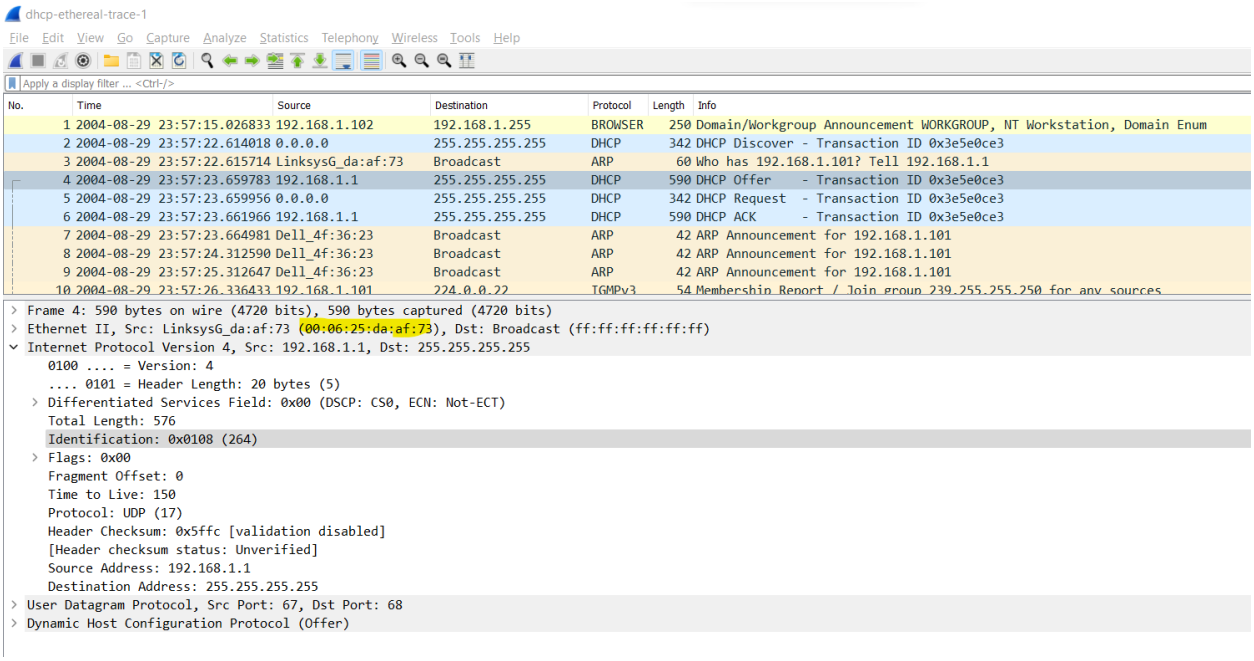
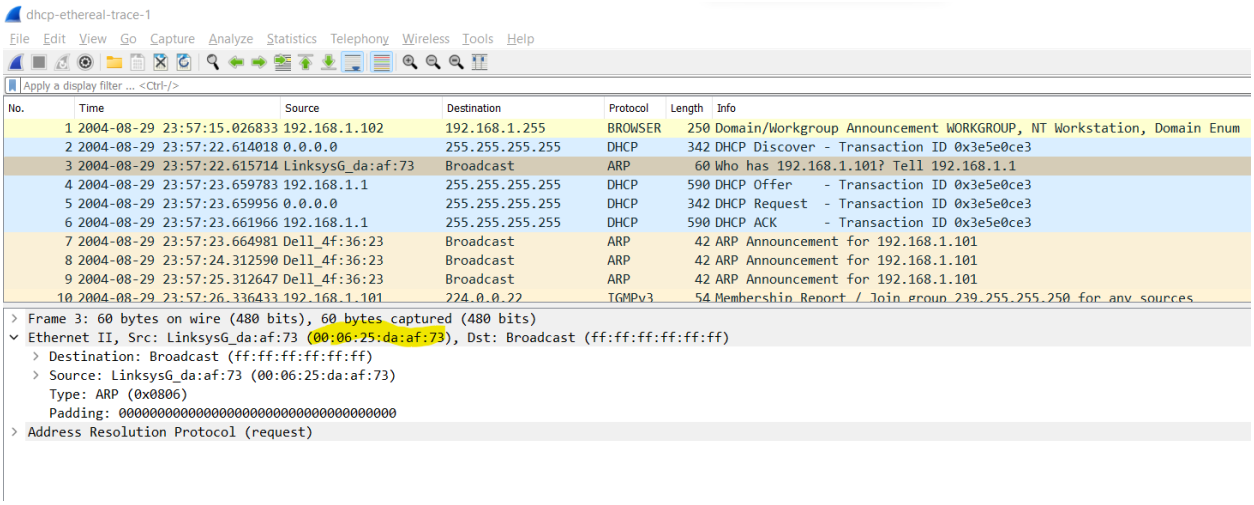
1/



