

# Anıl Eren Göçer – WSA7

## 1) Ethernet address of the sender = c4:41:1e:75:b1:52

```
+ 126 6.964771 128.119.247.66 128.119.245.12 HTTP 677 GET /wireshark-labs/HTTP-wireshark-lab-file3.html HTTP/1.1

> Frame 126: 677 bytes on wire (5416 bits), 677 bytes captured (5416 bits)
> Ethernet II, Src: BelkinIn_75:b1:52 (c4:41:1e:75:b1:52), Dst: 3ComEuro_7e:d9:01 (00:1e:c1:7e:d9:01)
  > Destination: 3ComEuro_7e:d9:01 (00:1e:c1:7e:d9:01)
  > Source: BelkinIn_75:b1:52 (c4:41:1e:75:b1:52)
    Address: BelkinIn_75:b1:52 (c4:41:1e:75:b1:52)
      .... ..0. .... = LG bit: Globally unique address (factory default)
      .... ..0. .... = IG bit: Individual address (unicast)
    Type: IPv4 (0x0800)
  > Internet Protocol Version 4, Src: 128.119.247.66, Dst: 128.119.245.12
  > Transmission Control Protocol, Src Port: 54042, Dst Port: 80, Seq: 1, Ack: 1, Len: 611
  > Hypertext Transfer Protocol
```

## 2) Destination address in the Ethernet frame = 00:1e:c1:7e:d9:01

No, this is not the Ethernet address of gaia.cs.umass.edu . This is the Ethernet address of the gateway router in the subnet of the sender. That is the router which enables packages from the sender to get off the subnet.

```
> Frame 126: 677 bytes on wire (5416 bits), 677 bytes captured (5416 bits)
> Ethernet II, Src: BelkinIn_75:b1:52 (c4:41:1e:75:b1:52), Dst: 3ComEuro_7e:d9:01 (00:1e:c1:7e:d9:01)
  > Destination: 3ComEuro_7e:d9:01 (00:1e:c1:7e:d9:01)
    Address: 3ComEuro_7e:d9:01 (00:1e:c1:7e:d9:01)
      .... ..0. .... = LG bit: Globally unique address (factory default)
      .... ..0. .... = IG bit: Individual address (unicast)
  > Source: BelkinIn_75:b1:52 (c4:41:1e:75:b1:52)
    Type: IPv4 (0x0800)
  > Internet Protocol Version 4, Src: 128.119.247.66, Dst: 128.119.245.12
  > Transmission Control Protocol, Src Port: 54042, Dst Port: 80, Seq: 1, Ack: 1, Len: 611
  > Hypertext Transfer Protocol
```

## 3) Hexadecimal value of the type field is 0x0800 and it corresponds to upper layer protocol IPv4.

```
> Frame 126: 677 bytes on wire (5416 bits), 677 bytes captured (5416 bits)
> Ethernet II, Src: BelkinIn_75:b1:52 (c4:41:1e:75:b1:52), Dst: 3ComEuro_7e:d9:01 (00:1e:c1:7e:d9:01)
  > Destination: 3ComEuro_7e:d9:01 (00:1e:c1:7e:d9:01)
  > Source: BelkinIn_75:b1:52 (c4:41:1e:75:b1:52)
    Type: IPv4 (0x0800)
  > Internet Protocol Version 4, Src: 128.119.247.66, Dst: 128.119.245.12
  > Transmission Control Protocol, Src Port: 54042, Dst Port: 80, Seq: 1, Ack: 1, Len: 611
  > Hypertext Transfer Protocol
```

