HỌ TÊN : NGUYỄN XUÂN TRỰC

MSSV : 1513804

LỚP : L07

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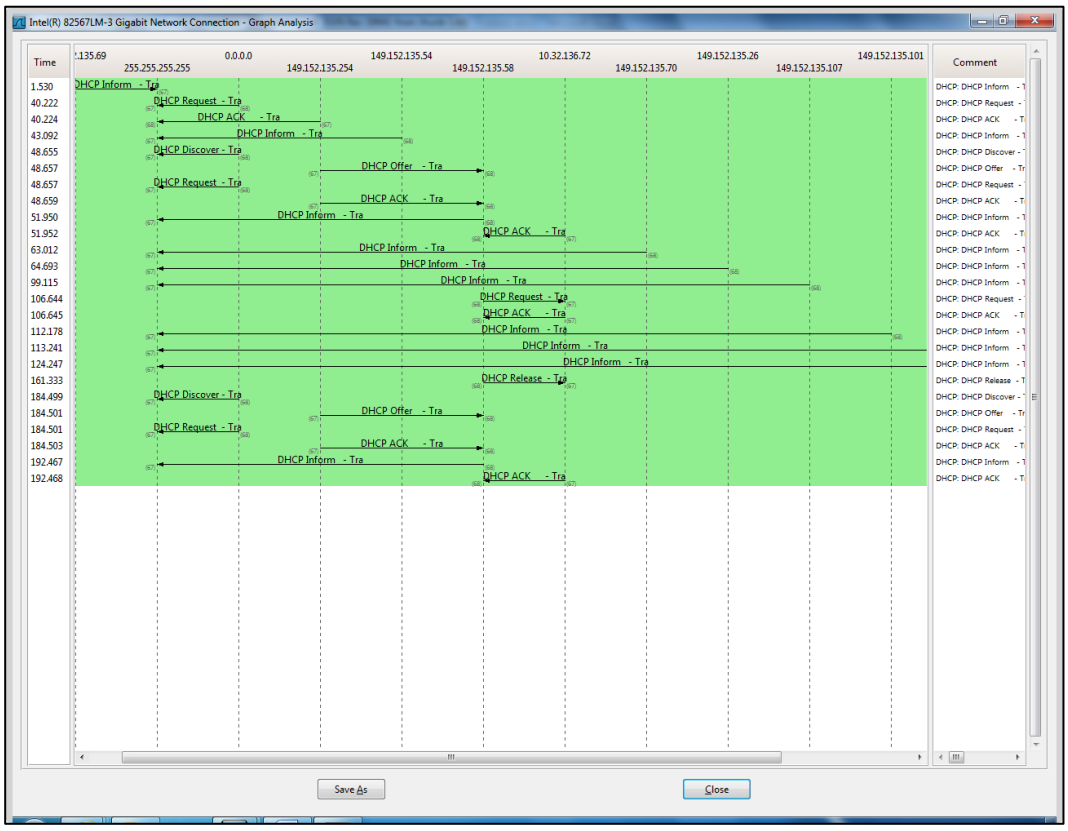
Question 01. Are DHCP messages sent over UDP or TCP?

