In the name of God

University of Tehran

ECE faculty

Computer Networks

Wireshark Lab

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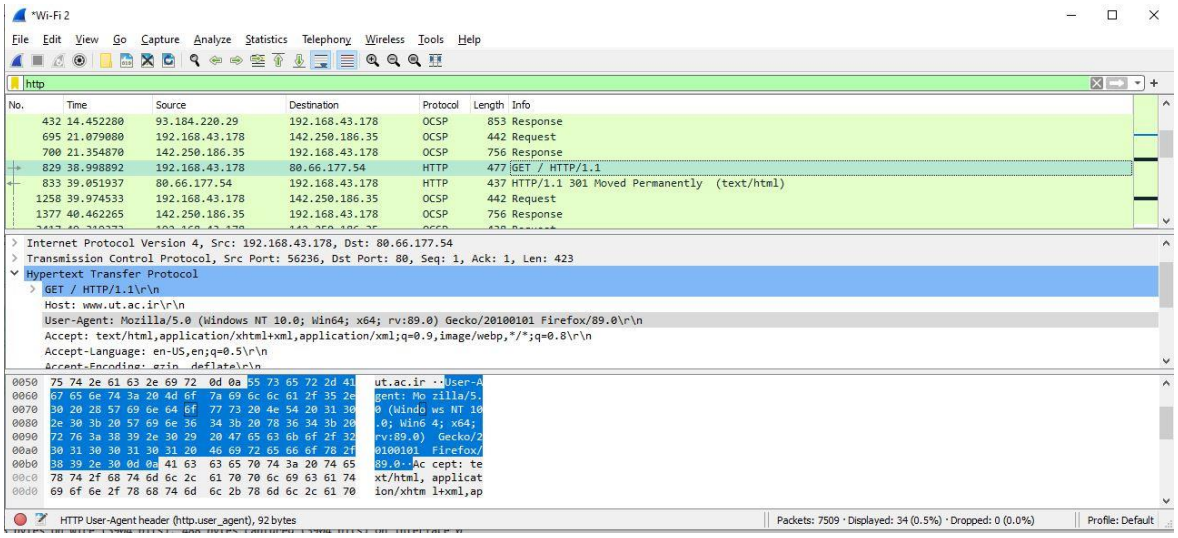
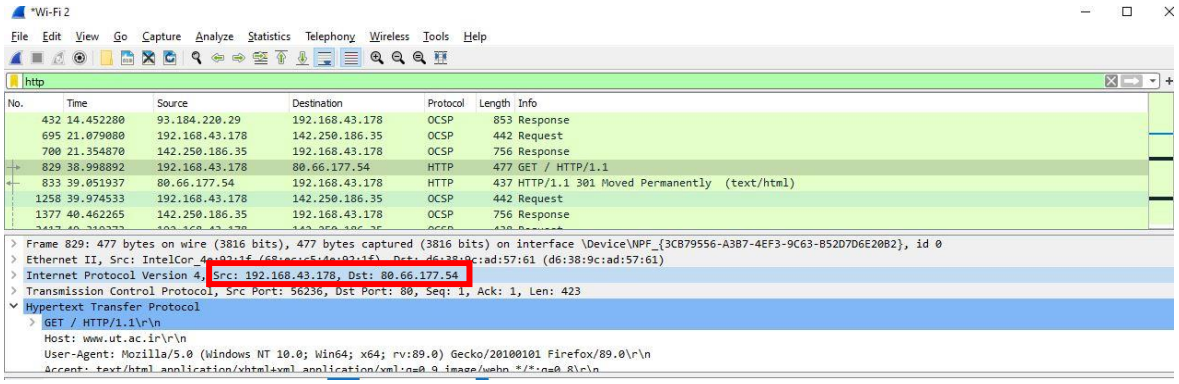
1400