- 4) There are 66 bytes until 'G' in "GET" :
  - 14 bytes coming from "Destination", "Source" and "Type" in Ethernet II.
  - 20 bytes coming from IPv4 header fields.
  - 32 bytes coming from TCP header fields.

```

0000 00 1e c1 7e d9 01 c4 41 1e 75 b1 52 08 00 45 02 .....A..u.R.E.
0010 02 97 0c 00 00 40 00 40 06 4b 21 80 77 f7 42 80 77 ...@.@.K!..w.B.W
0020 f5 0c d3 1a 0a 50 5f c1 db 19 56 32 7f c7 80 18 .....P...V2{...
0030 08 0a 98 99 00 00 01 01 08 0a 08 e7 51 ba f7 d2 .....Q...
0040 96 a8 47 45 54 20 2f 7f 69 72 65 73 68 61 72 6b ...GET /w ireshark
0050 2d 6f c1 62 73 2f 48 54 54 50 2d 7f 69 72 65 73 -labs/HT TP-wires
0060 68 61 72 6b 2d 6c 61 62 2d 66 69 6c 65 33 2e 68 hark-lab -file3.h
0070 74 6d 6c 20 48 54 50 5f 2f 31 2e 31 0d 0a 48 6f tml HTTP /1.1..Ho
0080 73 74 3a 20 67 61 69 61 2e 63 73 2e 75 6d 61 73 st: gaia .cs.umas
0090 73 2e 65 64 75 0d 0a 55 73 65 72 2d 41 67 65 6e s.edu..U ser-Agen
00a0 74 3a 20 4d 6f 7a 69 6f 6c 61 6f 2f 35 2e 30 28 t: Mozil la/5.0 (
00b0 4d 61 63 69 6e 7a 69 6f 73 68 3b 20 49 6e 74 65 c Macintos h; Intel
00c0 20 4d 61 63 20 4f 53 20 58 20 31 30 2e 31 35 3b Mac OS X 10.15;
00d0 20 72 76 3a 39 33 2e 30 29 20 47 65 63 6b 6f 2f rv:93.0 ) Gecko/
00e0 32 30 31 30 30 31 30 31 20 46 69 72 65 66 6f 78 000101 Firefox
00f0 2f 39 33 2e 30 0d 0a 41 63 63 65 70 74 3a 20 74 /93.0..A ccept: t
0100 65 78 74 2f 68 74 6d 6c 2c 61 70 70 6c 69 63 61 ext/html ,applica
0110 74 69 6f 6e 2f 78 68 74 6d 6c 2b 78 6d 6c 2c 61 tion/xht ml+xml,a
0120 70 70 6c 69 63 61 74 69 6f 6e 2f 78 6d 6c 3b 71 pplicati on/xml;q
0130 3d 30 2e 39 2c 69 6d 61 6f 65 2f 61 76 69 66 2c =0.9,ima ge/avif,
0140 69 6d 61 67 65 2f 77 65 62 70 2c 2a 2f 2a 3b 71 image=ve bp,*/*;q
0150 3d 30 2e 38 0d 0a 41 63 63 65 70 74 2d 4c 61 6e =0.8..Ac cept-Lan
0160 67 75 61 67 65 3a 20 65 6e 2d 55 53 2c 65 6e 3b guage: e n-US,en;
0170 71 3d 30 2e 35 0d 0a 41 63 65 70 74 2d 45 6e q=0.5..A ccept-En

```

No, this is not the address of the sending computer, or of `gaia.cs.umass.edu`. Similar to question 2, this is the Ethernet address of the gateway router in the subnet of client which sends HTTP request and gets HTTP response. That is the router which enables to get off the subnet

```
> Frame 134: 583 bytes on wire (4664 bits), 583 bytes captured (4664 bits)
> Ethernet II, Src: 3ComEuro_7e:d9:01 (00:1e:c1:7e:d9:01), Dst: BelkinIn_75:b1:52 (c4:41:1e:75:b1:52)
  > Destination: BelkinIn_75:b1:52 (c4:41:1e:75:b1:52)
  > Source: 3ComEuro_7e:d9:01 (00:1e:c1:7e:d9:01)
    Address: 3ComEuro_7e:d9:01 (00:1e:c1:7e:d9:01)
      .... ..0. .... = LG bit: Globally unique address (factory default)
      .... ..0. .... = IG bit: Individual address (unicast)
    Type: IPv4 (0x0800)
  > Internet Protocol Version 4, Src: 128.119.245.12, Dst: 128.119.247.66
  > Transmission Control Protocol, Src Port: 80, Dst Port: 54042, Seq: 4345, Ack: 612, Len: 517
  > [4 Reassembled TCP Segments (4861 bytes): #131(1448), #132(1448), #133(1448), #134(517)]
  > Hypertext Transfer Protocol
  > Line-based text data: text/html (98 lines)
```

