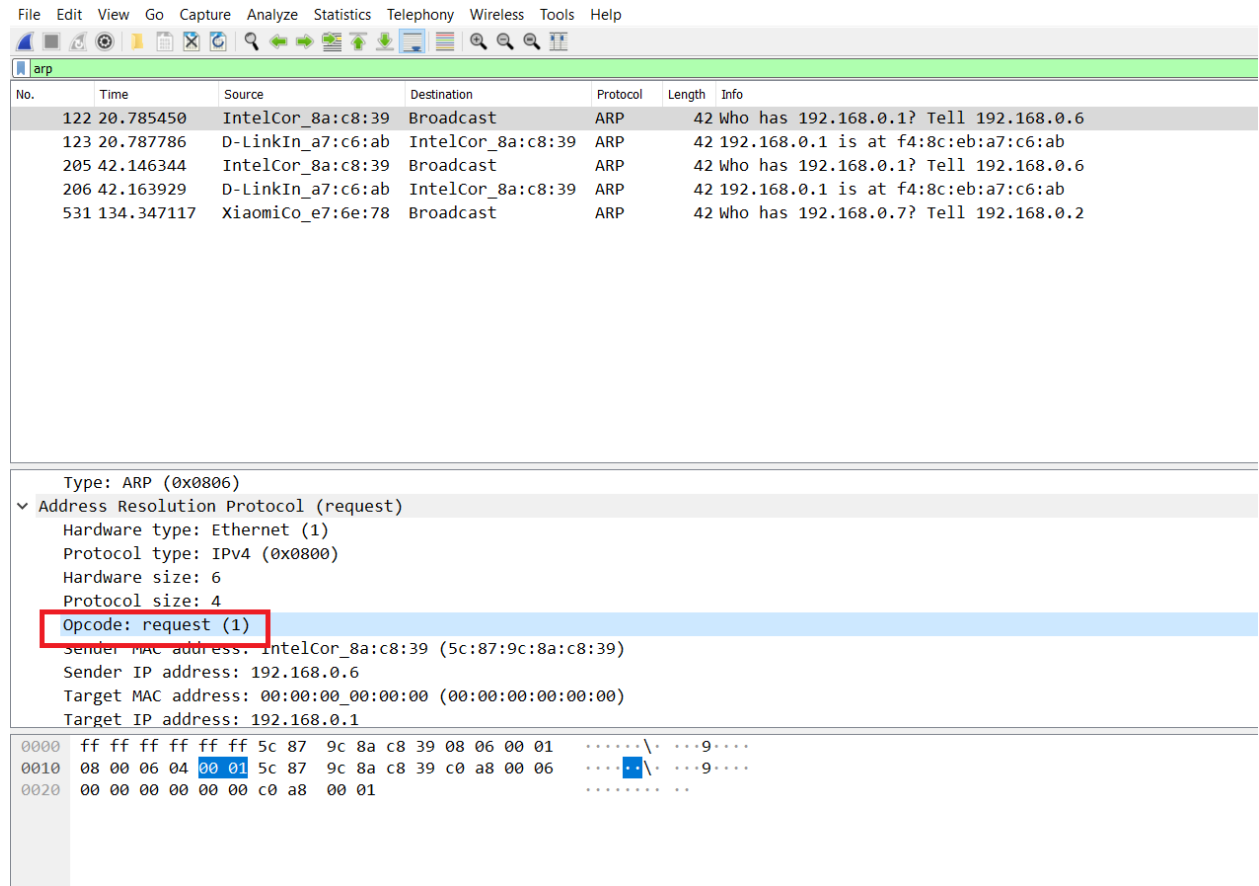


## LAB-7 Week2

1. What is the value of 'opcode' field?

Ans: The value of 'opcode' field is 1



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arp

| No. | Time       | Source            | Destination       | Protocol | Length | Info                                  |
|-----|------------|-------------------|-------------------|----------|--------|---------------------------------------|
| 122 | 20.785450  | IntelCor_8a:c8:39 | Broadcast         | ARP      | 42     | Who has 192.168.0.1? Tell 192.168.0.6 |
| 123 | 20.787786  | D-LinkIn_a7:c6:ab | IntelCor_8a:c8:39 | ARP      | 42     | 192.168.0.1 is at f4:8c:eb:a7:c6:ab   |
| 205 | 42.146344  | IntelCor_8a:c8:39 | Broadcast         | ARP      | 42     | Who has 192.168.0.1? Tell 192.168.0.6 |
| 206 | 42.163929  | D-LinkIn_a7:c6:ab | IntelCor_8a:c8:39 | ARP      | 42     | 192.168.0.1 is at f4:8c:eb:a7:c6:ab   |
| 531 | 134.347117 | XiaomiCo_e7:6e:78 | Broadcast         | ARP      | 42     | Who has 192.168.0.7? Tell 192.168.0.2 |

Type: ARP (0x0806)

▼ Address Resolution Protocol (request)

Hardware type: Ethernet (1)

Protocol type: IPv4 (0x0800)

Hardware size: 6

Protocol size: 4

Opcode: request (1)

Sender MAC address: IntelCor\_8a:c8:39 (5c:87:9c:8a:c8:39)

Sender IP address: 192.168.0.6

Target MAC address: 00:00:00\_00:00:00 (00:00:00:00:00:00)

Target IP address: 192.168.0.1

|      |   |                  |
|------|---|------------------|
| 0000 | ff ff ff ff ff ff 5c 87 9c 8a c8 39 08 06 00 01 | .....\.....9.... |
| 0010 | 08 00 06 04 00 01 5c 87 9c 8a c8 39 c0 a8 00 06 | ....\.....9....  |
| 0020 | 00 00 00 00 00 00 c0 a8 00 01                   | .....*           |

2. Does the ARP contain IP address of sender?