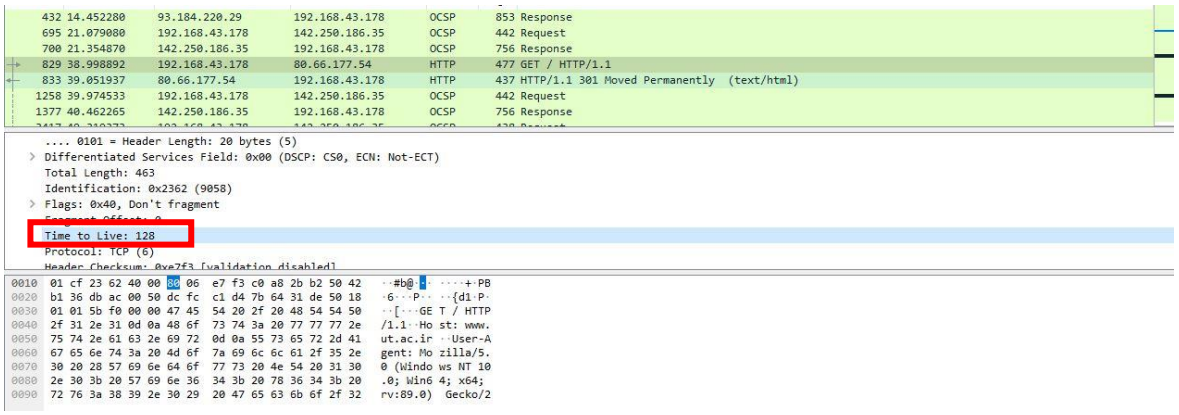
Part1: Capturing and analyzing Ethernet and IP headers



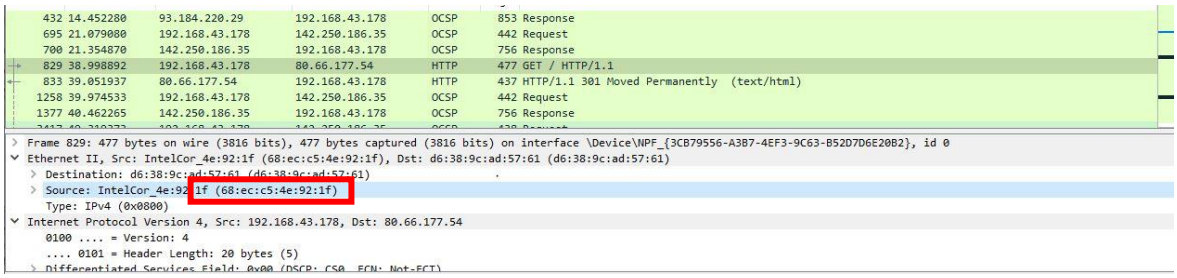
1) It is mentioned in the below picture, Source is 192.168.43.178 and Destination is 80.66.177.54.



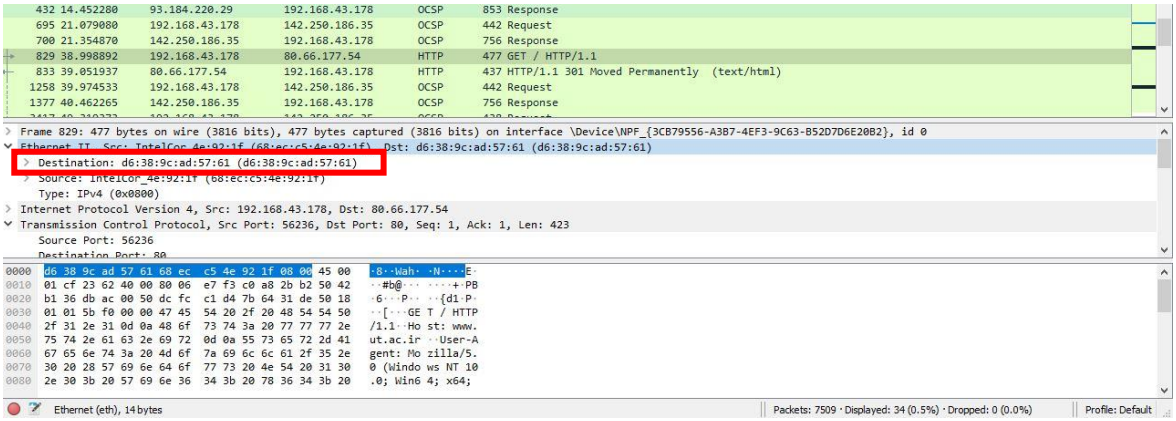
2)



