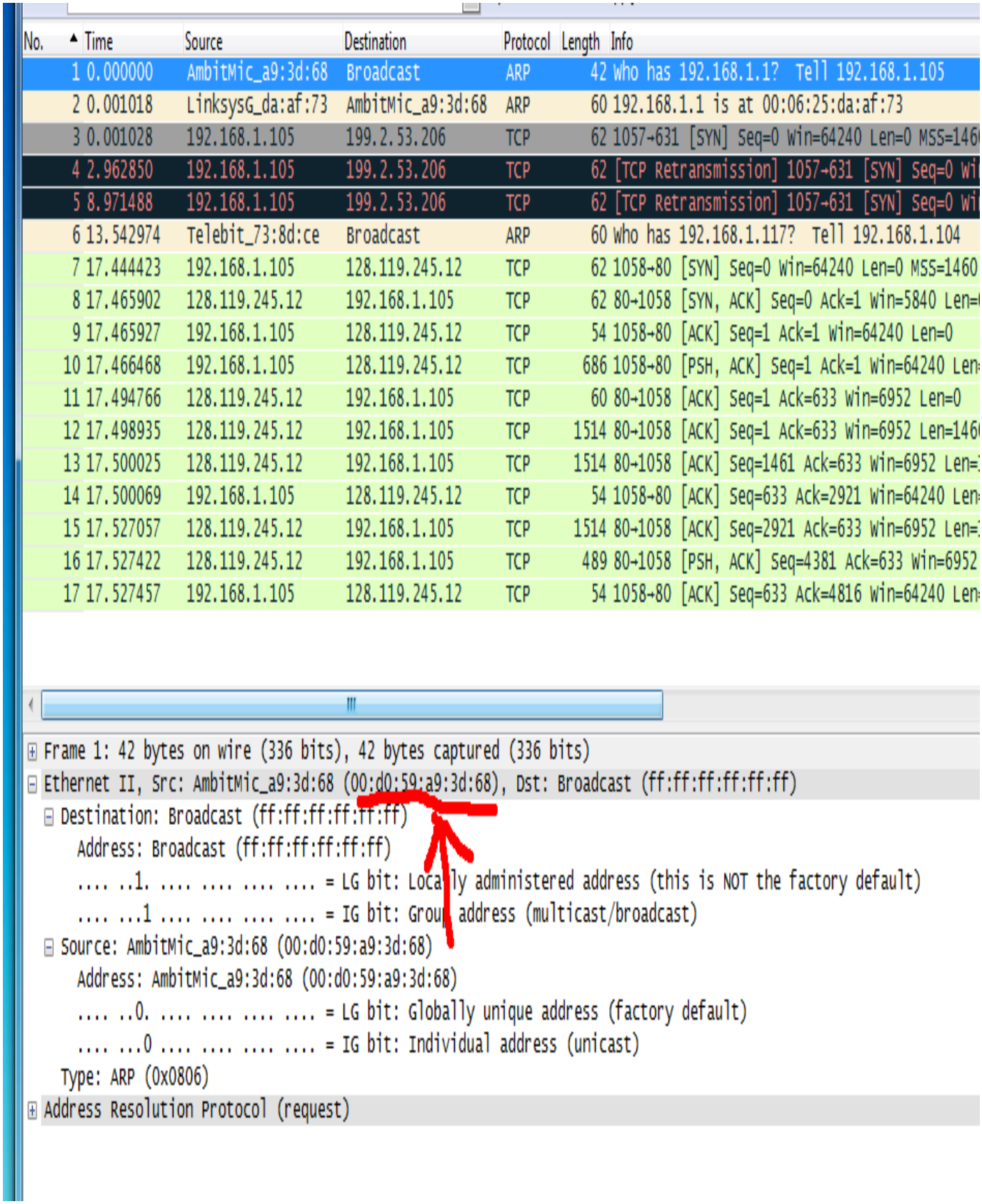
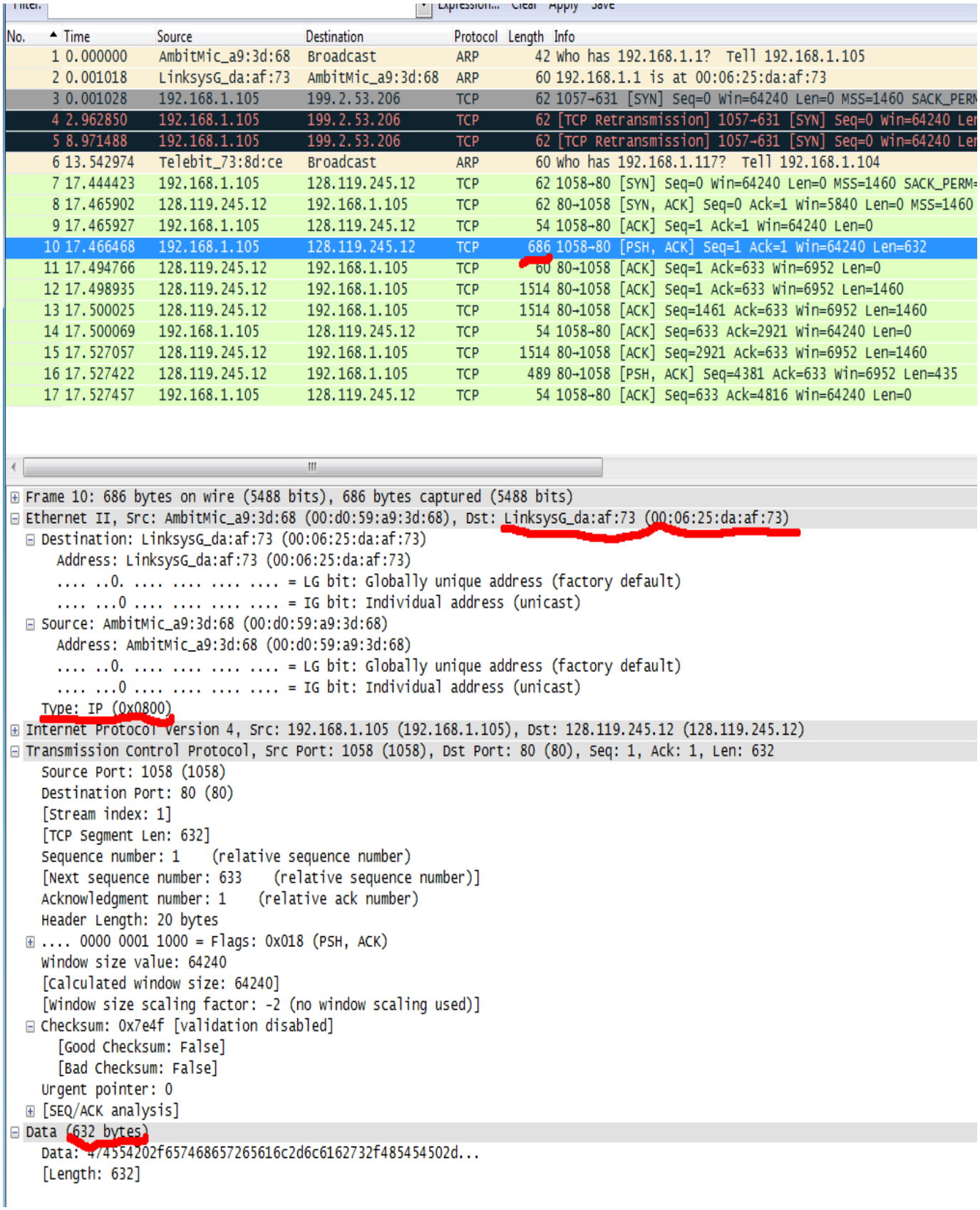
1.
00:d0:59:a9:3d:68 → AmbitMic