Ans: Yes, the ARP contain the IP address of sender

| arp |            |                   |                   |          |        |                                       |
|-----|------------|-------------------|-------------------|----------|--------|---------------------------------------|
| No. | Time       | Source            | Destination       | Protocol | Length | Info                                  |
| 122 | 20.785450  | IntelCor_8a:c8:39 | Broadcast         | ARP      | 42     | Who has 192.168.0.1? Tell 192.168.0.6 |
| 123 | 20.787786  | D-LinkIn_a7:c6:ab | IntelCor_8a:c8:39 | ARP      | 42     | 192.168.0.1 is at f4:8c:eb:a7:c6:ab   |
| 205 | 42.146344  | IntelCor_8a:c8:39 | Broadcast         | ARP      | 42     | Who has 192.168.0.1? Tell 192.168.0.6 |
| 206 | 42.163929  | D-LinkIn_a7:c6:ab | IntelCor_8a:c8:39 | ARP      | 42     | 192.168.0.1 is at f4:8c:eb:a7:c6:ab   |
| 531 | 134.347117 | XiaomiCo_e7:6e:78 | Broadcast         | ARP      | 42     | Who has 192.168.0.7? Tell 192.168.0.2 |

Address Resolution Protocol (request)

Hardware type: Ethernet (1)

Protocol type: IPv4 (0x0800)

Hardware size: 6

Protocol size: 4

Opcode: request (1)

Sender MAC address: IntelCor\_8a:c8:39 (5c:87:9c:8a:c8:39)

Sender IP address: 192.168.0.6

Target MAC address: 00:00:00\_00:00:00 (00:00:00:00:00:00)

Target IP address: 192.168.0.1

|      |   |                 |
|------|---|-----------------|
| 0000 | ff ff ff ff ff ff 5c 87 9c 8a c8 39 08 06 00 01 | .....\.....9... |
| 0010 | 08 00 06 04 00 01 5c 87 9c 8a c8 39 c0 a8 00 06 | .....\.....9... |
| 0020 | 00 00 00 00 00 00 c0 a8 00 01                   | ..... ..        |

3. Find the ARP response corresponding to the request. How many bytes from the beginning does the ARP opcode field begin? What is its value?