The DHCP messages are sent via UDP(17).

3/



The ethernet address of my host is 00:06:25:da:af:73

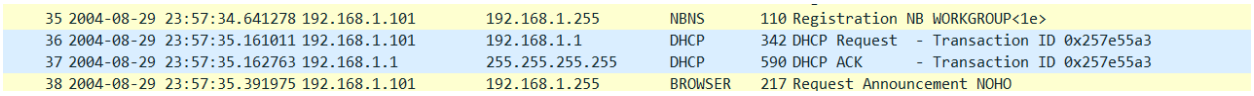
4/

DHCP Message Type

Request includes a server identifier field

5/

1st set of messages: 0x3e5e0ce3



35	2004-08-29 23:57:34.641278	192.168.1.101	192.168.1.255	NBNS	110	Registration NB WORKGROUP<1e>
36	2004-08-29 23:57:35.161011	192.168.1.101	192.168.1.1	DHCP	342	DHCP Request - Transaction ID 0x257e55a3
37	2004-08-29 23:57:35.162763	192.168.1.1	255.255.255.255	DHCP	590	DHCP ACK - Transaction ID 0x257e55a3
38	2004-08-29 23:57:35.391975	192.168.1.101	192.168.1.255	BROWSER	217	Request Announcement NOHO

2nd set of messages: 0x257e55a3

Purpose: The transaction ID is different so that the host can differentiate between different requests made by the user.