- 6) Destination address in the Ethernet frame = c4:41:1e:75:b1:52  
Yes, this is the Ethernet address of the sender.

```
> Frame 134: 583 bytes on wire (4664 bits), 583 bytes captured (4664 bits)
✓ Ethernet II, Src: 3ComEuro_7e:d9:01 (00:1e:c1:7e:d9:01), Dst: BelkinIn_75:b1:52 (c4:41:1e:75:b1:52)
  ✓ Destination: BelkinIn_75:b1:52 (c4:41:1e:75:b1:52)
    Address: BelkinIn_75:b1:52 (c4:41:1e:75:b1:52)
      .... ..0. .... = LG bit: Globally unique address (factory default)
      .... ..0. .... = IG bit: Individual address (unicast)
  > Source: 3ComEuro_7e:d9:01 (00:1e:c1:7e:d9:01)
    Type: IPv4 (0x0800)
> Internet Protocol Version 4, Src: 128.119.245.12, Dst: 128.119.247.66
> Transmission Control Protocol, Src Port: 80, Dst Port: 54042, Seq: 4345, Ack: 612, Len: 517
> [4 Reassembled TCP Segments (4861 bytes): #131(1448), #132(1448), #133(1448), #134(517)]
> Hypertext Transfer Protocol
> Line-based text data: text/html (98 lines)
```


- 7) Hexadecimal value of the type field is 0x0800 and it corresponds to upper layer protocol IPv4.

```
> Frame 134: 583 bytes on wire (4664 bits), 583 bytes captured (4664 bits)
✓ Ethernet II, Src: 3ComEuro_7e:d9:01 (00:1e:c1:7e:d9:01), Dst: BelkinIn_75:b1:52 (c4:41:1e:75:b1:52)
  > Destination: BelkinIn_75:b1:52 (c4:41:1e:75:b1:52)
  > Source: 3ComEuro_7e:d9:01 (00:1e:c1:7e:d9:01)
    Type: IPv4 (0x0800)
> Internet Protocol Version 4, Src: 128.119.245.12, Dst: 128.119.247.66
> Transmission Control Protocol, Src Port: 80, Dst Port: 54042, Seq: 4345, Ack: 612, Len: 517
> [4 Reassembled TCP Segments (4861 bytes): #131(1448), #132(1448), #133(1448), #134(517)]
> Hypertext Transfer Protocol
> Line-based text data: text/html (98 lines)
```

- 8) There are 79 bytes until 'O' in "OK"
- 14 bytes coming from Ethernet II header fields
  - 20 bytes coming from IPv4 header fields
  - 32 bytes coming from TCP header fields
  - 13 bytes coming from HTTP until 'O' in "OK"

Therefore, 79 bytes in total.

```
> Frame 134: 583 bytes on wire (4664 bits), 583 bytes captured (4664 bits)
> Ethernet II, Src: 3ComEuro_7e:d9:01 (00:1e:c1:7e:d9:01), Dst: BelkinIn_75:b1:52 (c4:41:1e:75:b1:52)
> Internet Protocol Version 4, Src: 128.119.245.12, Dst: 128.119.247.66
> Transmission Control Protocol, Src Port: 80, Dst Port: 54042, Seq: 4345, Ack: 612, Len: 517
> [4 Reassembled TCP Segments (4861 bytes): #131(1448), #132(1448), #133(1448), #134(517)]
> Hypertext Transfer Protocol
> Line-based text data: text/html (98 lines)
```