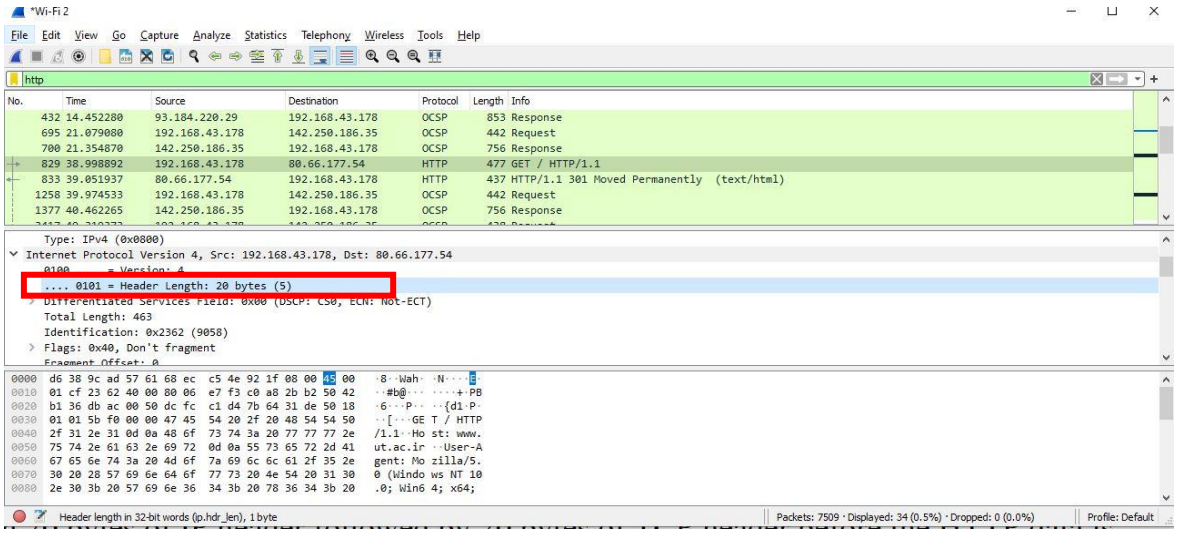
3)



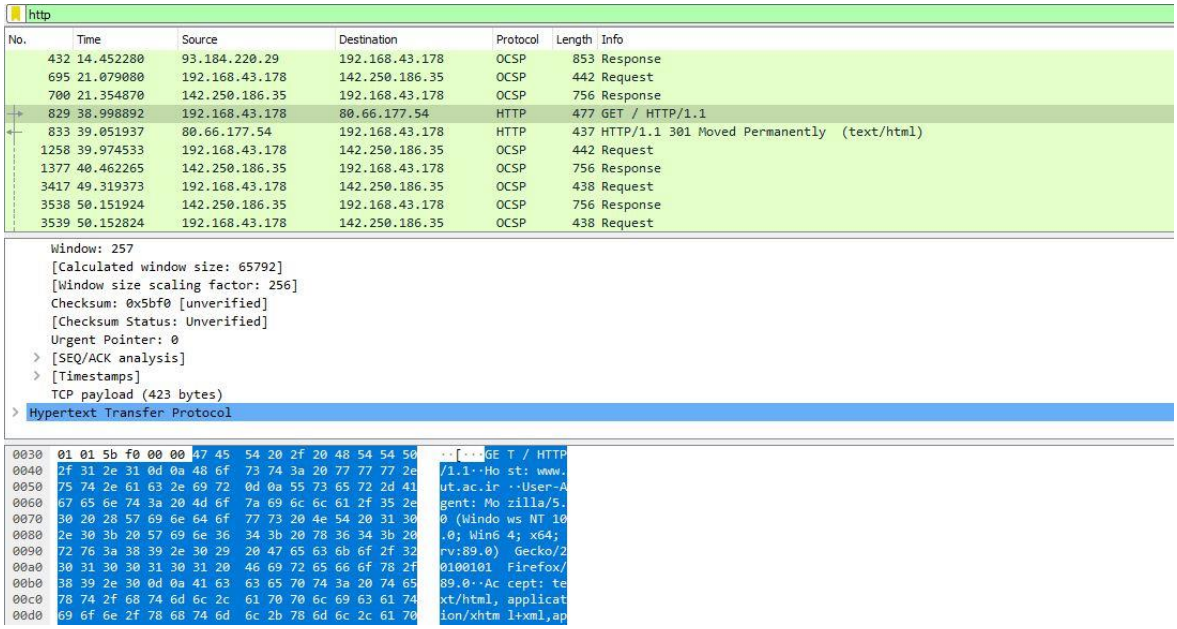
4) I use Ethernet through Hotspot so this is my mobile address:



5)



6) As it is shown below there is 52 bytes in the Ethernet frame which 14 bytes are for Ethernet frame, 20 bytes for IP header and at the end 20 bytes for TCP header.



