEurope_7e:d9:01 (00:1e:c1:7e:d9:01)
No, source address is not the Ethernet address of gaia.cs.umass.edu and sending computer. It is the address of 3ComEurope Router.
- Destination 48-bit Ethernet address of response: BelkinIntern_75:b1:52 (c4:41:1e:75:b1:52)
This is the Ethernet address of sender.
- The hexadecimal Frame Type Value of response: 0x0800. This corresponds to IP protocol.



- "o" appears 52 bytes from the beginning.



9. 4 Ethernet Frames carry the data for “OK” reply message.

The screenshot shows a Wireshark packet capture of an HTTP transaction. The packet list at the top shows four packets related to the transaction. Packet 134 is the response, an OK status (200) for a GET request. The packet details pane for packet 134 shows the Ethernet II header, Internet Protocol Version 4 header, and Transmission Control Protocol header. The TCP segment is part of a reassembled stream. The Hypertext Transfer Protocol section shows the response is a text/html document.

No.	Time	Source	Destination	Protocol	Length	Info
126	6.964771	128.119.247.66	128.119.245.12	HTTP	677	GET /wireshark-labs/HTTP-wireshark-lab-file3.html HTTP/1.1
134	6.966146	128.119.245.12	128.119.247.66	HTTP	583	HTTP/1.1 200 OK (text/html)
141	7.004179	128.119.247.66	128.119.245.12	HTTP	634	GET /favicon.ico HTTP/1.1
142	7.004890	128.119.245.12	128.119.247.66	HTTP	550	HTTP/1.1 404 Not Found (text/html)

10. Source Address Hexadecimal Value: Apple_ac:ad:e1 (78:7b:8a:ac:ad:e1)

11. Destination Address Hexadecimal Value: Broadcast(ff:ff:ff:ff:ff:ff)

12. The hexadecimal Frame Type Value: 0x0806, for ARP.

The screenshot shows a Wireshark packet capture of ARP traffic. The packet list at the top shows several ARP requests. Packet 12 is an ARP request from Apple_ac:ad:e1 to the broadcast address. The packet details pane for packet 12 shows the Ethernet II header, ARP header, and the request data. The ARP header shows the source and target MAC addresses and the ARP type (0x0806).

No.	Time	Source	Destination	Protocol	Length	Info
7	0.342032	3ComEurope_7e:d9:01	Broadcast	ARP	60	Who has 128.119.247.9? Tell 128.119.247.1
12	0.598299	Apple_ac:ad:e1	Broadcast	ARP	60	Who has 169.254.1.0? Tell 128.119.247.79
13	0.722198	3ComEurope_7e:d9:01	Broadcast	ARP	60	Who has 128.119.247.86? Tell 128.119.247.1
14	0.810158	3ComEurope_7e:d9:01	Broadcast	ARP	60	Who has 128.119.247.31? Tell 128.119.247.1
15	0.813267	3ComEurope_7e:d9:01	Broadcast	ARP	60	Who has 128.119.247.19? Tell 128.119.247.1
16	0.814331	3ComEurope_7e:d9:01	Broadcast	ARP	60	Who has 128.119.247.9? Tell 128.119.247.1

13. The ARP opcode field begins 21 bytes from the beginning.

The screenshot shows a Wireshark packet capture of an ARP request. The packet list at the top shows several ARP packets. The selected packet (No. 12) is expanded, showing the following details:

- Frame 12: 60 bytes on wire (480 bits), 60 bytes captured (480 bits) on interface 0
- Ethernet II, Src: Apple_ac:ad:e1 (78:7b:8a:ac:ad:e1), Dst: Broadcast (ff:ff:ff:ff:ff:ff)
- Address Resolution Protocol (request)
 - Hardware type: Ethernet (1)
 - Protocol type: IPv4 (0x0800)
 - Hardware size: 6
 - Protocol size: 4
 - Opcode: request (1)
 - Sender MAC address: Apple_ac:ad:e1 (78:7b:8a:ac:ad:e1)
 - Sender IP address: 128.119.247.79
 - Target MAC address: Xerox_00:00:00 (00:00:00:00:00:00)
 - Target IP address: 169.254.1.0

The packet bytes pane shows the raw data of the packet, with the ARP opcode field (00 01) highlighted in green.