0000	c4 41 1e 75 b1 52 00 1e c1 7e d9 01 08 00 45 02	.A.u.R.. ....E
0010	02 39 ed 6f 40 00 3f 06 5f 0f 80 77 f5 0c 80 77	9.00? ..w..w
0020	f7 42 00 50 d3 1a 56 32 8c bf df c1 dd 7c 80 18	.B.P..V2 ..... ..
0030	00 ec e3 6f 00 00 01 01 08 0a f7 d2 96 ad 08 e7	...o.....

```

> Frame 134: 583 bytes on wire (4664 bits), 583 bytes captured (4664 bits)
> Ethernet II, Src: 3ComEuro_7e:d9:01 (00:1e:c1:7e:d9:01), Dst: BelkinIn_75:b1:52 (c4:41:1e:75:b1:52)
> Internet Protocol Version 4, Src: 128.119.245.12, Dst: 128.119.247.66
> Transmission Control Protocol, Src Port: 80, Dst Port: 54042, Seq: 4345, Ack: 612, Len: 517
> [4 Reassembled TCP Segments (4861 bytes): #131(1448), #132(1448), #133(1448), #134(517)]
> Hypertext Transfer Protocol
> Line-based text data: text/html (98 lines)

```




0000	c4 41 1e 75 b1 52 00 1e c1 7e d9 01 08 00 75 02	A-u-R-.....E
0010	02 39 cd 6f 40 00 3f 06 5f 0f 80 77 f3 0c 80 77	9a822.....
0020	f7 42 00 50 d3 1a 56 32 8c bf df c1 dd 7c 80 18	B-P-V2..... ..
0030	00 ec e3 6f 00 00 01 01 08 0a f7 d2 96 ad 08 e7	.....

```

> Frame 134: 583 bytes on wire (4664 bits), 583 bytes captured (4664 bits)
> Ethernet II, Src: 3ComEuro_7e:d9:01 (00:1e:c1:7e:d9:01), Dst: BelkinIn_75:b1:52 (c4:41:1e:75:b1:52)
> Internet Protocol Version 4, Src: 128.119.245.12, Dst: 128.119.247.66
> Transmission Control Protocol, Src Port: 80, Dst Port: 54042, Seq: 4345, Ack: 612, Len: 517
> [4 Reassembled TCP Segments (4861 bytes): #131(1448), #132(1448), #133(1448), #134(517)]
> Hypertext Transfer Protocol
> Line-based text data: text/html (98 lines)

```



0020	f7 42 00 50 d3 1a 56 32 8c bf df c1 dd 7c 80 18	B-P-V2..... ..
0030	00 ec e3 6f 00 00 01 01 08 0a f7 d2 96 ad 08 e7	.....
0040	51 bc 69 6d 70 6f 73 65 64 2c 20 6e 6f 72 20 63	impose d, nor c
0050	77 75 65 6c 70 61 6a 64 70 75 6a 75 73 75 61 6c	mal and unresal

```

> Frame 134: 583 bytes on wire (4664 bits), 583 bytes captured (4664 bits)
> Ethernet II, Src: 3ComEuro_7e:d9:01 (00:1e:c1:7e:d9:01), Dst: BelkinIn_75:b1:52 (c4:41:1e:75:b1:52)
> Internet Protocol Version 4, Src: 128.119.245.12, Dst: 128.119.247.66
> Transmission Control Protocol, Src Port: 80, Dst Port: 54042, Seq: 4345, Ack: 612, Len: 517
> [4 Reassembled TCP Segments (4861 bytes): #131(1448), #132(1448), #133(1448), #134(517)]
> Hypertext Transfer Protocol
  > HTTP/1.1 200 OK\r\n
    > [Expert Info (Chat/Sequence): HTTP/1.1 200 OK\r\n]
      Response Version: HTTP/1.1
      Status Code: 200
      [Status Code Description: OK]
      Response Phrase: OK
    Date: Tue, 02 Nov 2021 17:37:43 GMT\r\n
    Server: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips PHP/7.4.25 mod_perl/2.0.9
    Last-Modified: Tue, 02 Nov 2021 05:59:02 GMT\r\n
    ETag: "1194-5cfc7fd81b3af"\r\n
    Accept-Ranges: bytes\r\n
    > Content-Length: 4500\r\n
    >
    0000 48 54 54 50 2f 31 2e 31 20 32 30 30 20 4f 4b 0d HTTP/1.1 200 OK-
    0010 0a 44 61 74 65 3a 20 54 75 65 2c 20 30 32 20 4e -Date: T ue, 02 N
    0020 6f 76 20 32 30 32 31 20 31 37 3a 33 37 3a 34 33 ov 2021 17:37:43
    0030 20 47 4d 54 0d 0a 53 65 72 76 65 72 3a 20 41 70 GMT--Se rver: Ap