No.	Time	Source	Destination	Protocol	Length	Info
1	0.000000	AmbitMic_a9:3d:68	Broadcast	ARP	42	Who has 192.168.1.1? Tell 192.168.1.105
2	0.001018	LinksysG_da:af:73	AmbitMic_a9:3d:68	ARP	60	192.168.1.1 is at 00:06:25:da:af:73
3	0.001028	192.168.1.105	199.2.53.206	TCP	62	1057→631 [SYN] Seq=0 Win=64240 Len=0 MSS=146
4	2.962850	192.168.1.105	199.2.53.206	TCP	62	[TCP Retransmission] 1057→631 [SYN] Seq=0 Wi
5	8.971488	192.168.1.105	199.2.53.206	TCP	62	[TCP Retransmission] 1057→631 [SYN] Seq=0 Wi
6	13.542974	Telebit_73:8d:ce	Broadcast	ARP	60	Who has 192.168.1.117? Tell 192.168.1.104
7	17.444423	192.168.1.105	128.119.245.12	TCP	62	1058→80 [SYN] Seq=0 Win=64240 Len=0 MSS=1460
8	17.465902	128.119.245.12	192.168.1.105	TCP	62	80→1058 [SYN, ACK] Seq=0 Ack=1 Win=5840 Len=
9	17.465927	192.168.1.105	128.119.245.12	TCP	54	1058→80 [ACK] Seq=1 Ack=1 Win=64240 Len=0
10	17.466468	192.168.1.105	128.119.245.12	TCP	686	1058→80 [PSH, ACK] Seq=1 Ack=1 Win=64240 Len
11	17.494766	128.119.245.12	192.168.1.105	TCP	60	80→1058 [ACK] Seq=1 Ack=633 Win=6952 Len=0
12	17.498935	128.119.245.12	192.168.1.105	TCP	1514	80→1058 [ACK] Seq=1 Ack=633 Win=6952 Len=146
13	17.500025	128.119.245.12	192.168.1.105	TCP	1514	80→1058 [ACK] Seq=1461 Ack=633 Win=6952 Len=
14	17.500069	192.168.1.105	128.119.245.12	TCP	54	1058→80 [ACK] Seq=633 Ack=2921 Win=64240 Len
15	17.527057	128.119.245.12	192.168.1.105	TCP	1514	80→1058 [ACK] Seq=2921 Ack=633 Win=6952 Len=
16	17.527422	128.119.245.12	192.168.1.105	TCP	489	80→1058 [PSH, ACK] Seq=4381 Ack=633 Win=6952
17	17.527457	192.168.1.105	128.119.245.12	TCP	54	1058→80 [ACK] Seq=633 Ack=4816 Win=64240 Len

```
⊞ Frame 1: 42 bytes on wire (336 bits), 42 bytes captured (336 bits)
⊟ Ethernet II, Src: AmbitMic_a9:3d:68 (00:d0:59:a9:3d:68), 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: AmbitMic_a9:3d:68 (00:d0:59:a9:3d:68)
      Address: AmbitMic_a9:3d:68 (00:d0:59:a9:3d:68)
      .... ..0. .... .... .... .... = LG bit: Globally unique address (factory default)
      .... ...0 .... .... .... .... = IG bit: Individual address (unicast)
    Type: ARP (0x0806)
⊞ Address Resolution Protocol (request)
```

