

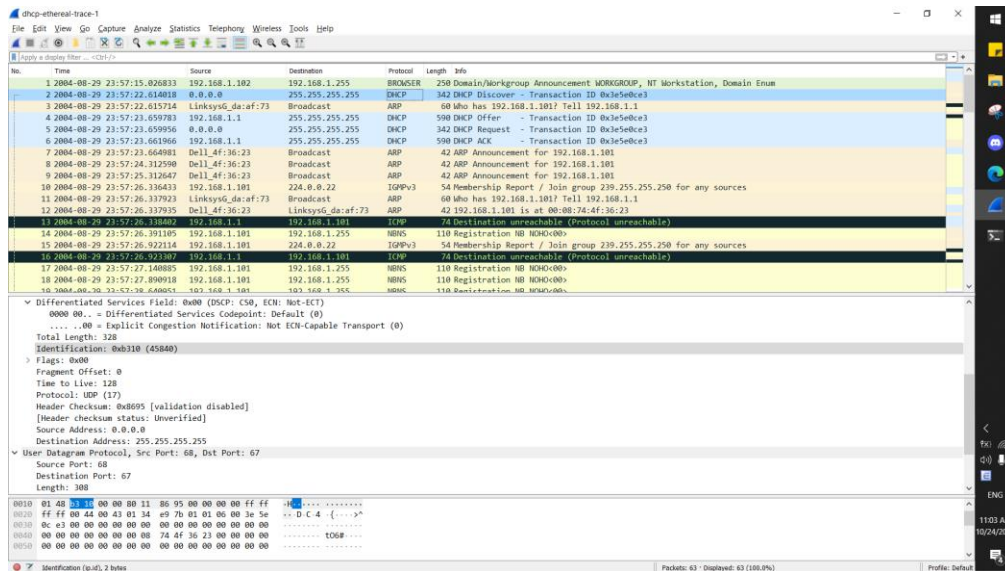
COMPUTER NETWORK LAB

LAB 4B

Name: Đinh Hoàng Anh

Student ID: 1952553

LAB 4B

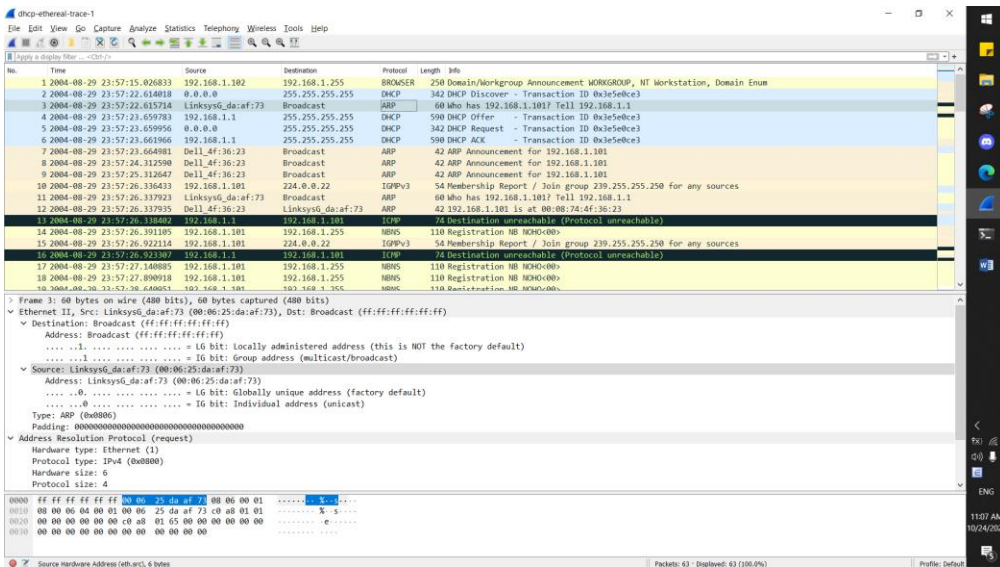


The image shows a Wireshark packet capture of DHCP traffic. The packet list on the left shows several DHCP messages, including Discover, Offer, Request, ACK, and Announcement. The selected packet (No. 12) is a DHCP Announcement from 192.168.1.102 to 192.168.1.101. The packet details pane shows the DHCP fields, including the Transaction ID (0x3e5bce3), the IP address (192.168.1.101), and the MAC address (08:00:27:36:6405). The packet bytes pane shows the raw data in hexadecimal and ASCII.