```

9) 4 reassembled TCP segments correspond to 4 Ethernet frames.

```
> Frame 134: 583 bytes on wire (4664 bits), 583 bytes captured (4664 bits)
> Ethernet II, Src: 3ComEuro_7e:d9:01 (00:1e:c1:7e:d9:01), Dst: BelkinIn_75:b1:52 (c4:41:1e:75:b1:52)
> Internet Protocol Version 4, Src: 128.119.245.12, Dst: 128.119.247.66
> Transmission Control Protocol, Src Port: 80, Dst Port: 54042, Seq: 4345, Ack: 612, Len: 517
✓ [4 Reassembled TCP Segments (4861 bytes): #131(1448), #132(1448), #133(1448), #134(517)]
    [Frame: 131, payload: 0-1447 (1448 bytes)]
    [Frame: 132, payload: 1448-2895 (1448 bytes)]
    [Frame: 133, payload: 2896-4343 (1448 bytes)]
    [Frame: 134, payload: 4344-4860 (517 bytes)]
    [Segment count: 4]
    [Reassembled TCP length: 4861]
    [Reassembled TCP Data: 485454502f312e3120323030204f4b0d0a446174653a2054755652c203032204e6f762032...]
> Hypertext Transfer Protocol
> Line-based text data: text/html (98 lines)
```

10) Source address = 78:7b:8a:ac:ad:e1

12	0.598299	Apple_ac:ad:e1	Broadcast	ARP	60	Who has 169.254.1.0? Tell 128.119.247.79
----	----------	----------------	-----------	-----	----	--

```
> Frame 12: 60 bytes on wire (480 bits), 60 bytes captured (480 bits)
✓ Ethernet II, Src: Apple_ac:ad:e1 (78:7b:8a:ac:ad:e1), Dst: Broadcast (ff:ff:ff:ff:ff:ff)
  > Destination: Broadcast (ff:ff:ff:ff:ff:ff)
  ✓ Source: Apple_ac:ad:e1 (78:7b:8a:ac:ad:e1)
    Address: Apple_ac:ad:e1 (78:7b:8a:ac:ad:e1)
      .... 0. .... = LG bit: Globally unique address (factory default)
      .... 0. .... = IG bit: Individual address (unicast)
    Type: ARP (0x0806)
    Padding: 00000000000000000000000000000000
  > Address Resolution Protocol (request)
```

11) Destination address = ff:ff:ff:ff:ff:ff

This address is broadcast address, indicating that the ARP request is sent to all devices on the local network to discover the MAC address associated with a particular IP address. The device that owns the requested IP address will respond with its MAC address.

```
> Frame 12: 60 bytes on wire (480 bits), 60 bytes captured (480 bits)
✓ Ethernet II, Src: Apple_ac:ad:e1 (78:7b:8a:ac:ad:e1), Dst: Broadcast (ff:ff:ff:ff:ff:ff)
  ✓ Destination: Broadcast (ff:ff:ff:ff:ff:ff)
    Address: Broadcast (ff:ff:ff:ff:ff:ff)
      .... 1. .... = LG bit: Locally administered address (this is NOT the factory default)
      .... 1. .... = IG bit: Group address (multicast/broadcast)
  > Source: Apple_ac:ad:e1 (78:7b:8a:ac:ad:e1)
    Type: ARP (0x0806)
    Padding: 00000000000000000000000000000000
  > Address Resolution Protocol (request)
```