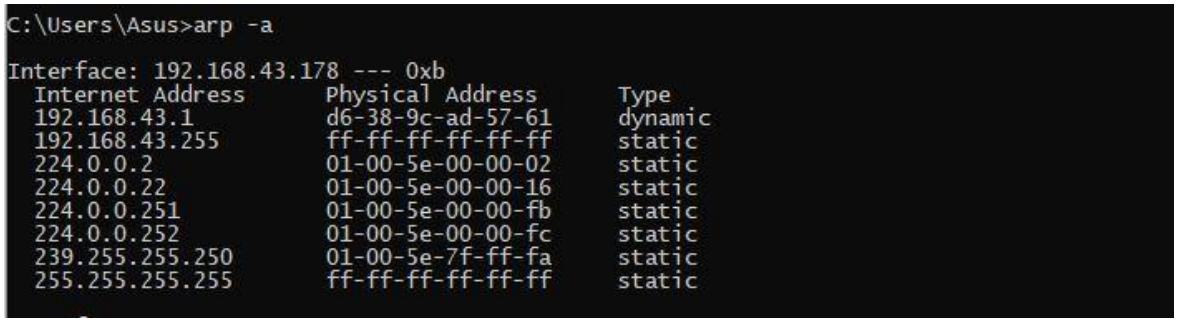
Part 2. The Address Resolution Protocol

1) s

Internet Address: IP Address

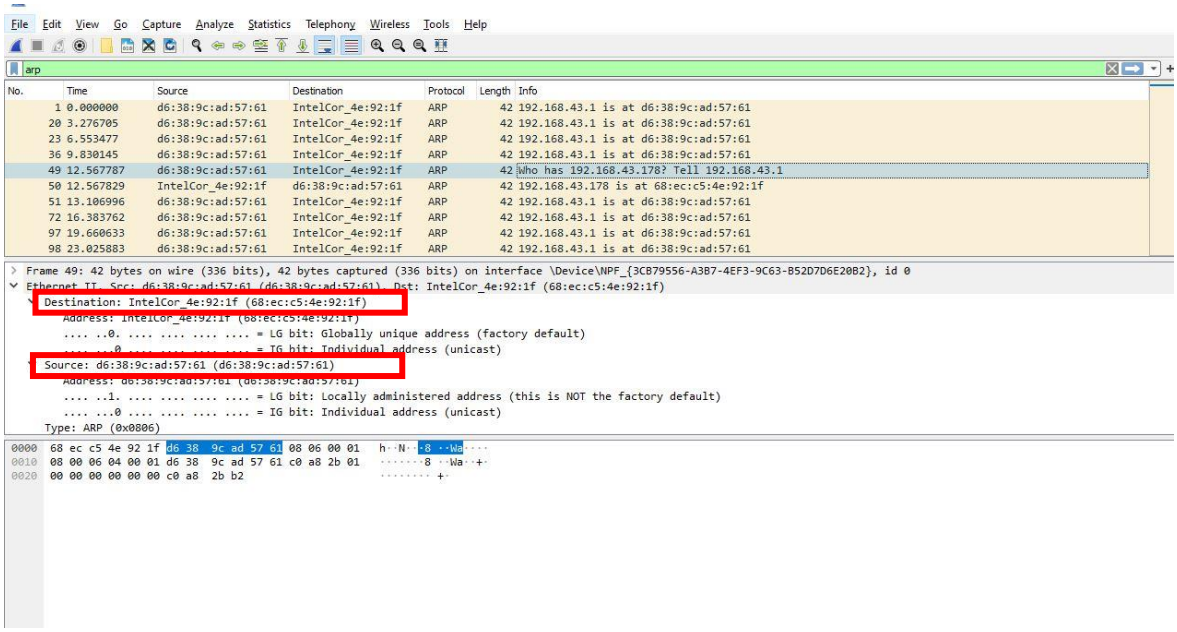
Physical Address: the MAC Address

Type: The protocol type



2)

a.



b. The hex value of ARP is 0x0806. The corresponding upper layer protocol is ARP.