6/

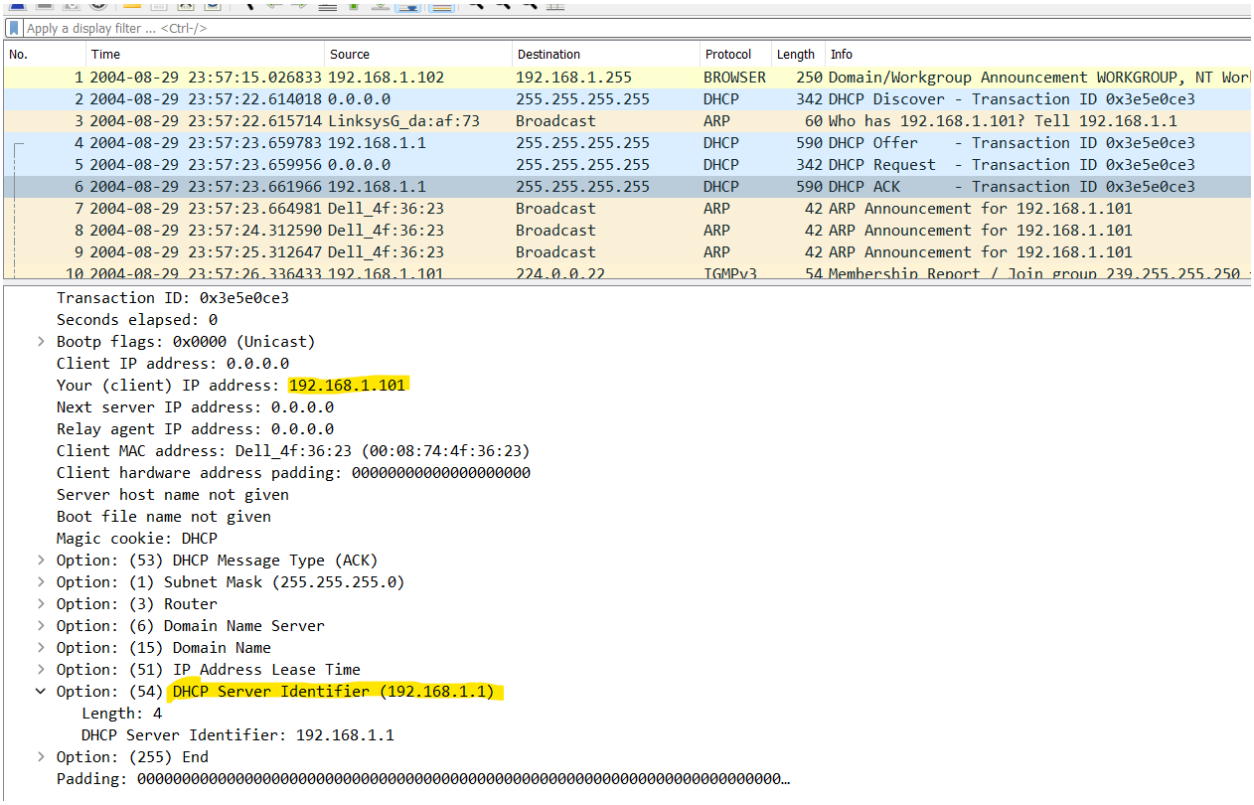
Discover: 0.0.0.0/255.255.255.255

Offer: 192.168.1.1/255.255.255.255

Request: 0.0.0.0/255.255.255.255

ACK:192.168.1.1/255.255.255.255

7/



Apply a display filter ... <Ctrl-/>

No.	Time	Source	Destination	Protocol	Length	Info
1	2004-08-29 23:57:15.026833	192.168.1.102	192.168.1.255	BROWSER	250	Domain/Workgroup Announcement WORKGROUP, NT Wor
2	2004-08-29 23:57:22.614018	0.0.0.0	255.255.255.255	DHCP	342	DHCP Discover - Transaction ID 0x3e5e0ce3
3	2004-08-29 23:57:22.615714	LinksysG_da:af:73	Broadcast	ARP	60	Who has 192.168.1.101? Tell 192.168.1.1
4	2004-08-29 23:57:23.659783	192.168.1.1	255.255.255.255	DHCP	590	DHCP Offer - Transaction ID 0x3e5e0ce3
5	2004-08-29 23:57:23.659956	0.0.0.0	255.255.255.255	DHCP	342	DHCP Request - Transaction ID 0x3e5e0ce3
6	2004-08-29 23:57:23.661966	192.168.1.1	255.255.255.255	DHCP	590	DHCP ACK - Transaction ID 0x3e5e0ce3
7	2004-08-29 23:57:23.664981	Dell_4f:36:23	Broadcast	ARP	42	ARP Announcement for 192.168.1.101
8	2004-08-29 23:57:24.312590	Dell_4f:36:23	Broadcast	ARP	42	ARP Announcement for 192.168.1.101
9	2004-08-29 23:57:25.312647	Dell_4f:36:23	Broadcast	ARP	42	ARP Announcement for 192.168.1.101
10	2004-08-29 23:57:26.336433	192.168.1.101	224.0.0.22	IGMPv3	54	Membership Report / Join group 239.255.255.250

```
Transaction ID: 0x3e5e0ce3
Seconds elapsed: 0
> Bootp flags: 0x0000 (Unicast)
Client IP address: 0.0.0.0
Your (client) IP address: 192.168.1.101
Next server IP address: 0.0.0.0
Relay agent IP address: 0.0.0.0
Client MAC address: Dell_4f:36:23 (00:08:74:4f:36:23)
Client hardware address padding: 00000000000000000000
Server host name not given
Boot file name not given
Magic cookie: DHCP
> Option: (53) DHCP Message Type (ACK)
> Option: (1) Subnet Mask (255.255.255.0)
> Option: (3) Router
> Option: (6) Domain Name Server
> Option: (15) Domain Name
> Option: (51) IP Address Lease Time
v Option: (54) DHCP Server Identifier (192.168.1.1)
    Length: 4
    DHCP Server Identifier: 192.168.1.1
> Option: (255) End
Padding: 000000000000000000000000000000000000000000000000000000000000000000000000…
```