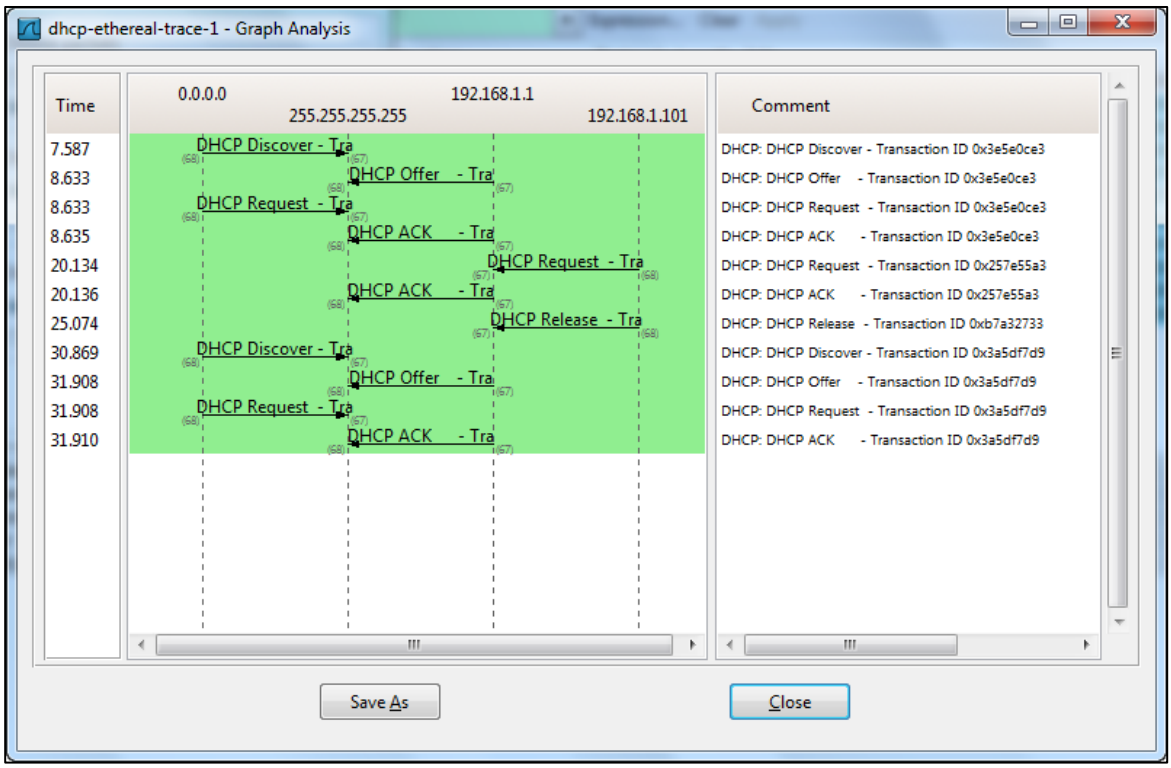
ANSWER

They are sent over UDP

Question 02. Draw a timing datagram illustrating the sequence of the first four-packet Discover/Offer/Request/ACK DHCP exchange between the client and server. For each packet, indicated