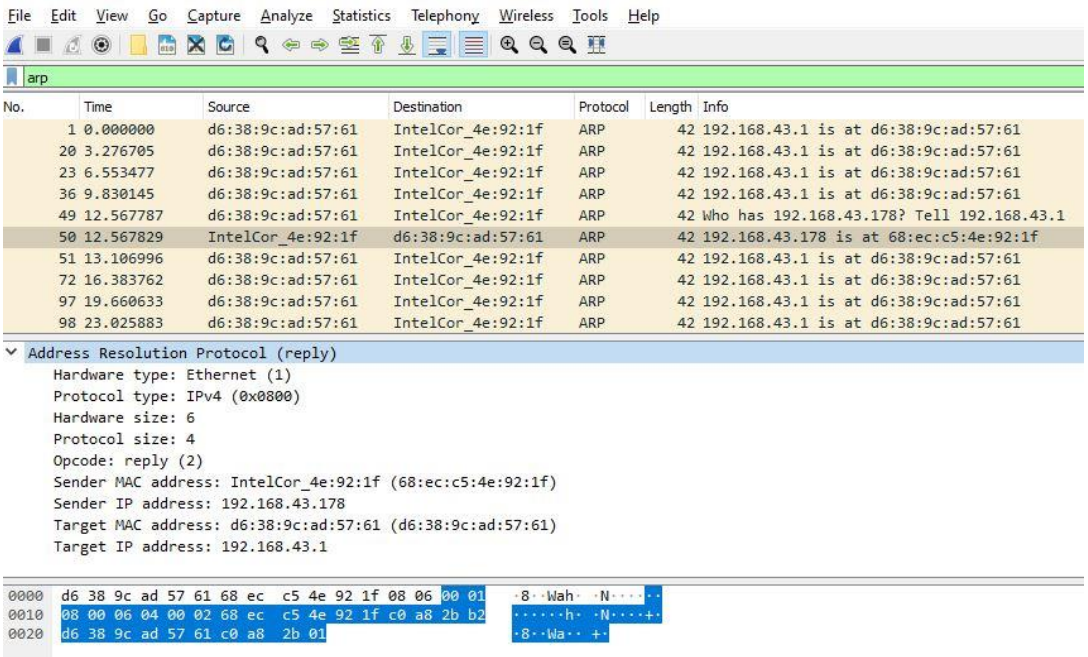
c. According to the above figure: 0x001(1 in decimal).

d. Yes, it contains IP address of the sender and it's (192.168.43.178)

e. The field "Target MAC address" is set to "00:00:00:00:00:00" to question the machine whose corresponding IP address (192.168.43.1) is being queried.

3)

a. 0x002

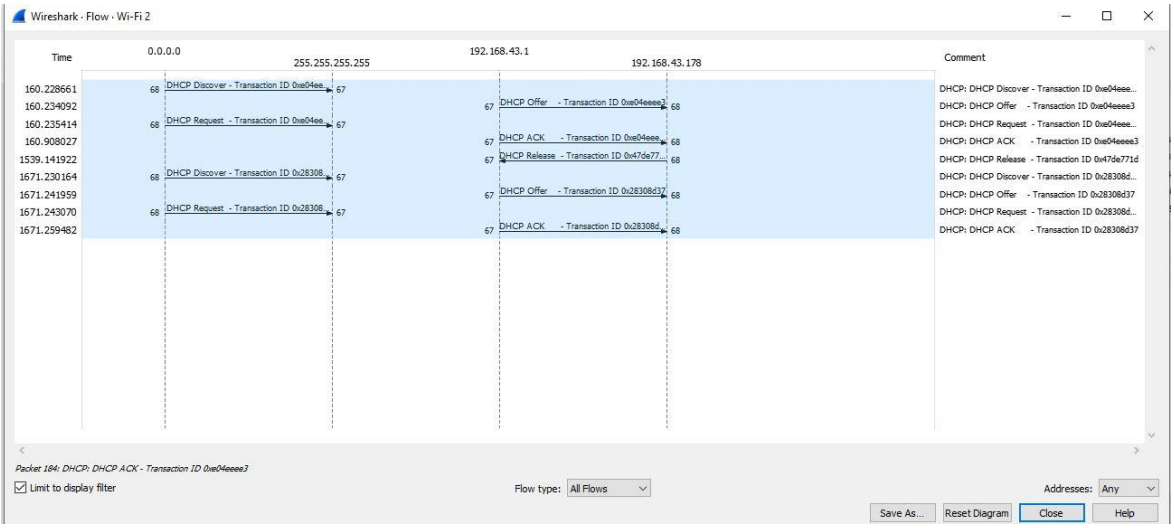


b. The answer to the earlier ARP request appears in the" Sender MAC address" field, which contains the Ethernet address 68:ec:c5:4e:92:1f for the sender with IP address 192.168.43.178