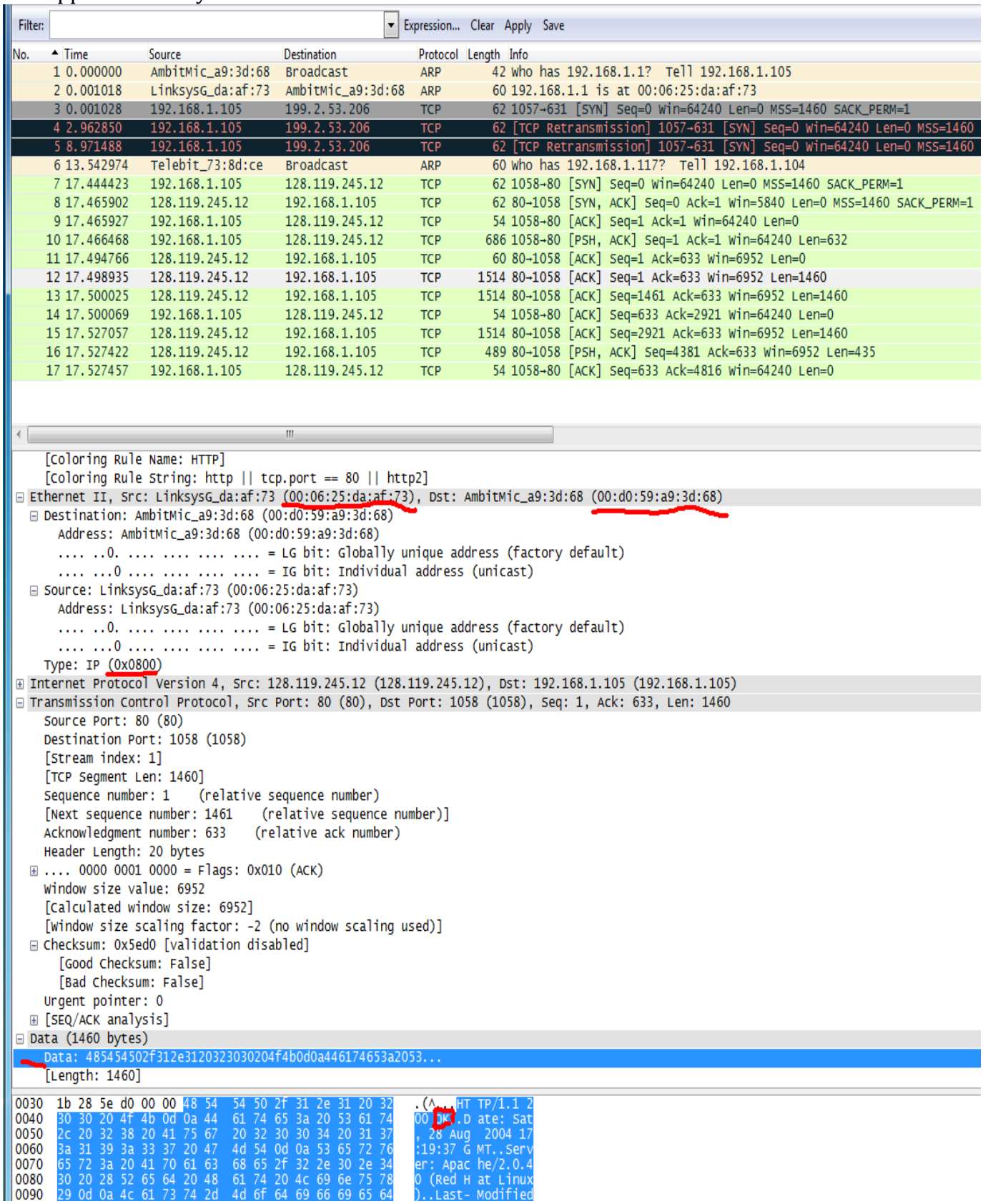
2. 00:06:25:da:af:73 → The Linksys Router
3. 0x800
4. 686 – 632 = 54