the source and destination port numbers. Are the port numbers the same as in the example given in this lab assignment?

ANSWER





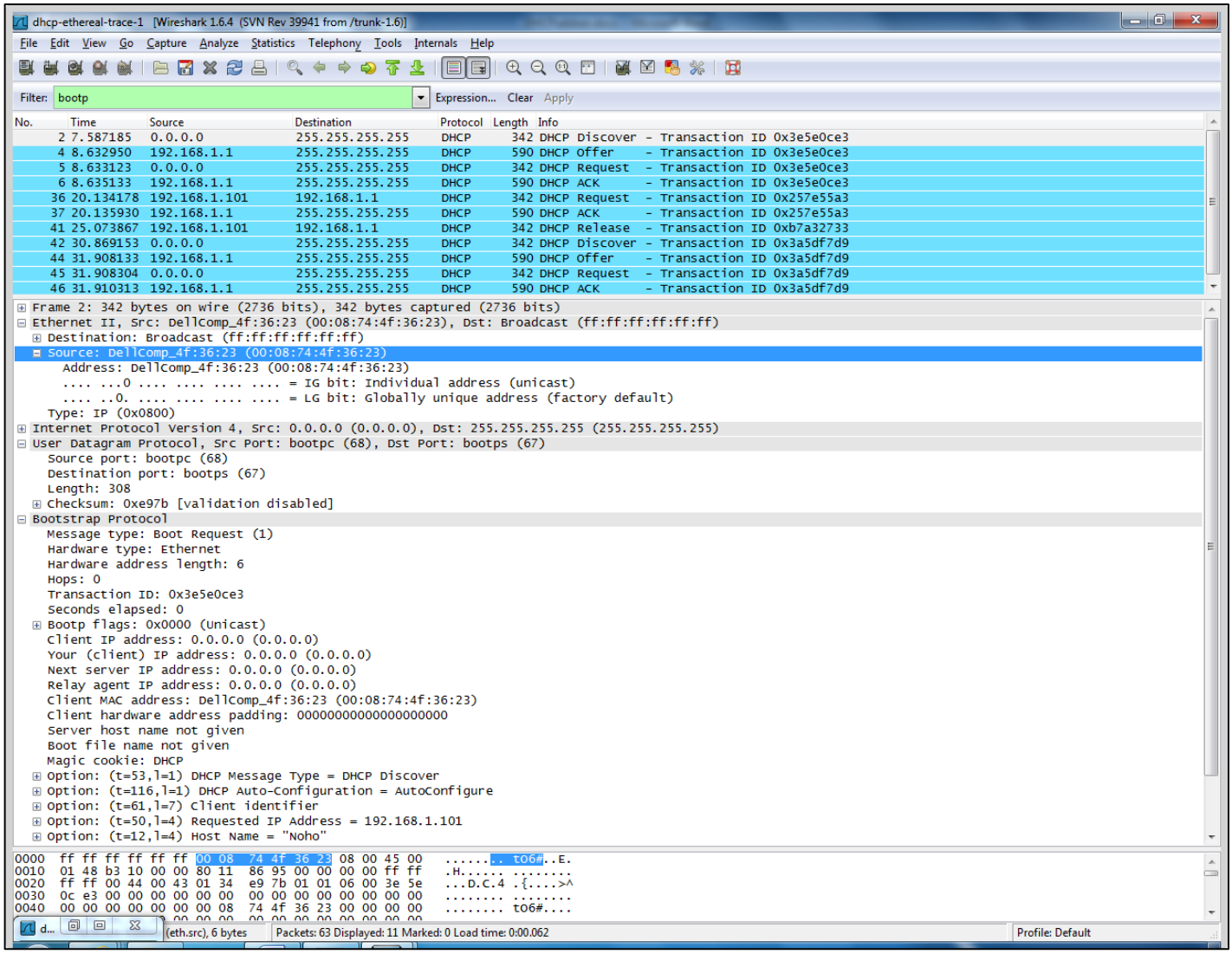
The Discover packet has a source port of 68 and destination port of 67