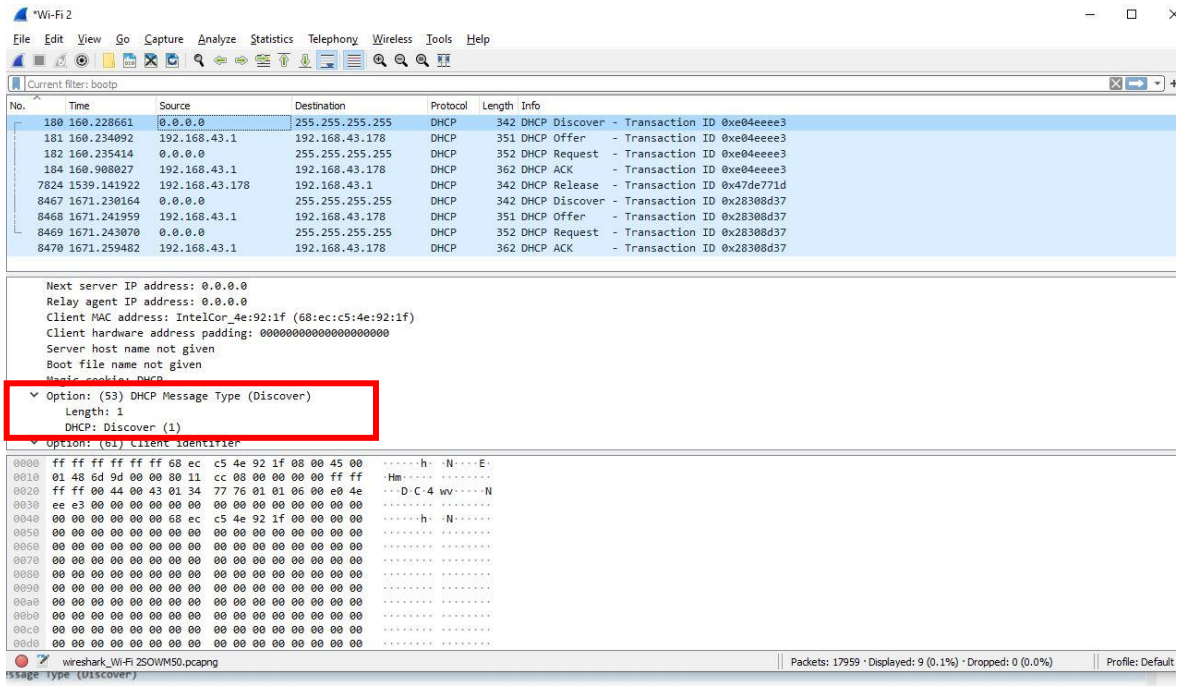
c. According to the above figure, Source: 68:ec:c5:4e:92:1f and Destination: d6:38:9c:ad:57:61.

Part 3. DHCP

1)