No.	Time	Source	Destination	Protocol	Length	Info
1	0.000000	AmbitMic_a9:3d:68	Broadcast	ARP	42	Who has 192.168.1.1? Tell 192.168.1.105
2	0.001018	LinksysG_da:af:73	AmbitMic_a9:3d:68	ARP	60	192.168.1.1 is at 00:06:25:da:af:73
3	0.001028	192.168.1.105	199.2.53.206	TCP	62	1057→631 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 SACK_PERM
4	2.962850	192.168.1.105	199.2.53.206	TCP	62	[TCP Retransmission] 1057→631 [SYN] Seq=0 Win=64240 Le
5	8.971488	192.168.1.105	199.2.53.206	TCP	62	[TCP Retransmission] 1057→631 [SYN] Seq=0 Win=64240 Le
6	13.542974	Telebit_73:8d:ce	Broadcast	ARP	60	Who has 192.168.1.117? Tell 192.168.1.104
7	17.444423	192.168.1.105	128.119.245.12	TCP	62	1058→80 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 SACK_PERM=
8	17.465902	128.119.245.12	192.168.1.105	TCP	62	80→1058 [SYN, ACK] Seq=0 Ack=1 Win=5840 Len=0 MSS=1460
9	17.465927	192.168.1.105	128.119.245.12	TCP	54	1058→80 [ACK] Seq=1 Ack=1 Win=64240 Len=0
10	17.466468	192.168.1.105	128.119.245.12	TCP	686	1058→80 [PSH, ACK] Seq=1 Ack=1 Win=64240 Len=632
11	17.494766	128.119.245.12	192.168.1.105	TCP	60	80→1058 [ACK] Seq=1 Ack=633 Win=6952 Len=0
12	17.498935	128.119.245.12	192.168.1.105	TCP	1514	80→1058 [ACK] Seq=1 Ack=633 Win=6952 Len=1460
13	17.500025	128.119.245.12	192.168.1.105	TCP	1514	80→1058 [ACK] Seq=1461 Ack=633 Win=6952 Len=1460
14	17.500069	192.168.1.105	128.119.245.12	TCP	54	1058→80 [ACK] Seq=633 Ack=2921 Win=64240 Len=0
15	17.527057	128.119.245.12	192.168.1.105	TCP	1514	80→1058 [ACK] Seq=2921 Ack=633 Win=6952 Len=1460
16	17.527422	128.119.245.12	192.168.1.105	TCP	489	80→1058 [PSH, ACK] Seq=4381 Ack=633 Win=6952 Len=435
17	17.527457	192.168.1.105	128.119.245.12	TCP	54	1058→80 [ACK] Seq=633 Ack=4816 Win=64240 Len=0

```
⊞ Frame 10: 686 bytes on wire (5488 bits), 686 bytes captured (5488 bits)
⊟ Ethernet II, Src: AmbitMic_a9:3d:68 (00:d0:59:a9:3d:68), Dst: LinksysG_da:af:73 (00:06:25:da:af:73)
  ⊟ Destination: LinksysG_da:af:73 (00:06:25:da:af:73)
      Address: LinksysG_da:af:73 (00:06:25:da:af:73)
      .... ..0. .... .... .... .... = LG bit: Globally unique address (factory default)
      .... ...0 .... .... .... .... = IG bit: Individual address (unicast)
  ⊟ Source: AmbitMic_a9:3d:68 (00:d0:59:a9:3d:68)
      Address: AmbitMic_a9:3d:68 (00:d0:59:a9:3d:68)
      .... ..0. .... .... .... .... = LG bit: Globally unique address (factory default)
      .... ...0 .... .... .... .... = IG bit: Individual address (unicast)
    Type: IP (0x0800)
⊞ Internet Protocol Version 4, Src: 192.168.1.105 (192.168.1.105), Dst: 128.119.245.12 (128.119.245.12)
⊟ Transmission Control Protocol, Src Port: 1058 (1058), Dst Port: 80 (80), Seq: 1, Ack: 1, Len: 632
    Source Port: 1058 (1058)
    Destination Port: 80 (80)
    [Stream index: 1]
    [TCP Segment Len: 632]
    Sequence number: 1    (relative sequence number)
    [Next sequence number: 633    (relative sequence number)]
    Acknowledgment number: 1    (relative ack number)
    Header Length: 20 bytes
  ⊞ .... 0000 0001 1000 = Flags: 0x018 (PSH, ACK)
    Window size value: 64240
    [Calculated window size: 64240]
    [Window size scaling factor: -2 (no window scaling used)]
  ⊟ Checksum: 0x7e4f [validation disabled]
      [Good Checksum: False]
      [Bad Checksum: False]
    Urgent pointer: 0
  ⊞ [SEQ/ACK analysis]
⊟ Data (632 bytes)
    Data: 474554202f657468657265616c2d6c6162732f485454502d...
    [Length: 632]
```

5. 00:06:25:da:af:73 → The Linksys Router
6. 00:d0:59:a9:3d:68 → AmbitMic
7. 0x800, it corresponds to the IP
8. It appears at 66 bytes