14. Yes, the sender IP address is : 128.119.247.79

15. The destination IP address is :169.254.1.0

The screenshot shows the same Wireshark packet capture as before, but with the details pane expanded further to show the ARP request details. The following fields are highlighted in yellow:

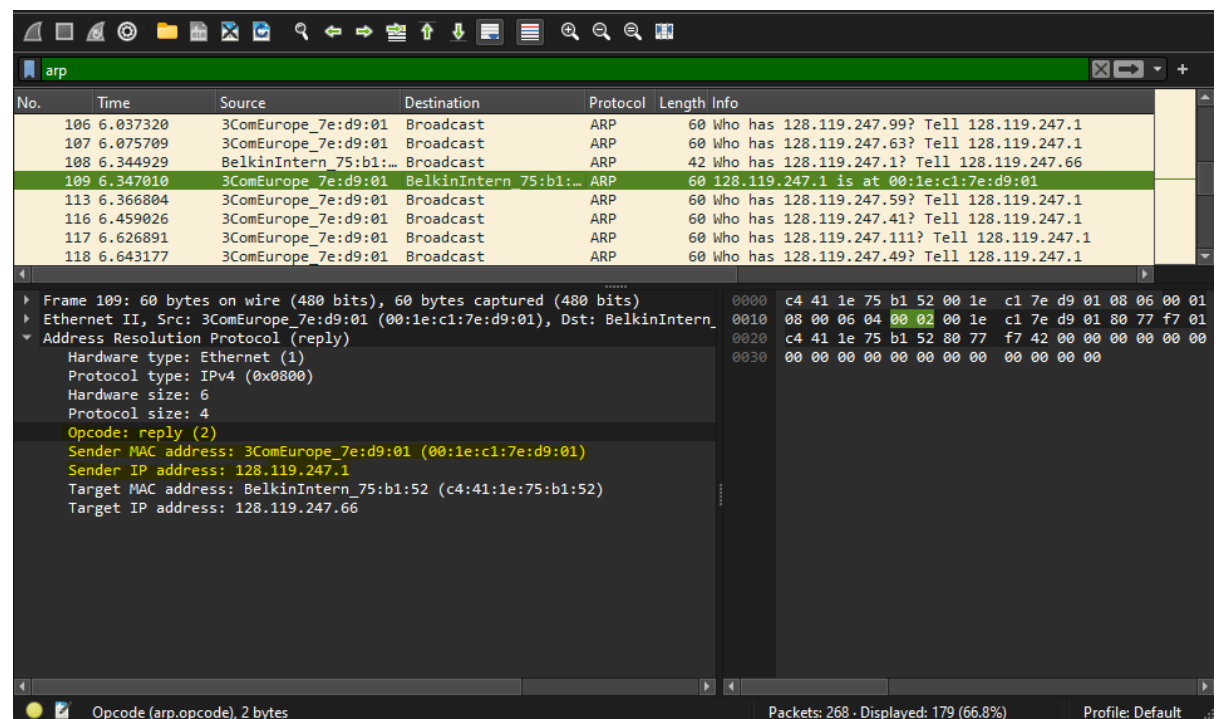
- Sender IP address: 128.119.247.79
- Target IP address: 169.254.1.0

The packet bytes pane shows the raw data of the packet, with the ARP opcode field (00 01) highlighted in green.

16. The ARP opcode value of the reply is : reply (2)

17. The ARP request message by computer has

Sender Ethernet Address: 3ComEurope_7e:d9:01 (00:1e:c1:7e:d9:01)



No.	Time	Source	Destination	Protocol	Length	Info
106	6.037320	3ComEurope_7e:d9:01	Broadcast	ARP	60	Who has 128.119.247.99? Tell 128.119.247.1
107	6.075709	3ComEurope_7e:d9:01	Broadcast	ARP	60	Who has 128.119.247.63? Tell 128.119.247.1
108	6.344929	BelkinIntern 75:b1:...	Broadcast	ARP	42	Who has 128.119.247.1? Tell 128.119.247.66
109	6.347010	3ComEurope_7e:d9:01	BelkinIntern 75:b1:...	ARP	60	128.119.247.1 is at 00:1e:c1:7e:d9:01
113	6.366804	3ComEurope_7e:d9:01	Broadcast	ARP	60	Who has 128.119.247.59? Tell 128.119.247.1
116	6.459026	3ComEurope_7e:d9:01	Broadcast	ARP	60	Who has 128.119.247.41? Tell 128.119.247.1
117	6.626891	3ComEurope_7e:d9:01	Broadcast	ARP	60	Who has 128.119.247.111? Tell 128.119.247.1
118	6.643177	3ComEurope_7e:d9:01	Broadcast	ARP	60	Who has 128.119.247.49? Tell 128.119.247.1

Frame 109: 60 bytes on wire (480 bits), 60 bytes captured (480 bits)	
Ethernet II, Src: 3ComEurope_7e:d9:01 (00:1e:c1:7e:d9:01), Dst: BelkinIntern_...	
Address Resolution Protocol (reply)	
Hardware type: Ethernet (1)	
Protocol type: IPv4 (0x0800)	
Hardware size: 6	
Protocol size: 4	
Opcode: reply (2)	
Sender MAC address: 3ComEurope_7e:d9:01 (00:1e:c1:7e:d9:01)	
Sender IP address: 128.119.247.1	
Target MAC address: BelkinIntern 75:b1:52 (c4:41:1e:75:b1:52)	
Target IP address: 128.119.247.66	

18. Since we are not at the machine that sent the request, there is no response in this trace. While the ARP reply is sent directly to the sender's Ethernet address, the ARP request is broadcast.