The Offer packet has a source port of 67 and a destination port of 68

The Request packet has a source port of 68 and a destination of 67

The ACK packet has a source port of 67 and a destination of 68

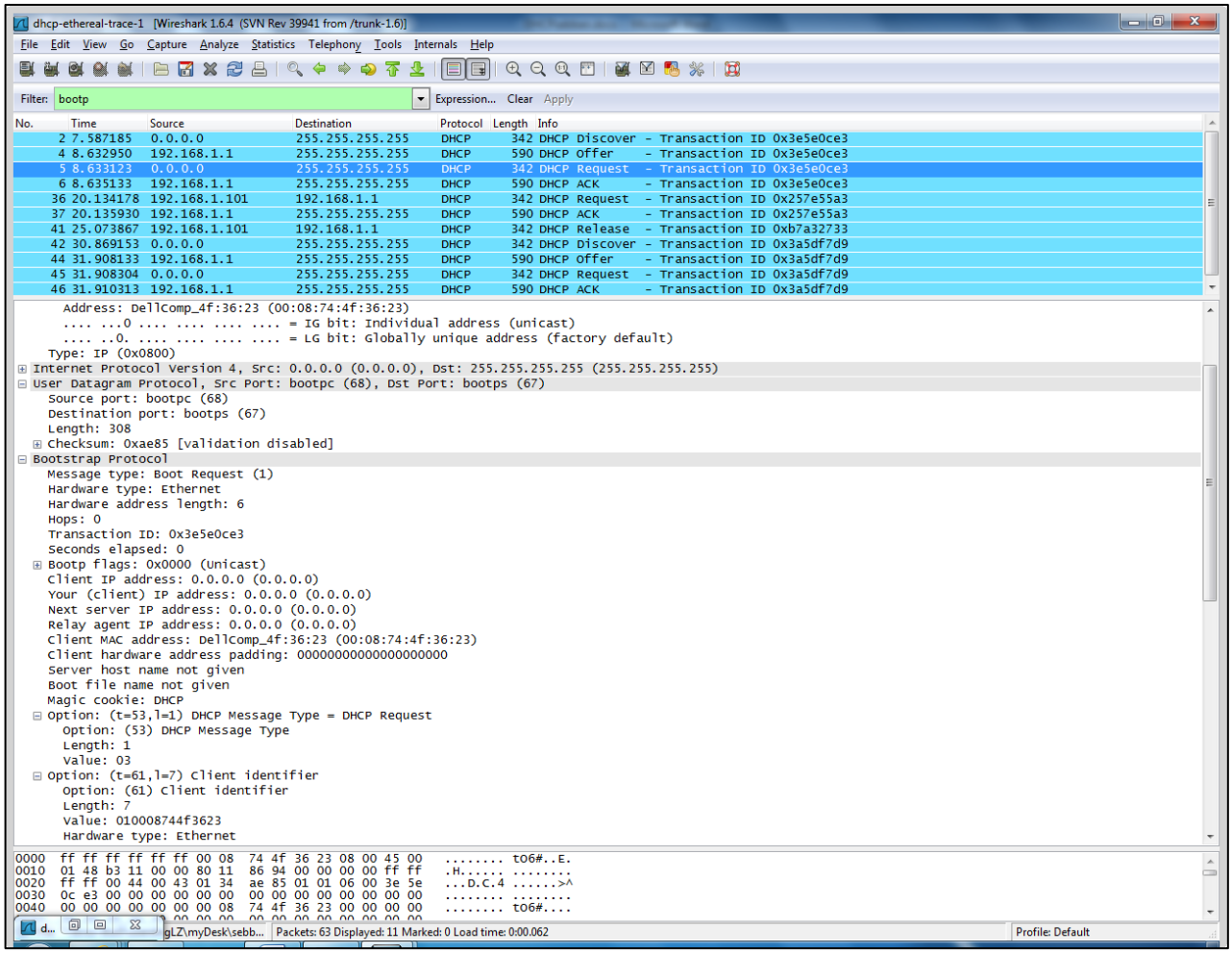
All of this corresponds to the example given in the lab.