Filter: Expression... Clear Apply Save

No.	Time	Source	Destination	Protocol	Length	Info
1	0.000000	AmbitMic_a9:3d:68	Broadcast	ARP	42	Who has 192.168.1.1? Tell 192.168.1.105
2	0.001018	LinksysG_da:af:73	AmbitMic_a9:3d:68	ARP	60	192.168.1.1 is at 00:06:25:da:af:73
3	0.001028	192.168.1.105	199.2.53.206	TCP	62	1057→631 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 SACK_PERM=1
4	2.962850	192.168.1.105	199.2.53.206	TCP	62	[TCP Retransmission] 1057→631 [SYN] Seq=0 Win=64240 Len=0 MSS=1460
5	8.971488	192.168.1.105	199.2.53.206	TCP	62	[TCP Retransmission] 1057→631 [SYN] Seq=0 Win=64240 Len=0 MSS=1460
6	13.542974	Telebit_73:8d:ce	Broadcast	ARP	60	Who has 192.168.1.117? Tell 192.168.1.104
7	17.444423	192.168.1.105	128.119.245.12	TCP	62	1058→80 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 SACK_PERM=1
8	17.465902	128.119.245.12	192.168.1.105	TCP	62	80→1058 [SYN, ACK] Seq=0 Ack=1 Win=5840 Len=0 MSS=1460 SACK_PERM=1
9	17.465927	192.168.1.105	128.119.245.12	TCP	54	1058→80 [ACK] Seq=1 Ack=1 Win=64240 Len=0
10	17.466468	192.168.1.105	128.119.245.12	TCP	686	1058→80 [PSH, ACK] Seq=1 Ack=1 Win=64240 Len=632
11	17.494766	128.119.245.12	192.168.1.105	TCP	60	80→1058 [ACK] Seq=1 Ack=633 Win=6952 Len=0
12	17.498935	128.119.245.12	192.168.1.105	TCP	1514	80→1058 [ACK] Seq=1 Ack=633 Win=6952 Len=1460
13	17.500025	128.119.245.12	192.168.1.105	TCP	1514	80→1058 [ACK] Seq=1461 Ack=633 Win=6952 Len=1460
14	17.500069	192.168.1.105	128.119.245.12	TCP	54	1058→80 [ACK] Seq=633 Ack=2921 Win=64240 Len=0
15	17.527057	128.119.245.12	192.168.1.105	TCP	1514	80→1058 [ACK] Seq=2921 Ack=633 Win=6952 Len=1460
16	17.527422	128.119.245.12	192.168.1.105	TCP	489	80→1058 [PSH, ACK] Seq=4381 Ack=633 Win=6952 Len=435
17	17.527457	192.168.1.105	128.119.245.12	TCP	54	1058→80 [ACK] Seq=633 Ack=4816 Win=64240 Len=0

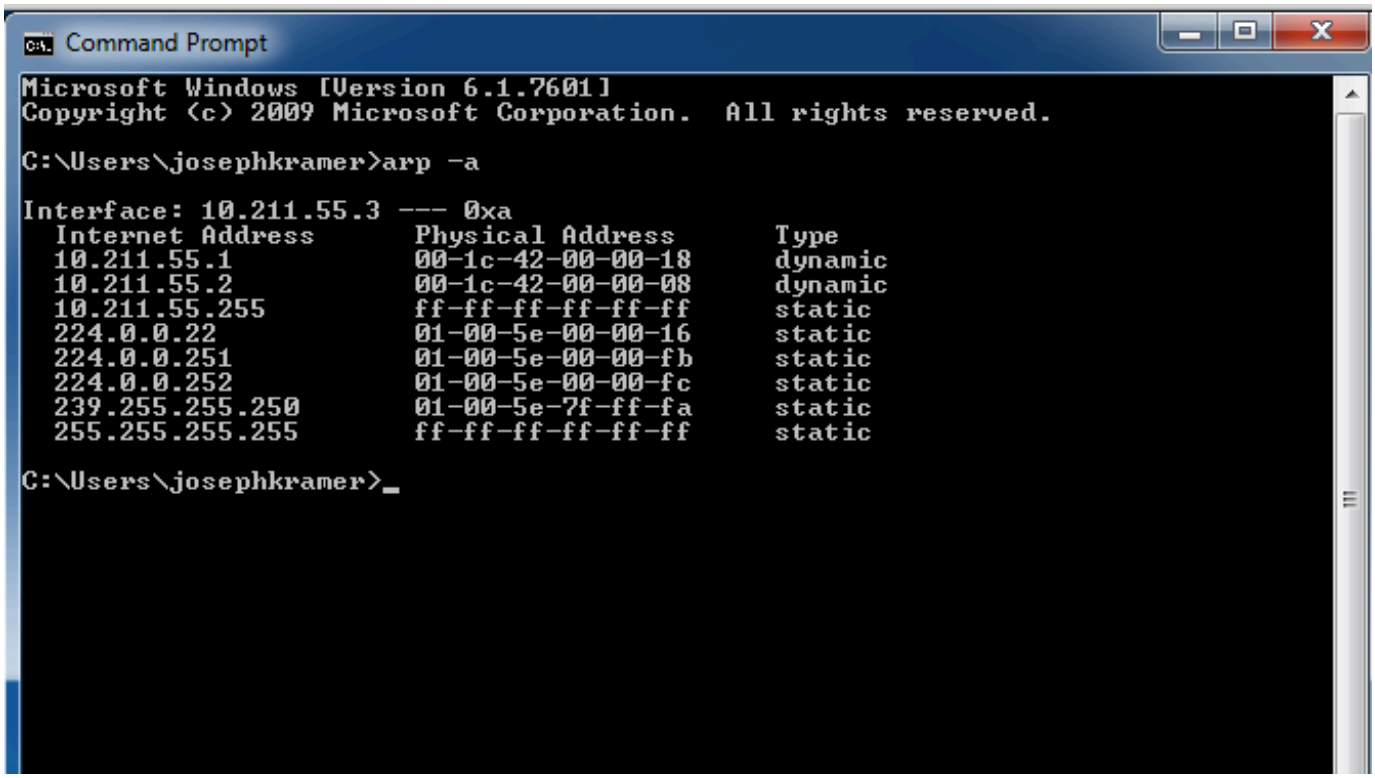
```
    [Coloring Rule Name: HTTP]
    [Coloring Rule String: http || tcp.port == 80 || http2]
⊟ Ethernet II, Src: LinksysG_da:af:73 (00:06:25:da:af:73), Dst: AmbitMic_a9:3d:68 (00:d0:59:a9:3d:68)
  ⊟ Destination: AmbitMic_a9:3d:68 (00:d0:59:a9:3d:68)
      Address: AmbitMic_a9:3d:68 (00:d0:59:a9:3d:68)
      .... ..0. .... .... .... .... = LG bit: Globally unique address (factory default)
      .... ...0 .... .... .... .... = IG bit: Individual address (unicast)
  ⊟ Source: LinksysG_da:af:73 (00:06:25:da:af:73)
      Address: LinksysG_da:af:73 (00:06:25:da:af:73)
      .... ..0. .... .... .... .... = LG bit: Globally unique address (factory default)
      .... ...0 .... .... .... .... = IG bit: Individual address (unicast)
    Type: IP (0x0800)
⊞ Internet Protocol Version 4, Src: 128.119.245.12 (128.119.245.12), Dst: 192.168.1.105 (192.168.1.105)
⊟ Transmission Control Protocol, Src Port: 80 (80), Dst Port: 1058 (1058), Seq: 1, Ack: 633, Len: 1460
    Source Port: 80 (80)
    Destination Port: 1058 (1058)
    [Stream index: 1]
    [TCP Segment Len: 1460]
    Sequence number: 1    (relative sequence number)
    [Next sequence number: 1461    (relative sequence number)]
    Acknowledgment number: 633    (relative ack number)
    Header Length: 20 bytes
  ⊞ .... 0000 0001 0000 = Flags: 0x010 (ACK)
    Window size value: 6952
    [Calculated window size: 6952]
    [window size scaling factor: -2 (no window scaling used)]
  ⊟ Checksum: 0x5ed0 [validation disabled]
      [Good Checksum: False]
      [Bad Checksum: False]
    Urgent pointer: 0
  ⊞ [SEQ/ACK analysis]
⊟ Data (1460 bytes)
    Data: 485454502f312e3120323030204f4b0d0a446174653a2053...
    [Length: 1460]
```

```
0030  1b 28 5e d0 00 00 48 54  54 50 2f 31 2e 31 20 32   .(^...HT TP/1.1 2
0040  30 30 20 4f 4b 0d 0a 44  61 74 65 3a 20 53 61 74   00 OK..D ate: Sat
0050  2c 20 32 38 20 41 75 67  20 32 30 30 34 20 31 37   , 28 Aug  2004 17
0060  3a 31 39 3a 33 37 20 47  4d 54 0d 0a 53 65 72 76   :19:37 G MT..Serv
0070  65 72 3a 20 41 70 61 63  68 65 2f 32 2e 30 2e 34   er: Apac he/2.0.4
0080  30 20 28 52 65 64 20 48  61 74 20 4c 69 6e 75 78   0 (Red H at Linux
0090  29 0d 0a 4c 61 73 74 2d  4d 6f 64 69 66 69 65 64   )..Last- Modified
```