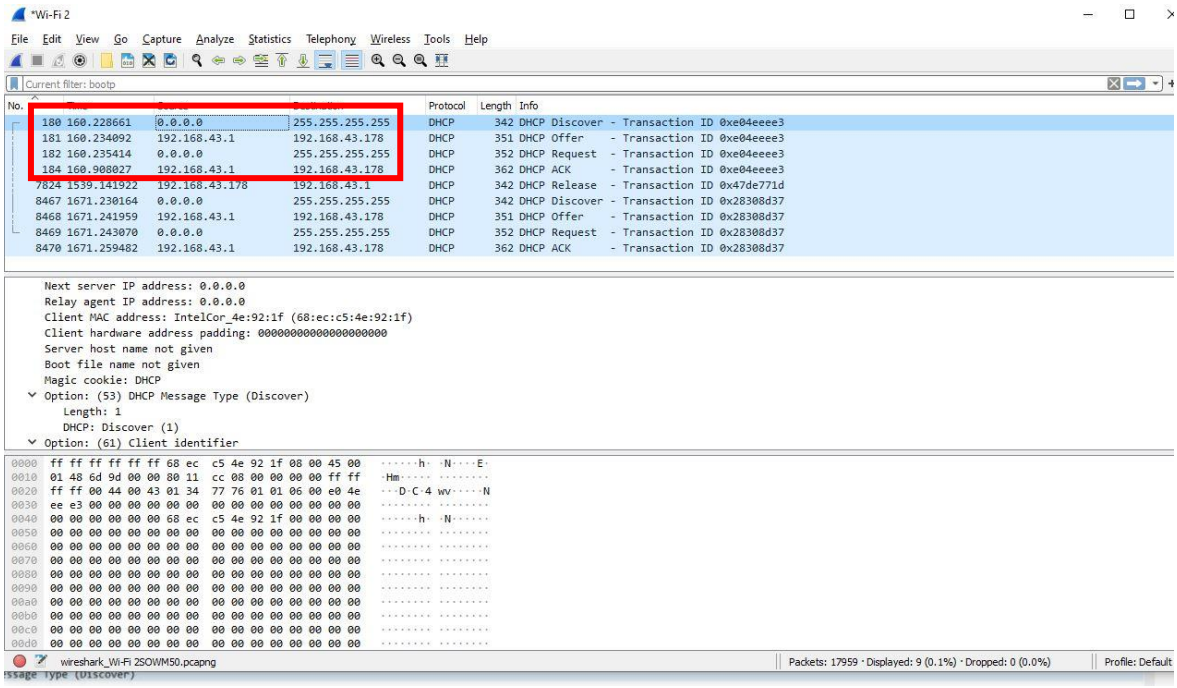


2) The values which differentiate the Discover message from the Request message are in "Option(53): DHCP Message Type".

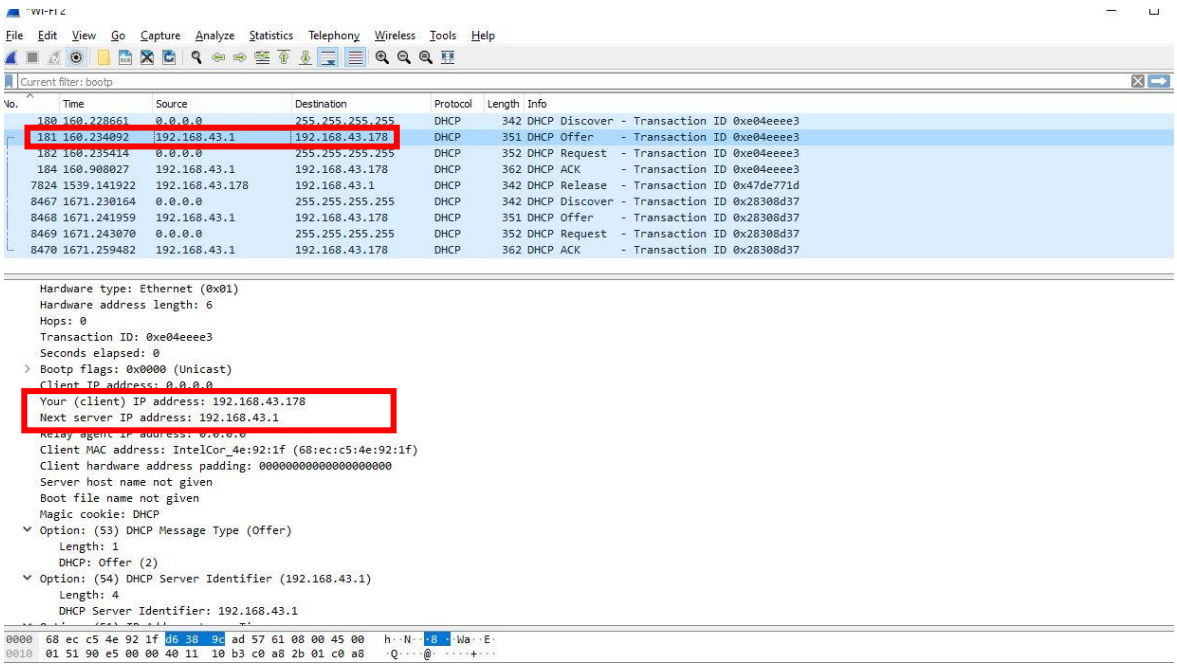


3) According to the above picture, Transaction ID in each of first four is 0xe04eeee93. Transaction-ID in the second set is 0x28308d37. The purpose of **transaction ID** is that the host can differentiate between different requests made by the user.

