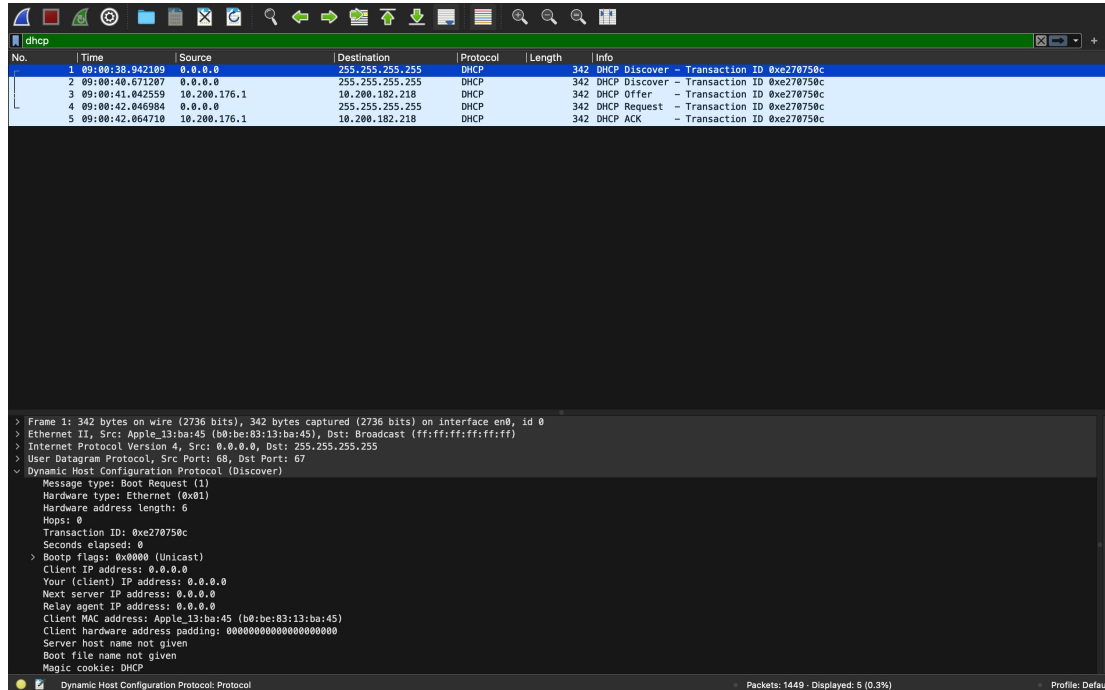


# LAB9

## 210010033



The image shows a Wireshark packet capture of a DHCP Discover message. The packet list at the top shows five packets: a DHCP Discover (No. 1), a DHCP Offer (No. 2), a DHCP Request (No. 3), a DHCP ACK (No. 4), and a DHCP ACK (No. 5). The selected packet (No. 1) is a DHCP Discover from source 0.0.0.0 to destination 255.255.255.255. The packet details pane shows the following structure:

No.	Time	Source	Destination	Protocol	Length	Info
1	09:08:38.942189	0.0.0.0	255.255.255.255	DHCP	342	DHCP Discover - Transaction ID 0xe270750c
2	09:08:40.671287	0.0.0.0	255.255.255.255	DHCP	342	DHCP Offer - Transaction ID 0xe270750c
3	09:08:41.842559	10.200.176.1	10.200.182.218	DHCP	342	DHCP Request - Transaction ID 0xe270750c
4	09:08:42.046984	0.0.0.0	255.255.255.255	DHCP	342	DHCP ACK - Transaction ID 0xe270750c
5	09:08:42.064710	10.200.176.1	10.200.182.218	DHCP	342	DHCP ACK - Transaction ID 0xe270750c

The packet details pane for the selected packet (No. 1) shows the following structure:

- Frame 1: 342 bytes on wire (2736 bits), 342 bytes captured (2736 bits) on interface en0, id 0
- Ethernet II, Src: Apple\_13:ba:45 (b0:be:83:13:ba:45), Dst: Broadcast (ff:ff:ff:ff:ff:ff)
- Internet Protocol Version 4, Src: 0.0.0.0, Dst: 255.255.255.255
- User Datagram Protocol, Src Port: 68, Dst Port: 67
- Dynamic Host Configuration Protocol (Discover)
  - Message type: Boot Request (1)
  - Hardware type: Ethernet (0x01)
  - Hardware address length: 6
  - Hops: 0
  - Transaction ID: 0xe270750c
  - Seconds elapsed: 0
  - Bootp flags: 0x0000 (Unicast)
  - Client IP address: 0.0.0.0
  - Your (client) IP address: 0.0.0.0
  - Next server IP address: 0.0.0.0
  - Relay agent IP address: 0.0.0.0
  - Client MAC address: Apple\_13:ba:45 (b0:be:83:13:ba:45)
  - Client hardware address padding: 00000000000000000000
  - Server host name: not given
  - Boot file name: not given
  - Magic cookie: DHCP

1. It is sent using the UDP protocol.
2. Source IP is 0.0.0.0 .  
It's a designated address set by the administrator for a specific purpose until it's allocated the correct IP address by the DHCP server.
3. Destination IP is 255.255.255.255 .  
When this address is designated as the destination, it sends the packet to every device on the network.
4. Transaction ID is 0xe270750c
5. The other information that the client is requesting include Subnet Mask, Classless Static, Route Router, Domain

## Name Server, DHCP Captive-Portal, Domain Search.

6.

2	09:00:40.671207	0.0.0.0	255.255.255.255	DHCP	342 DHCP Discover - Transaction ID 0xe270750c
3	09:00:41.042559	10.200.176.1	10.200.182.218	DHCP	342 DHCP Offer - Transaction ID 0xe270750c

Both the Discover and Offer data-grams have the same transaction ID. Hence, we can say that this offer message is being sent in response to the previous mentioned DHCP Discover message.

7. Source IP is 10.200.176.1

It is the IP of DHCP server.

8. Destination IP is 10.200.182.218

It is the IP which DHCP server gave client.

9. Various information provided by the DHCP client are

DHCP Server Identifier: 10.200.176.1

IP Address Lease Time: 1 hour (3600)

Renewal Time Value: 30 minutes (1800)

Rebinding Time Value: 52 minutes, 30 seconds (3150)

Subnet Mask: 255.255.248.0

Domain Name Server: 10.250.200.3

First hop Router: 10.200.176.2

10. Source Port: 68

Destination Port: 67

11. Source IP is 0.0.0.0

It's a designated address set by the administrator for a specific purpose until it's allocated the correct IP address by the DHCP server.

12. Destination IP is 255.255.255.255

When this address is designated as the destination, it sends the packet to every device on the network.

13. Transaction ID is 0xe270750c  
Yes, it matches with that of the offer and discover messages.
14. There is no difference in between the entries in the 'parameter request list' option in this Request message and the same list option in the earlier Discover message
15. Source IP is 10.200.176.1  
Same as the Source IP in the DHCP offer datagram.
16. Destination IP is 10.200.182.218  
Same as the Destination IP in the DHCP offer datagram.
17. Your (client) IP address is the name of the field in the DHCP ACK message (as indicated in the Wireshark window) that contains the assigned client IP address.
18. DHCP server assigned this IP address for 1 hour.
19. The IP address of the first hop router as provided by the DHCP message is 10.200.176.2