| No. | Time | Source | Destination | Protocol | Length | Info |
|-----|----------------------------|-------------------|-------------------|-----------|--------|--|
| 1 | 2004-08-29 23:57:15.026833 | 192.168.1.102 | 192.168.1.255 | BROADCAST | 250 | Domain/Workgroup Announcement WORKGROUP, NT Workstation, Domain Enum |
| 2 | 2004-08-29 23:57:22.614018 | 0.0.0.0 | 255.255.255.255 | DHCP | 342 | DHCP Discover - Transaction ID 0x3e5bce3 |
| 3 | 2004-08-29 23:57:22.615714 | Linksys6_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 0x3e5bce3 |
| 5 | 2004-08-29 23:57:23.659956 | 0.0.0.0 | 255.255.255.255 | DHCP | 342 | DHCP Request - Transaction ID 0x3e5bce3 |
| 6 | 2004-08-29 23:57:23.661966 | 192.168.1.1 | 255.255.255.255 | DHCP | 590 | DHCP ACK - Transaction ID 0x3e5bce3 |
| 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 for any sources |
| 11 | 2004-08-29 23:57:26.337923 | Linksys6_da:af:73 | Broadcast | ARP | 60 | Who has 192.168.1.101? Tell 192.168.1.1 |
| 12 | 2004-08-29 23:57:26.337935 | Dell_4f:36:23 | Linksys6_da:af:73 | ARP | 42 | 192.168.1.101 is at 08:00:27:36:6405 |
| 13 | 2004-08-29 23:57:26.391105 | 192.168.1.101 | 192.168.1.255 | NBNS | 110 | Registration NB NBNS<0> |
| 14 | 2004-08-29 23:57:26.922114 | 192.168.1.101 | 224.0.0.22 | IGMPv3 | 54 | Membership Report / Join group 239.255.255.250 for any sources |
| 15 | 2004-08-29 23:57:26.922107 | 192.168.1.101 | 192.168.1.101 | IGMP | 74 | Destination unreachable (Protocol unreachable) |
| 17 | 2004-08-29 23:57:27.140005 | 192.168.1.101 | 192.168.1.255 | NBNS | 110 | Registration NB NBNS<0> |
| 18 | 2004-08-29 23:57:27.890918 | 192.168.1.101 | 192.168.1.255 | NBNS | 110 | Registration NB NBNS<0> |
| 19 | 2004-08-29 23:57:28.640051 | 192.168.1.101 | 192.168.1.355 | NBNS | 110 | Registration NB NBNS<0> |

1. The DHCP messages are sent via UDP

2.

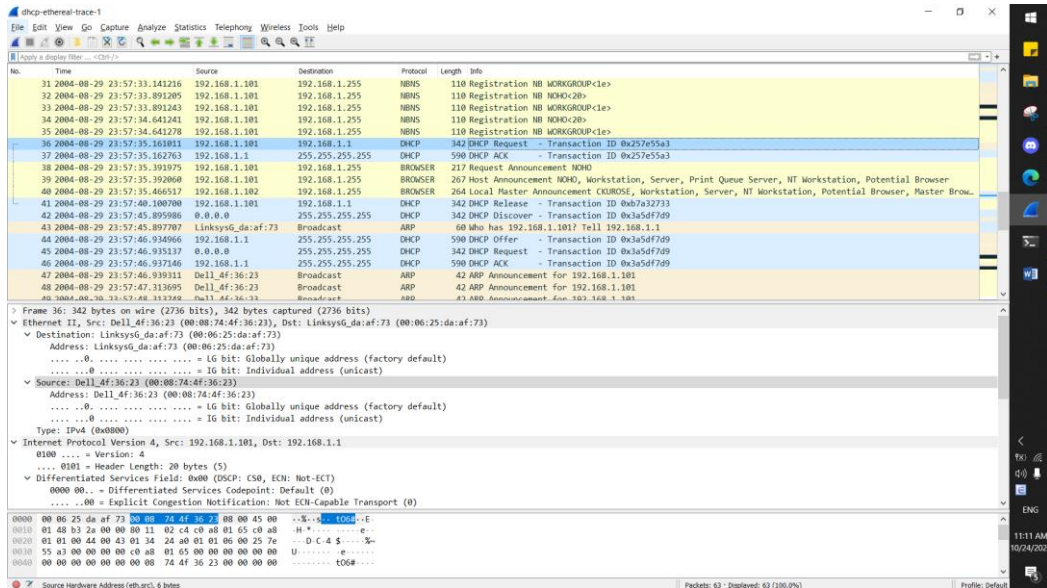


The image shows a Wireshark packet capture of DHCP traffic. The packet list on the left shows several DHCP messages, including Discover, Offer, Request, ACK, and Announcement. The selected packet (No. 12) is a DHCP Announcement from 192.168.1.102 to 192.168.1.101. The packet details pane shows the DHCP fields, including the Transaction ID (0x3e5bce3), the IP address (192.168.1.101), and the MAC address (08:00:27:36:6405). The packet bytes pane shows the raw data in hexadecimal and ASCII.