9.
The left:
Header: Internet Address
Contains: IP Address

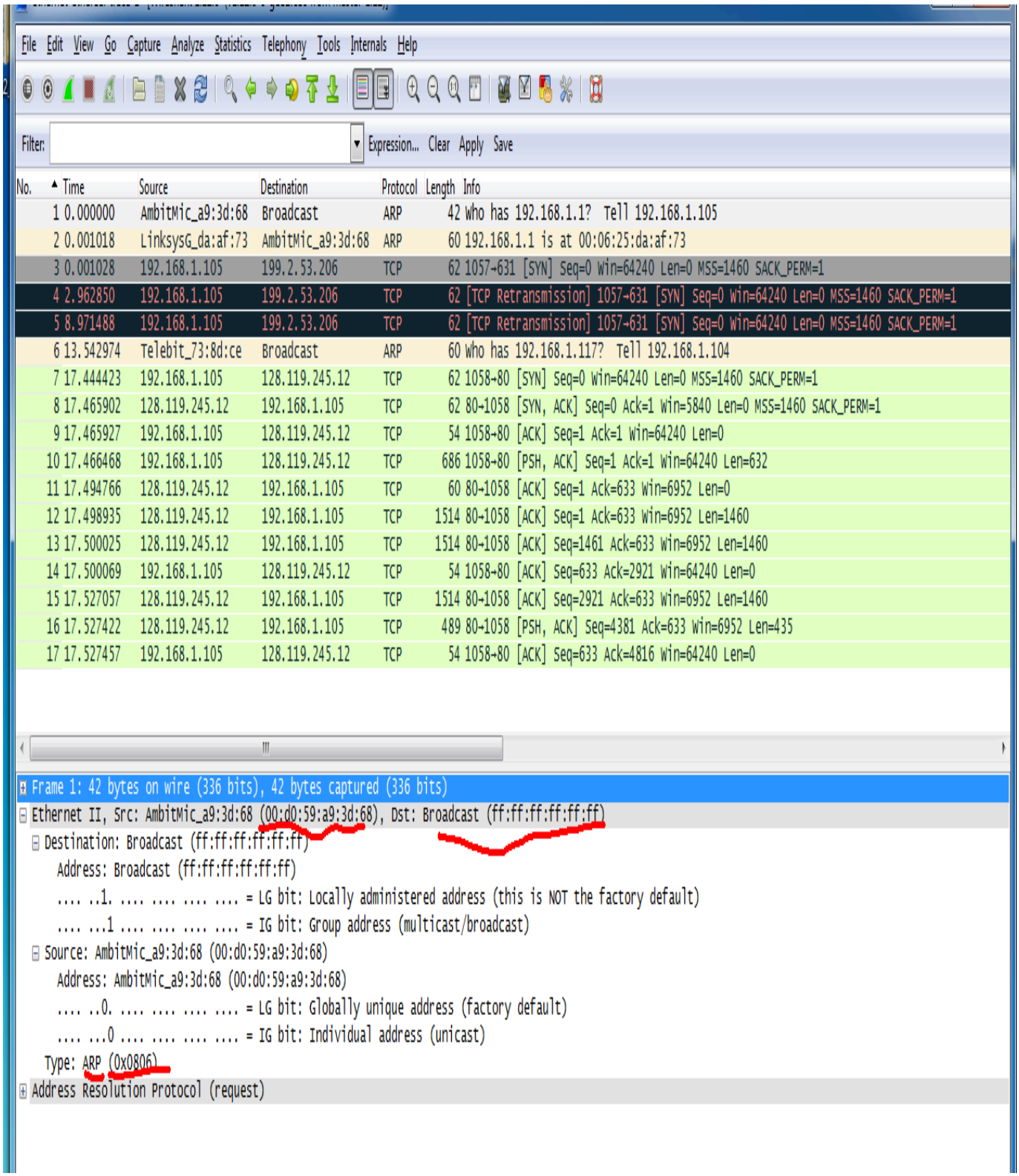
The Middle:
Header: Physical Address
Contains: MAC Address

