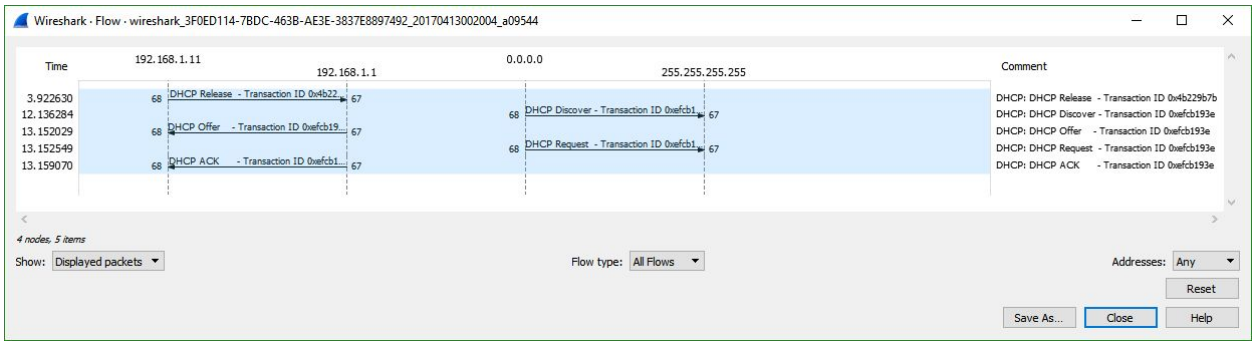
DHCP LAB

1. Are DHCP messages sent over UDP or TCP?

UDP

2. 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?

Port number 67 is same as in example.



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

Source: AsrockIn_43:ff:57 (bc:5f:f4:43:ff:57)

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

Option: (53) DHCP Message Type (Discover)

5. 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?

Transaction ID: 0x4b229b7b
Transaction ID: 0xefcb193e

6. What values are used in the IP datagrams in the four-message exchange?

	Source	Destination
Discover	0.0.0.0	255.255.255.255
Offer	192.168.1.1	192.18.1.11
Request	0.0.0.0	255.255.255.255
ACK	192.168.1.1	192.168.1.11

7. What is the IP address of your DHCP server?

192.168.1.1

8. 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.

DHCP Offer
Your (client) IP address: 192.168.1.11

9. 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?

Source IP of 0.0.0.0 indicates no relay.
No relay in experiment.

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

They define the default gateway for the IP address being offered.

11. In the DHCP trace file noted in footnote 2, the DHCP server offers a specific IP address to the client (see also question 8. above). In the client's response to the first server OFFER message, does the client accept this IP address? Where in the client's RESPONSE is the client's requested address?

Option: (50) Requested IP Address
Requested IP Address: 192.168.1.11

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

The purpose of lease time is to allow the router to re-assign the IP address if no longer used after the TTL is expired.

IP Address Lease Time: (86400s) 1 day

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?

The release message commands the router to break the current link between host and its assigned IP address. This allows the router to re-assign that IP address to the same or a different host. The router does not send an ACK back to the host. If the release message is lost, the IP address of the host will not be released.

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.

ARP messages were sent between host and router during the DHCP window, these arp messages are sending MAC address information.