DHCP server: 192.168.1.1

8/ My client is offered 192.168.1.101 by the DHCP server. The offer message contains the DHCP address offered by the server

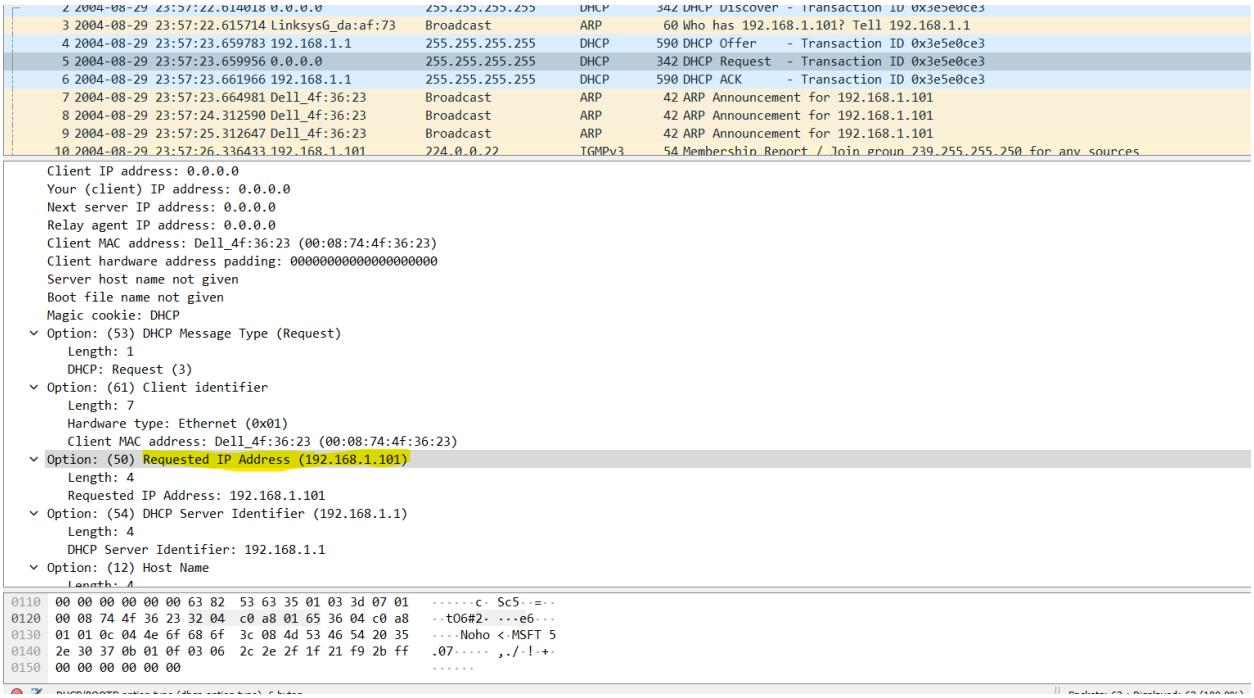
9/In the example given, the value that indicates there is no relay agent is 0.0.0.0, in the case of my capture, I also have a value for the relay agent of 0.0.0.0 indicating that I too did not have a relay agent.

10/

The subnet mask line tells the client which subnet mask to use.

The router line indicates where the client should send messages by default.