The Right:
Header: Type
Contains: Protocol Type



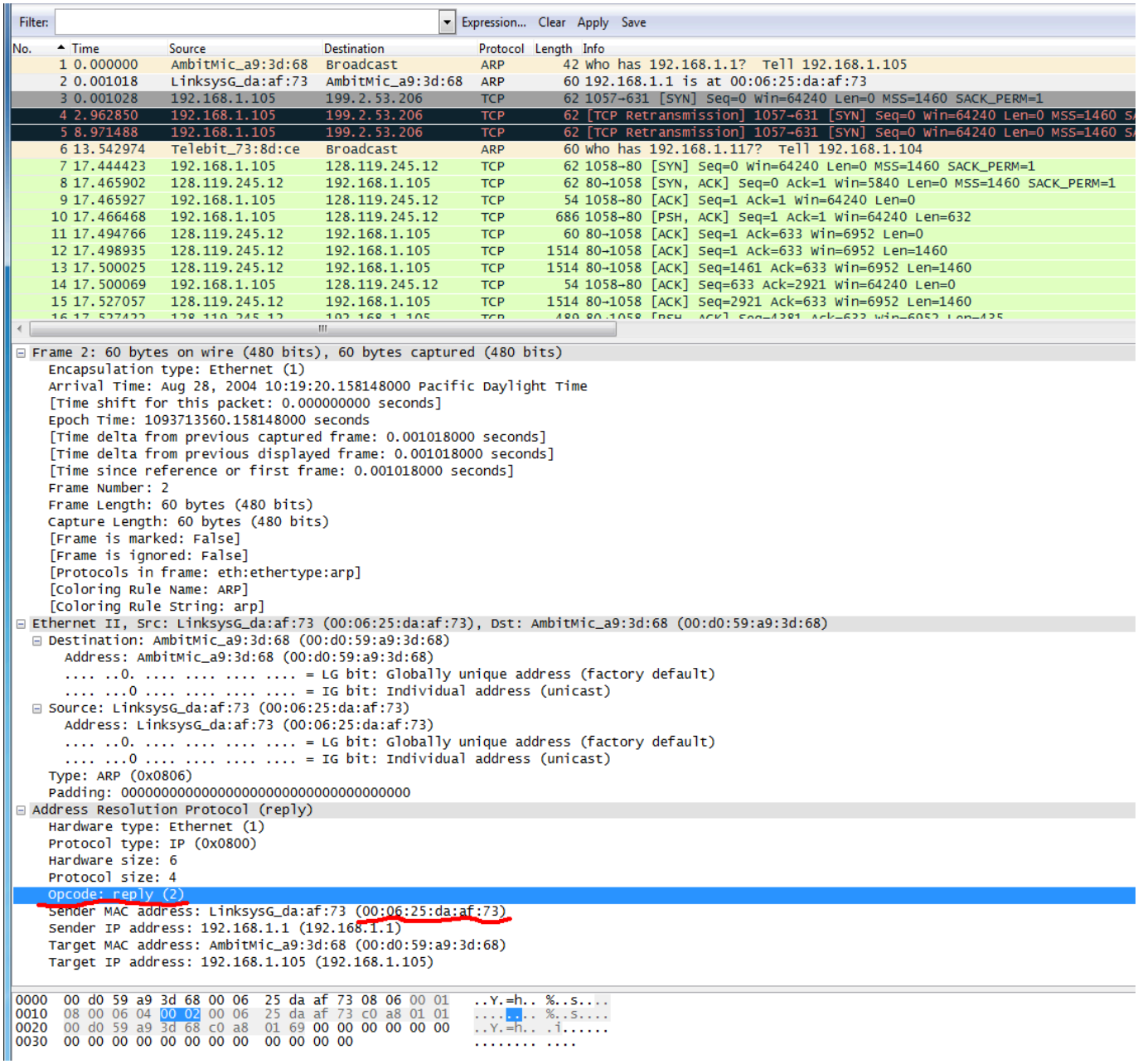
10.
Source → 00:d0:59:a9:3d:68
Destination → ff:ff:ff:ff:ff:ff

11.0x0806. This is the ARP state.