Ans: 20 bytes from the beginning to ARP code. The opcode value is 2 -reply (2)

arp

| No. | Time       | Source            | Destination       | Protocol | Length | Info                                  |
|-----|------------|-------------------|-------------------|----------|--------|---------------------------------------|
| 122 | 20.785450  | IntelCor_8a:c8:39 | Broadcast         | ARP      | 42     | Who has 192.168.0.1? Tell 192.168.0.6 |
| 123 | 20.787786  | D-LinkIn_a7:c6:ab | IntelCor_8a:c8:39 | ARP      | 42     | 192.168.0.1 is at f4:8c:eb:a7:c6:ab   |
| 205 | 42.146344  | IntelCor_8a:c8:39 | Broadcast         | ARP      | 42     | Who has 192.168.0.1? Tell 192.168.0.6 |
| 206 | 42.163929  | D-LinkIn_a7:c6:ab | IntelCor_8a:c8:39 | ARP      | 42     | 192.168.0.1 is at f4:8c:eb:a7:c6:ab   |
| 531 | 134.347117 | XiaomiCo_e7:6e:78 | Broadcast         | ARP      | 42     | Who has 192.168.0.7? Tell 192.168.0.2 |

Address Resolution Protocol (reply)  
Hardware type: Ethernet (1)  
Protocol type: IPv4 (0x0800)  
Hardware size: 6  
Protocol size: 4  
Opcode: reply (2)  
Sender MAC address: D-LinkIn\_a7:c6:ab (f4:8c:eb:a7:c6:ab)  
Sender IP address: 192.168.0.1  
Target MAC address: IntelCor\_8a:c8:39 (5c:87:9c:8a:c8:39)  
Target IP address: 192.168.0.6

0000 5c 87 9c 8a c8 39 f4 8c eb a7 c6 ab 08 06 00 01 \....9.....  
0010 08 00 06 04 00 02 f4 8c eb a7 c6 ab c0 a8 00 01 ....:.....  
0020 5c 87 9c 8a c8 39 c0 a8 00 06 \....9..

Bytes 20-21: Opcode (arp.opcode)

#### 4. What are the values of source and destination addresses in ARP response?

LAB7 week 2.pcapng

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arp

| No. | Time       | Source            | Destination       | Protocol | Length | Info                                  |
|-----|------------|-------------------|-------------------|----------|--------|---------------------------------------|
| 122 | 20.785450  | IntelCor_8a:c8:39 | Broadcast         | ARP      | 42     | who has 192.168.0.1? Tell 192.168.0.6 |
| 123 | 20.787786  | D-LinkIn_a7:c6:ab | IntelCor_8a:c8:39 | ARP      | 42     | 192.168.0.1 is at f4:8c:eb:a7:c6:ab   |
| 205 | 42.146344  | IntelCor_8a:c8:39 | Broadcast         | ARP      | 42     | who has 192.168.0.1? Tell 192.168.0.6 |
| 206 | 42.163929  | D-LinkIn_a7:c6:ab | IntelCor_8a:c8:39 | ARP      | 42     | 192.168.0.1 is at f4:8c:eb:a7:c6:ab   |
| 531 | 134.347117 | XiaomiCo_e7:6e:78 | Broadcast         | ARP      | 42     | who has 192.168.0.7? Tell 192.168.0.2 |

▼ Address Resolution Protocol (reply)

Hardware type: Ethernet (1)  
Protocol type: IPv4 (0x0800)  
Hardware size: 6  
Protocol size: 4  
Opcode: reply (2)

Sender MAC address: D-LinkIn\_a7:c6:ab (f4:8c:eb:a7:c6:ab) → Source MAC and IP address  
Sender IP address: 192.168.0.1  
Target MAC address: IntelCor\_8a:c8:39 (8c:87:9c:8a:c8:39) → Destination MAC and IP address  
Target IP address: 192.168.0.6

0000 5c 87 9c 8a c8 39 f4 8c eb a7 c6 ab 08 06 00 01 \....9... ..  
0010 08 00 06 04 00 02 f4 8c eb a7 c6 ab c0 a8 00 01 .... ..  
0020 5c 87 9c 8a c8 39 c0 a8 00 06 \....9... ..