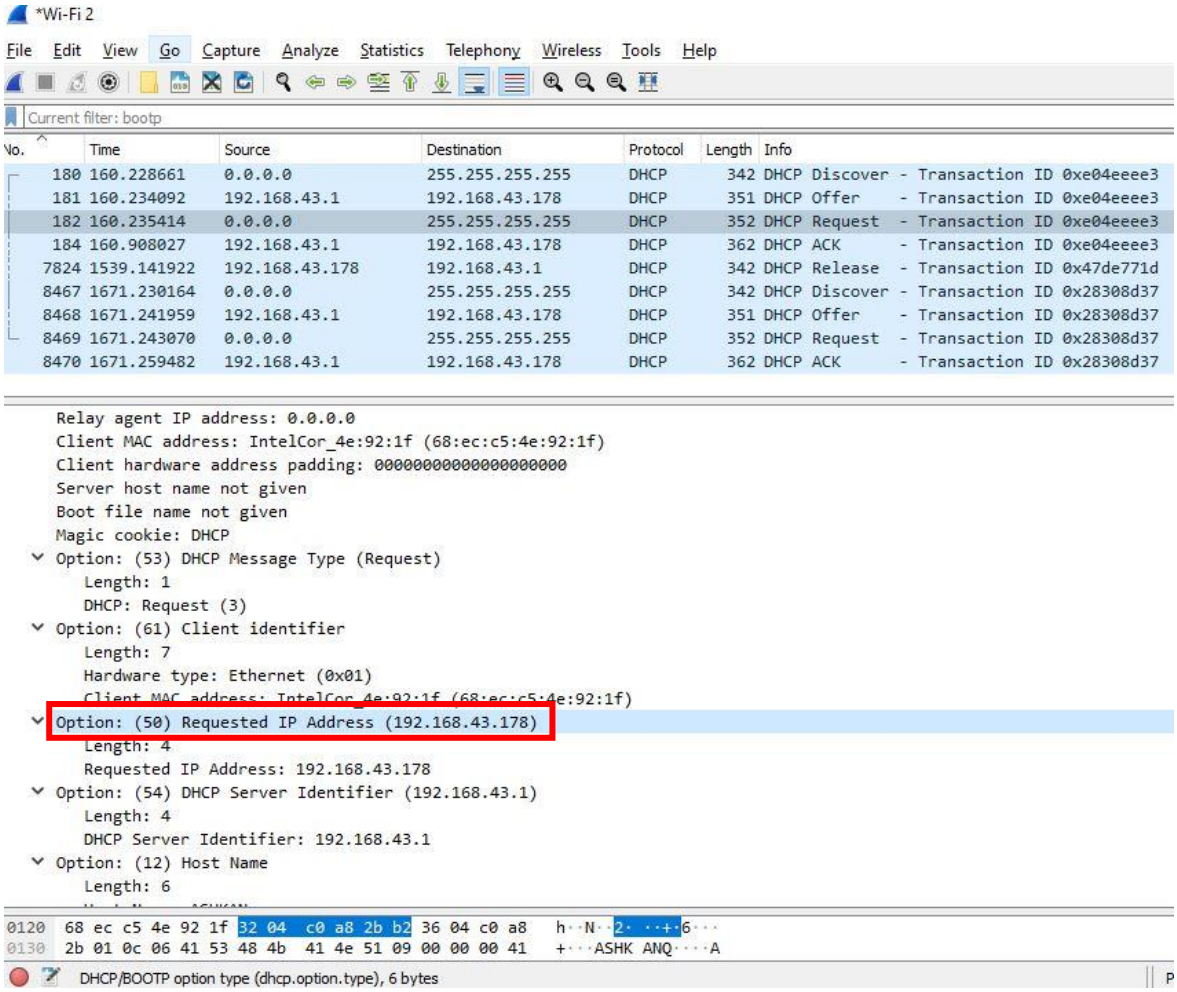
4)



5) The IP address of my DHCP server is 192.168.43.1
6) The DHCP server offered the IP address 192.168.43.178 to my client.



7) Yes, in option(50) we observe request IP address is 192.168.43.178.



8) The purpose of a lease is to limit the length of time that a client can use an IP address.