11/

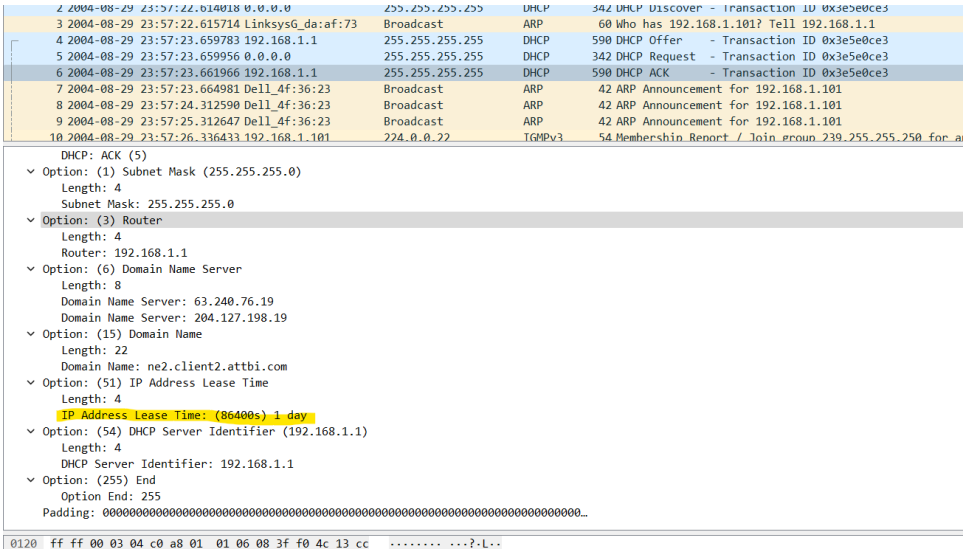


The client accepts the IP address given in the offer message within the request message. After being offered the IP address 192.168.1.101 in the offer message, my client sent back a message further requesting that specific IP address.

12/

The purpose of lease time is to tell the client how long they can use the specific IP address assigned by the server before they will have to be assigned a new one.

The lease time in my experiment is 86400 seconds or 1 day



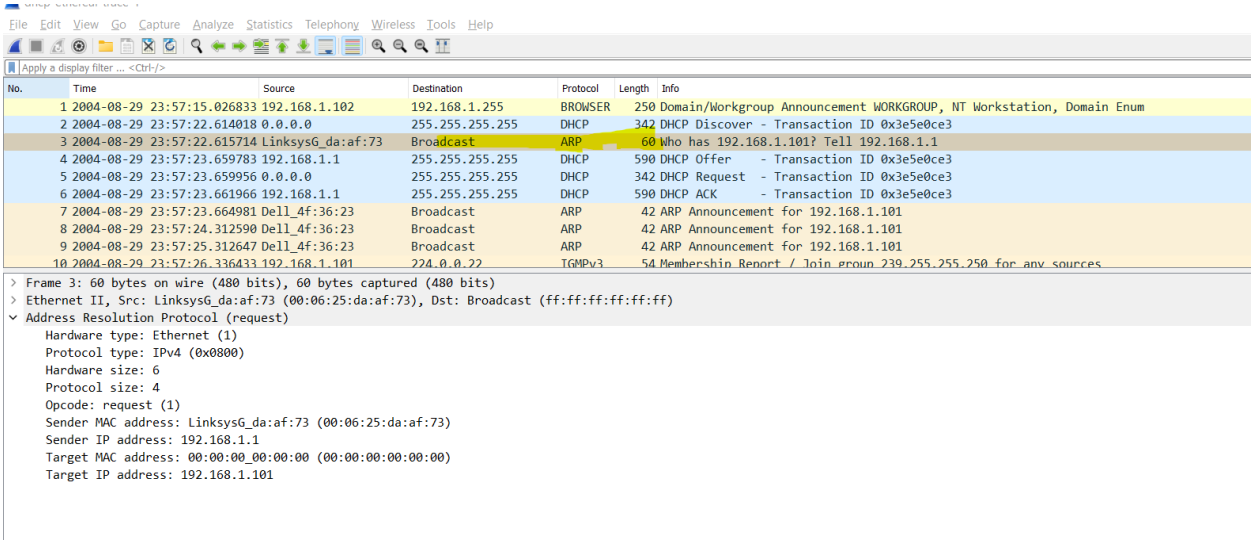
13/

The purpose of the release message is to release the IP address back to the server.

There is no verification that the release message has been received by the server.

If the message is lost, the client releases the IP address, but the server will not reassign that address until the clients lease on the address expires.

14/



Yes, they appear to be broadcasts sent out by the network to build up the known IP addresses by the clients network.