Question 03. What is the link-layer (e.g., Ethernet) address of your host?

ANSWER

Source: DellComp_4f:36:23 (00:08:74:4f:36:23)



Question 04. What values in the DHCP discover message differentiate this message from the DHCP request message?

ANSWER

The message type value for a discover message is a 1, but the message type value for a request packet is a 3. This is how you can differentiate the two.

Question 05. What is the value of the Transaction-ID in each of the first four (Discover/Offer/Request/ACK) DHCP messages? What are the values of the Transaction-ID in the second set (Request/ACK) set of DHCP messages? What is the purpose of the Transaction-ID field?

ANSWER

The Transaction ID in the first four messages: 0x3e5e0ce3

The transaction ID in the second set of messages is 0x257e55a3

The transaction ID identifies if a message is part of a set of messages related to one transaction

Question 06. A host uses DHCP to obtain an IP address, among other things. But a host's IP address is not confirmed until the end of the four-message exchange! If the IP address is not set until the end of the four-message exchange, then what values are used in the IP datagrams in the four-message exchange? For each of the four DHCP messages (Discover/Offer/Request/ACK DHCP), indicate the source and destination IP addresses that are carried in the encapsulating IP datagram.

ANSWER

Discover source 0.0.0.0 Destination 255.255.255.255

Offer source 192.168.1.1 Destination 255.255.255.255

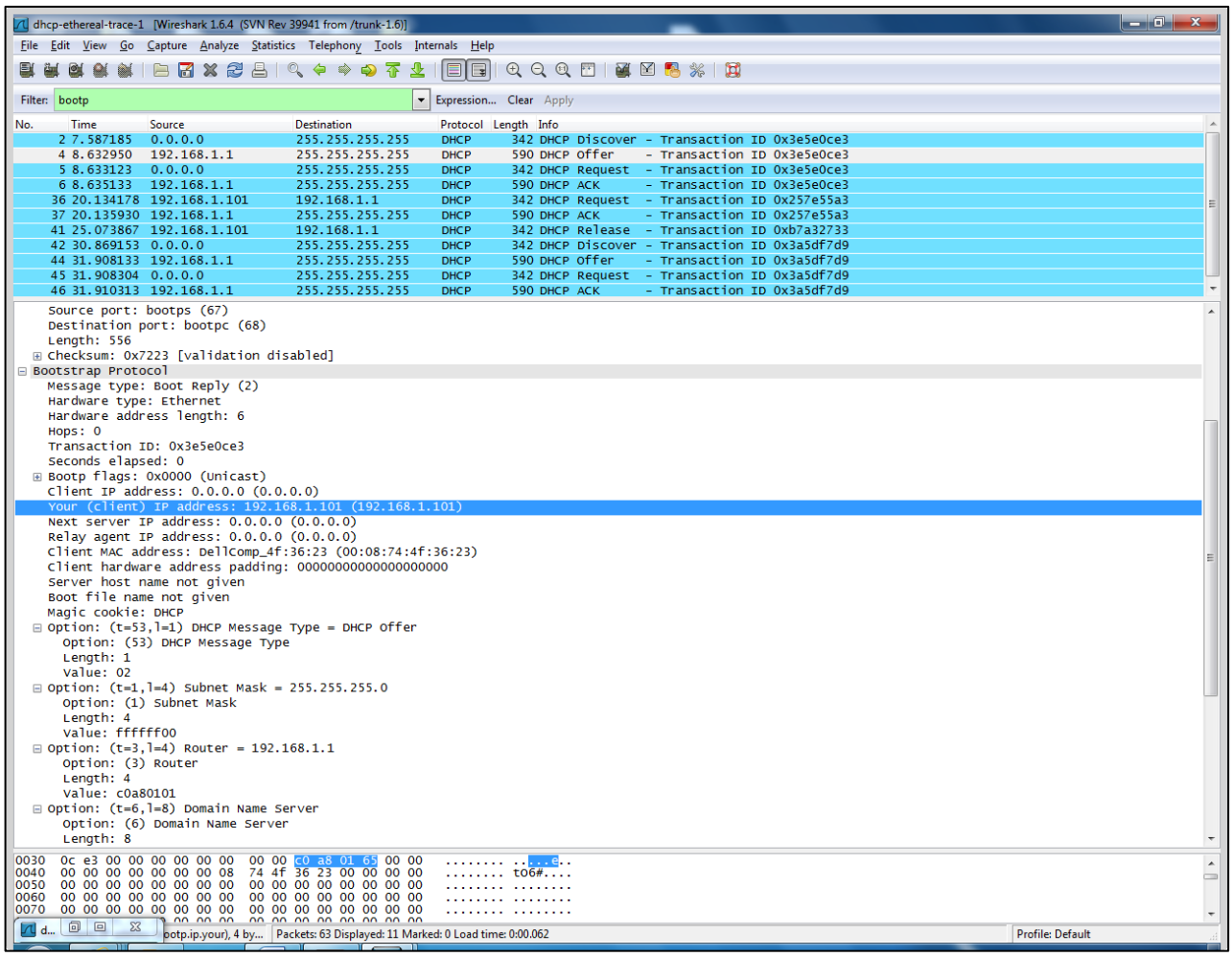
Request source 0.0.0.0 Destination 255.255.255.255

Ack DHCP 192.168.1.1 Destination 255.255.255.255

Question 07. What is the IP address of your DHCP server?

ANSWER

DHCP servers address 192.168.1.1



Question 08. What IP address is the DHCP server offering to your host in the DHCP Offer message? Indicate which DHCP message contains the offered DHCP address.

ANSWER

The DHCP server offers 192.168.1.1 as the ip address in the DHCP offer message.

Option: (t=53,l=1) DHCP Message Type = DHCP Offer

Question 09. In the example screenshot in this assignment, there is no relay agent between the host and the DHCP server. What values in the trace indicate the absence of a relay agent? Is there a relay agent in your experiment? If so what is the IP address of the agent?