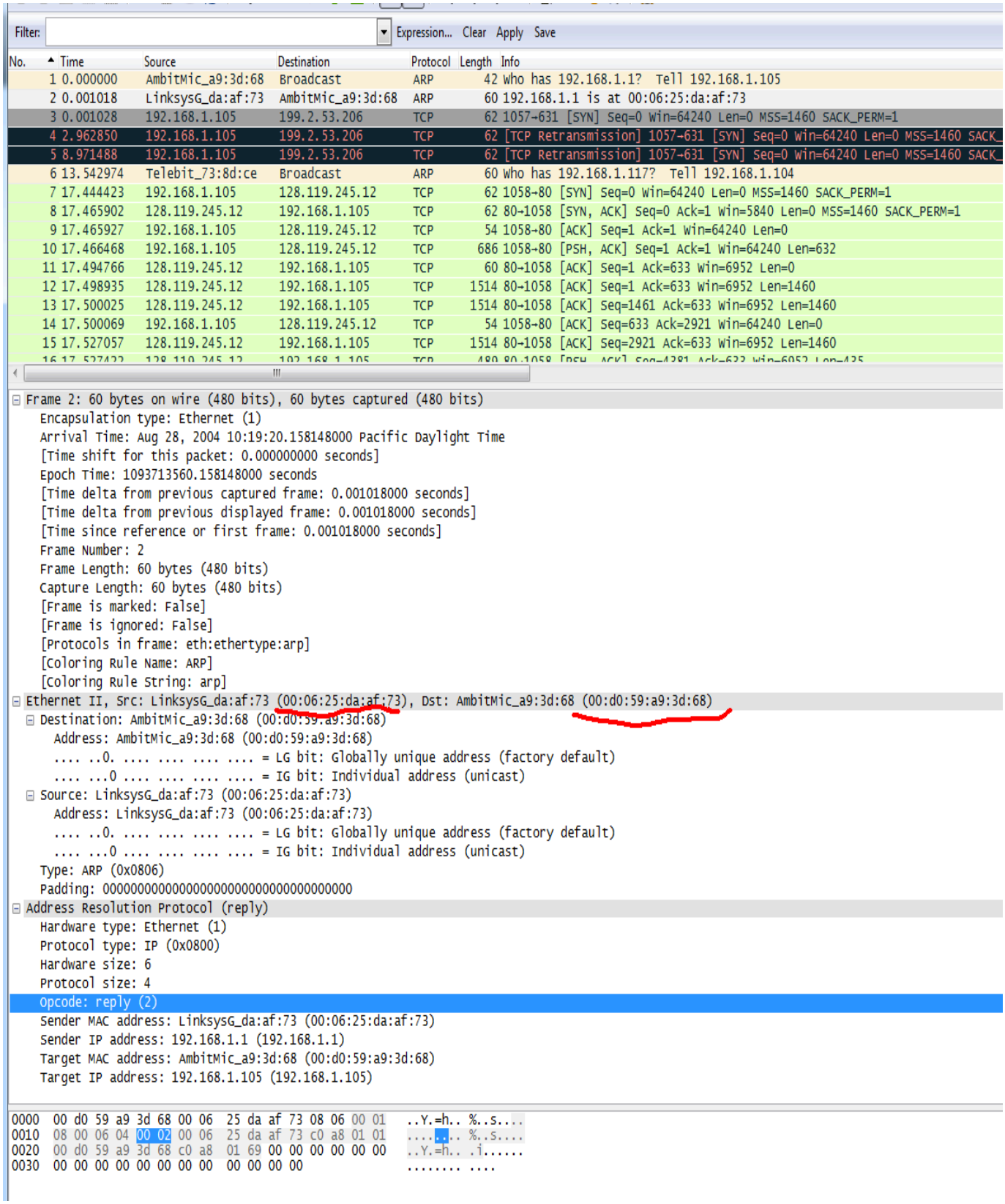


12.
a. 20 bytes from the very beginning
b. 1
c. Yes, 192.168.1.105
d. The target MAC address field is 00:00:00:00:00:00 and once the MAC address is resolved, it will change to the finished MAC address of the router / server.

13.
a. 20
b. 2
c. It appears in the previously blank target MAC address field. This is the senders MAC address, because this is a reply to the broadcast request. . That is the router MAC address of 00:06:25:da:af:73



14.
Source: 00:06:25:da:af:73 → The Linksys Router
Dest: 00:d0:59:a9:3d:68 → AmbitMic



15.

This does not need to be rediscovered, because it is an IP address in the same subnet as the router, which has already been mapped in the ARP table.