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**CSC 435 Assignment 5**

**DHCP Lab**

Screenshot of terminal (I use a Mac which doesn’t log as many things… and the commands are different):  
1. They are sent over UDP:

2. The messages go client —> server, server —> client, client —> server, server —> client, as shown below. The source/destination ports are 68/67, 67/68, 68/67, 67/68, respectively.



Yes, the port numbers would be the same.

3. Highlighted:



4. The differences can be seen below in the options populated (first is the discover messages, then the request message):





5. The first set has transaction ID



and the second has transaction ID



The purpose of this field is to make sure that the same set of DHCP messages are not intermixed with a different set by the DHCP server or the host.

6. See the below picture. The left IP address is the source and the right address is the destination:



7. See above picture. The IP address of the DHCP server is 192.168.1.1

8. See above picture. The DHCP server has offered 192.168.1.2 to my host. This is in the “DHCP Offer” message.

9. This is shown by the relay agent IP address of 0.0.0.0. In my example, there is also no relay agent:



10. These lines inform the host of the Default Gateway and the size of its local network.

11. The client does not yet accept this IP address. In the client’s response, the IP address can be found in the Option 50 (Requested IP address field).

12. The purpose of the lease time is so that an IP address is not permanently reserved. My lease tie is 1 day.



13. Its purpose is to revoke the assigned IP address. The DHCP server does not issue an acknowledgement of this. If the client’s message is lost, messages to that IP address will still be routed to this MAC address.

14. Yes, there were many. This is due to a new host joining the network and requesting the MAC addresses of other local machines (including the router, etc.).