

DHCP Questions:

Let's start by looking at the DHCP Discover message. Locate the IP datagram containing the first Discover message in your trace.

1. Is this DHCP Discover message sent out using UDP or TCP as the underlying transport protocol?
2. What is the source IP address used in the IP datagram containing the Discover message? Is there anything special about this address? Explain.
3. What is the destination IP address used in the datagram containing the Discover message. Is there anything special about this address? Explain.
4. What is the value in the transaction ID field of this DHCP Discover message?
5. Now inspect the options field in the DHCP Discover message. What are five pieces of information (beyond an IP address) that the client is suggesting or requesting to receive from the DHCP server as part of this DHCP transaction?

Now let's look at the DHCP Offer message. Locate the IP datagram containing the DHCP Offer message in your trace that was sent by a DHCP server in the response to the DHCP Discover message that you studied in questions 1-5 above

6. What is the *source* IP address used in the datagram containing the Offer message? Is there anything special about this address? Explain.
7. Now inspect the options field in the DHCP Offer message. What are five pieces of information that the DHCP server is providing to the DHCP client in the DHCP Offer message?

Locate the IP datagram containing the first DHCP Request message in your trace, and answer the following questions.

8. What is the destination IP address used in the datagram containing this Request message. Is there anything special about this address? Explain.
9. What is the value in the transaction ID field of this DHCP Request message? Does it match the transaction IDs of the earlier Discover and Offer messages?

Locate the IP datagram containing the first DHCP ACK message in your trace, and answer the following questions.

10. What is the source and destination IP address in the IP datagram containing this ACK message? Is there anything special about this address? Explain.
11. What is the IP address (returned by the DHCP server to the DHCP client in this DHCP ACK message) of the first-hop router on the default path from the client to the rest of the Internet?

NAT Questions:

12. What is the source IP address and source port number of the HTTP GET request in the **nat-inside-wireshark-trace1-1.pcapng** trace?
13. What are the source and destination IP addresses and port numbers of the HTTP GET request after NAT translation in the **nat-outside-wireshark-trace1-1.pcapng** file?
14. What time does the HTTP 200 OK response from the web server appear in the **nat-inside-wireshark-trace1-1.pcapng** trace?
15. How does NAT modify the IP address and port numbers when forwarding the HTTP response from the WAN side back to the client on the LAN side?
16. What fields in the IP datagram are altered by NAT during translation when forwarding HTTP messages between the LAN and WAN?