12) The hexadecimal value for the two-byte Ethernet frame type field is 0x0806 and it corresponds to upper layer protocol ARP.

```
> Frame 1: 60 bytes on wire (480 bits), 60 bytes captured (480 bits)
✓ Ethernet II, Src: 3ComEuro_7e:d9:01 (00:1e:c1:7e:d9:01), Dst: Broadcast (ff:ff:ff:ff:ff:ff)
  > Destination: Broadcast (ff:ff:ff:ff:ff:ff)
  > Source: 3ComEuro_7e:d9:01 (00:1e:c1:7e:d9:01)
    Type: ARP (0x0806)
  > Trailer: 0000000000000000000000000000000020202020
  > Address Resolution Protocol (request)
```

13) There are 20 bytes from the very beginning of the Ethernet frame until the ARP opcode field.

```
> Frame 12: 60 bytes on wire (480 bits), 60 bytes captured (480 bits)
> 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: 00:00:00_00:00:00 (00:00:00:00:00:00)
    Target IP address: 169.254.1.0
```

```
0000  ff ff ff ff ff ff 78 7b 8a ac ad e1 08 06 00 01  ....x{  ....
0010  08 00 06 04 00 01 78 7b 8a ac ad e1 80 77 f7 4f  ....x{  ....w.O
0020  00 00 00 00 00 00 a9 fe 01 00 00 00 00 00 00  ....
0030  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  ....
```

14) Yes, it contains.

IP address of the sender: 128.119.247.79

```
> Frame 12: 60 bytes on wire (480 bits), 60 bytes captured (480 bits)
> 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: 00:00:00_00:00:00 (00:00:00:00:00:00)
    Target IP address: 169.254.1.0
```

15) It is the target IP address and its value is 169.254.1.0

```
> Frame 12: 60 bytes on wire (480 bits), 60 bytes captured (480 bits)
> 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: 00:00:00_00:00:00 (00:00:00:00:00:00)
    Target IP address: 169.254.1.0
```

16) Value of the opcode field is 2.

```
> Frame 109: 60 bytes on wire (480 bits), 60 bytes captured (480 bits)
> Ethernet II, Src: 3ComEuro_7e:d9:01 (00:1e:c1:7e:d9:01), Dst: BelkinIn_75:b1:52 (c4:41:1e:75:b1:52)
v Address Resolution Protocol (reply)
  Hardware type: Ethernet (1)
  Protocol type: IPv4 (0x0800)
  Hardware size: 6
  Protocol size: 4
  Opcode: reply (2)
  Sender MAC address: 3ComEuro_7e:d9:01 (00:1e:c1:7e:d9:01)
  Sender IP address: 128.119.247.1
  Target MAC address: BelkinIn_75:b1:52 (c4:41:1e:75:b1:52)
  Target IP address: 128.119.247.66
```

17) It is 00:1e:c1:7e:d9:01

```
> Frame 109: 60 bytes on wire (480 bits), 60 bytes captured (480 bits)
> Ethernet II, Src: 3ComEuro_7e:d9:01 (00:1e:c1:7e:d9:01), Dst: BelkinIn_75:b1:52 (c4:41:1e:75:b1:52)
v Address Resolution Protocol (reply)
  Hardware type: Ethernet (1)
  Protocol type: IPv4 (0x0800)
  Hardware size: 6
  Protocol size: 4
  Opcode: reply (2)
  Sender MAC address: 3ComEuro_7e:d9:01 (00:1e:c1:7e:d9:01)
  Sender IP address: 128.119.247.1
  Target MAC address: BelkinIn_75:b1:52 (c4:41:1e:75:b1:52)
  Target IP address: 128.119.247.66
```

18) The absence of ARP replies in this trace is due to the fact that we are not analyzing the network from the perspective of the machine that initiated the ARP request. In the ARP protocol, when a device sends out an ARP request, it broadcasts the request to all devices on the local network. However, the ARP reply is unicast, meaning it is sent directly back to the specific Ethernet address of the original requester. Since we are not situated at the machine that sent the initial ARP request, we do not capture the unicast ARP replies in this trace.