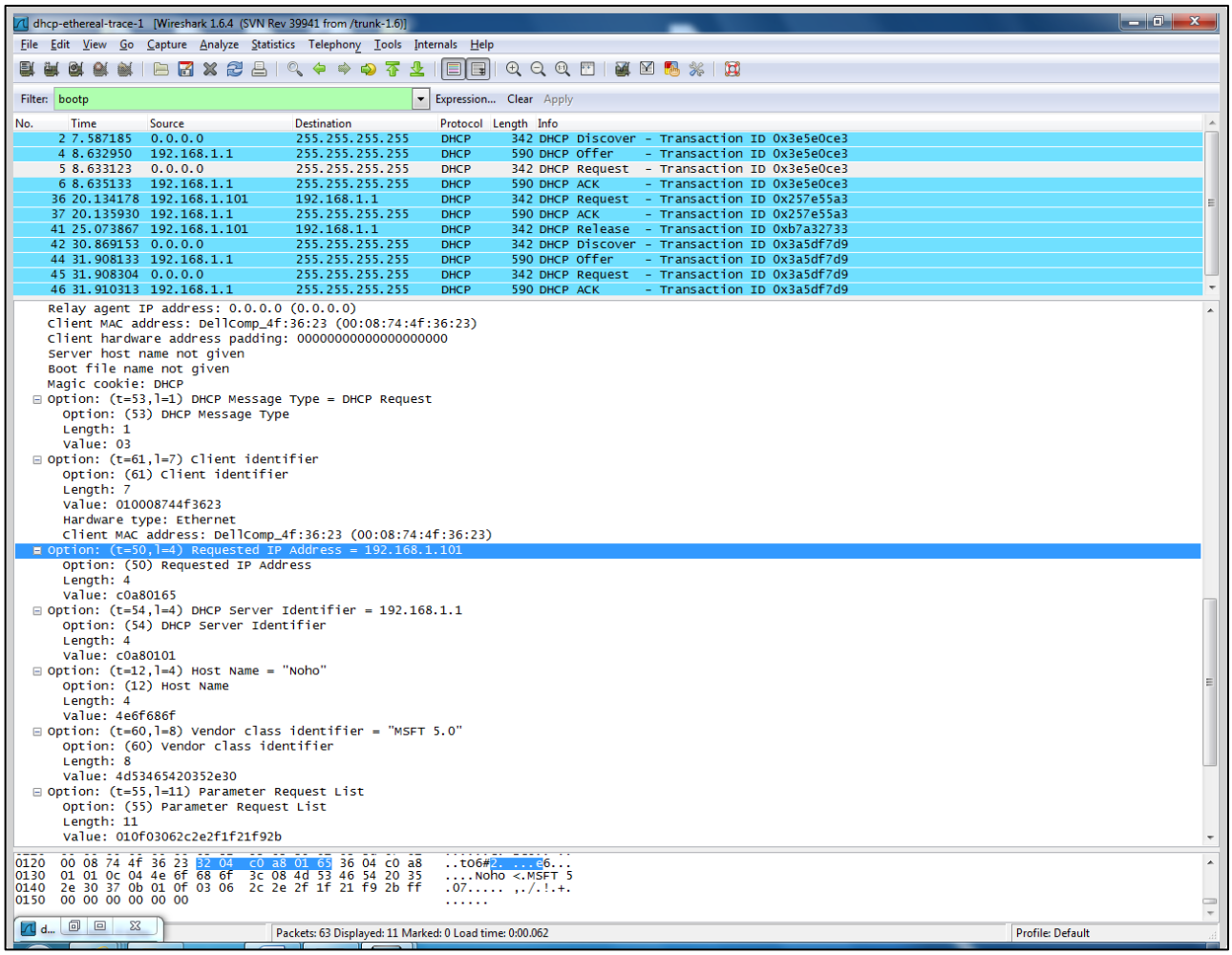
ANSWER

The ip address being 0.0.0.0 indicates the absence of a relay agent. There is no relay agent in my experiment.

Question 10. Explain the purpose of the router and subnet mask lines in the DHCP offer message.

ANSWER

The IP address for the router identifies the default internet gateway. The subnet mask defines the subnet that is available.



Question 11. In the example screenshots in this assignment, the host requests the offered IP address in the DHCP Request message. What happens in your own experiment?

ANSWER

The same thing occurs the host requests the offered ip address.

Option: (t=50,l=4) Requested IP Address = 192.168.1.101

Question 12. Explain the purpose of the lease time. How long is the lease time in your

experiment?

ANSWER

The lease time is the amount of the time the user is aloud connection to the router

Option: (t=51,l=4) IP Address Lease Time = 1 day

Question 13. What is the purpose of the DHCP release message? Does the DHCP server issue an acknowledgment of receipt of the client's DHCP request? What would happen if the client's DHCP release message is lost?

ANSWER

The DHCP release message tells the dhcp server that you want to cancel the ip address offered. The DHCP server will not issue an ack of recipt of the client's DHCP request. If the release message is lost then the dhcp server retains the ip address until the lease time expires.

Question 14. Clear the *bootp* filter from your Wireshark window. Were any ARP packets sent or received during the DHCP packet-exchange period? If so, explain the purpose of those ARP packets.

ANSWER

Yes, there was arp packets sent and received to map the mac address with the ip address