| No. | Time | Source | Destination | Protocol | Length | Info |
|-----|----------------------------|-------------------|-------------------|-----------|--------|--|
| 1 | 2004-08-29 23:57:15.026833 | 192.168.1.102 | 192.168.1.255 | BROADCAST | 250 | Domain/Workgroup Announcement WORKGROUP, NT Workstation, Domain Enum |
| 2 | 2004-08-29 23:57:22.614018 | 0.0.0.0 | 255.255.255.255 | DHCP | 342 | DHCP Discover - Transaction ID 0x3e5bce3 |
| 3 | 2004-08-29 23:57:22.615714 | Linksys6_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 0x3e5bce3 |
| 5 | 2004-08-29 23:57:23.659956 | 0.0.0.0 | 255.255.255.255 | DHCP | 342 | DHCP Request - Transaction ID 0x3e5bce3 |
| 6 | 2004-08-29 23:57:23.661966 | 192.168.1.1 | 255.255.255.255 | DHCP | 590 | DHCP ACK - Transaction ID 0x3e5bce3 |
| 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 for any sources |
| 11 | 2004-08-29 23:57:26.337923 | Linksys6_da:af:73 | Broadcast | ARP | 60 | Who has 192.168.1.101? Tell 192.168.1.1 |
| 12 | 2004-08-29 23:57:26.337935 | Dell_4f:36:23 | Linksys6_da:af:73 | ARP | 42 | 192.168.1.101 is at 08:00:27:36:6405 |
| 13 | 2004-08-29 23:57:26.391105 | 192.168.1.101 | 192.168.1.255 | NBNS | 110 | Registration NB NBNS<0> |
| 14 | 2004-08-29 23:57:26.922114 | 192.168.1.101 | 224.0.0.22 | IGMPv3 | 54 | Membership Report / Join group 239.255.255.250 for any sources |
| 15 | 2004-08-29 23:57:26.922107 | 192.168.1.101 | 192.168.1.101 | IGMP | 74 | Destination unreachable (Protocol unreachable) |
| 17 | 2004-08-29 23:57:27.140005 | 192.168.1.101 | 192.168.1.255 | NBNS | 110 | Registration NB NBNS<0> |
| 18 | 2004-08-29 23:57:27.890918 | 192.168.1.101 | 192.168.1.255 | NBNS | 110 | Registration NB NBNS<0> |
| 19 | 2004-08-29 23:57:28.640051 | 192.168.1.101 | 192.168.1.355 | NBNS | 110 | Registration NB NBNS<0> |

3. Source: 00:06:25:da:af:73

4. DHCP Message Type and Request includes a server identifier field



5. First: 0x3e5e0ce3, Second: 0x257e455a3, Purpose: The transaction ID is different so that the host can differentiate between different requests made by the user.

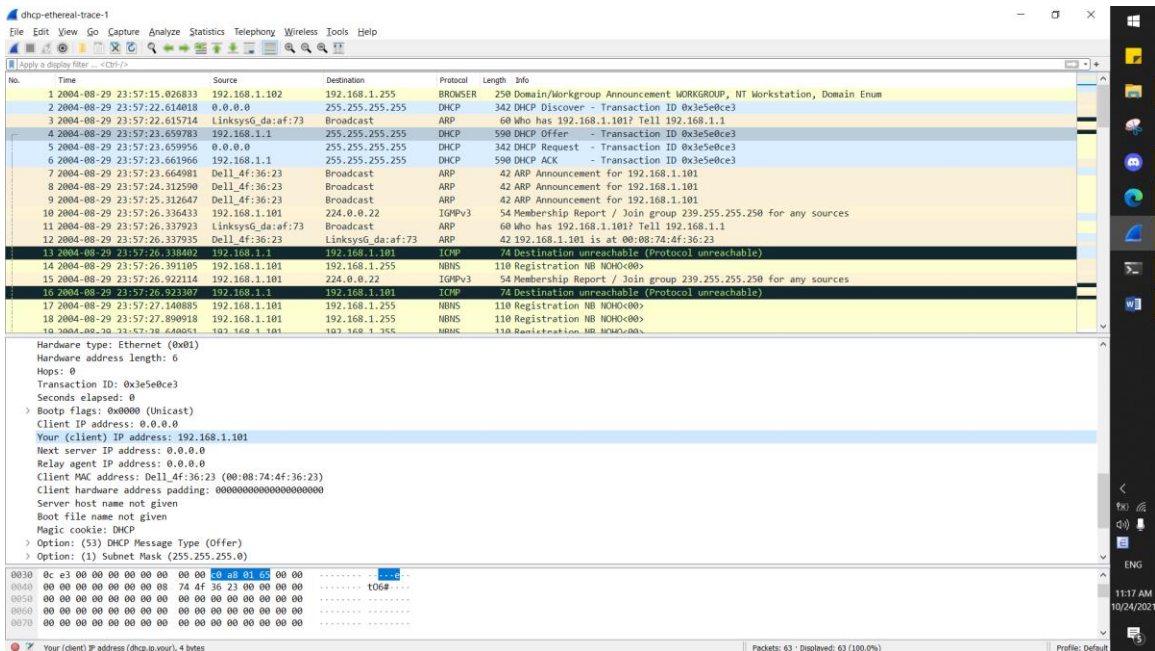
6. Discover: 0.0.0.0/255.255.255.255

Offer: 192.168.1.1/255.255.255.255

Discover: 0.0.0.0/255.255.255.255

Discover: 192.168.1.1/255.255.255.255

7. 192.168.1.1



8. 192.168.1.101

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.