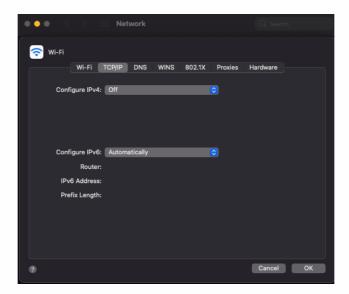
## EE 450

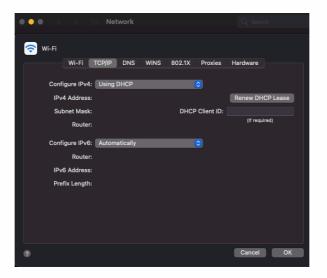
*Lab #1* 

Name: Shih-Ju Hsu

release IP address

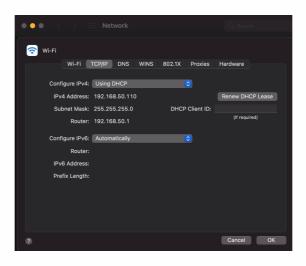


renew IP address



second renew

(Renew DHCP Lease)



## DHCP messages are sent over UDP

```
Time
                        Source
                                                                      Protocol Length Info
No.
                                               Destination
     23 6.106242
                        0.0.0.0
                                               255, 255, 255, 255
                                                                      DHCP
                                                                                342
                                                                                       DHCP
Discover - Transaction ID 0x16a47db4
Frame 23: 342 bytes on wire (2736 bits), 342 bytes captured (2736 bits) on interface en0, id 0
Ethernet II, Src: Apple_c2:7b:1a (90:9c:4a:c2:7b:1a), Dst: Broadcast (ff:ff:ff:ff:ff)
Internet Protocol Version 4, Src: 0.0.0.0, Dst: 255.255.255.255
User Datagram Protocol, Src Port: 68, Dst Port: 67
Dynamic Host Configuration Protocol (Discover)
                                                                      Protocol Length Info
No.
        Time
                        Source
                                               Destination
     29 8.044829
                        0.0.0.0
                                               255.255.255.255
                                                                      DHCP
                                                                                342
                                                                                       DHCP
Discover - Transaction ID 0x16a47db4
Frame 29: 342 bytes on wire (2736 bits), 342 bytes captured (2736 bits) on interface en0, id 0
Ethernet II, Src: Apple_c2:7b:1a (90:9c:4a:c2:7b:1a), Dst: Broadcast (ff:ff:ff:ff:ff)
Internet Protocol Version 4, Src: 0.0.0.0, Dst: 255.255.255
User Datagram Protocol, Src Port: 68, Dst Port: 67
Dynamic Host Configuration Protocol (Discover)
        Time
                        Source
                                               Destination
                                                                      Protocol Length Info
     48 9.588209
                        192.168.50.1
                                               192.168.50.110
                                                                      DHCP
                                                                                342
                                                                                       DHCP Offer
- Transaction ID 0x16a47db4
Frame 48: 342 bytes on wire (2736 bits), 342 bytes captured (2736 bits) on interface en0, id 0
Ethernet II, Src: ASUSTekC_91:2d:58 (c8:7f:54:91:2d:58), Dst: Apple_c2:7b:1a (90:9c:4a:c2:7b:
1a)
Internet Protocol Version 4, Src: 192.168.50.1, Dst: 192.168.50.110
User Datagram Protocol, Src Port: 67, Dst Port: 68
Dynamic Host Configuration Protocol (Offer)
        Time
                        Source
                                               Destination
                                                                      Protocol Length Info
                        192.168.50.1
     65 9.590552
                                               192,168,50,110
                                                                      DHCP
                                                                                342
                                                                                       DHCP Offer
- Transaction ID 0x16a47db4
Frame 65: 342 bytes on wire (2736 bits), 342 bytes captured (2736 bits) on interface en0, id 0
Ethernet II, Src: ASUSTekC_91:2d:58 (c8:7f:54:91:2d:58), Dst: Apple_c2:7b:1a (90:9c:4a:c2:7b:
Internet Protocol Version 4, Src: 192.168.50.1, Dst: 192.168.50.110
User Datagram Protocol, Src Port: 67, Dst Port: 68
Dynamic Host Configuration Protocol (Offer)
                        Source
                                               Destination
                                                                      Protocol Length Info
        Time
                        0.0.0.0
                                                                                       DHCP Request
     83 10.593308
                                               255.255.255.255
                                                                      DHCP
                                                                                342

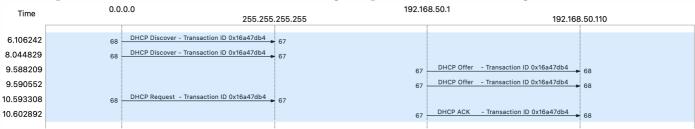
    Transaction ID 0x16a47db4

Frame 83: 342 bytes on wire (2736 bits), 342 bytes captured (2736 bits) on interface en0, id 0
Ethernet II, Src: Apple_c2:7b:1a (90:9c:4a:c2:7b:1a), Dst: Broadcast (ff:ff:ff:ff:ff:ff)
Internet Protocol Version 4, Src: 0.0.0.0, Dst: 255.255.255
User Datagram Protocol, Src Port: 68, Dst Port: 67
Dynamic Host Configuration Protocol (Request)
        Time
                        Source
                                               Destination
                                                                      Protocol Length Info
No.
     85 10.602892
                                               192.168.50.110
                                                                                342
                                                                                       DHCP ACK
                        192.168.50.1
                                                                      DHCP

    Transaction ID 0x16a47db4

Frame 85: 342 bytes on wire (2736 bits), 342 bytes captured (2736 bits) on interface en0, id 0
Ethernet II, Src: ASUSTekC_91:2d:58 (c8:7f:54:91:2d:58), Dst: Apple_c2:7b:1a (90:9c:4a:c2:7b:
1a)
Internet Protocol Version 4, Src: 192.168.50.1, Dst: 192.168.50.110
User Datagram Protocol, Src Port: 67, Dst Port: 68
Dynamic Host Configuration Protocol (ACK)
```

Yes. The port numbers (67 and 68) are the same as the given port numbers in this assignment.



(3)

The link-layer address of my host is Apple\_c2:7b:1a (90:9c:4a:c2:7b:1a).

The **DHCP Message Type** are different. Also, the DHCP request message includes the information of **Requested IP Address** and **DHCP Server Identifier** while the DHCP discover message doesn't.

```
Frame 83: 342 bytes on wire (2736 bits), 342 bytes captured (2736 bits) on interface en0, id 0 Ethernet II, Src: Apple_c2:7b:1a (90:9c:4a:c2:7b:1a), Dst: Broadcast (ff:ff:ff:ff:ff:ff) Internet Protocol Version 4, Src: 0.0.0.0, Dst: 255.255.255.255
User Datagram Protocol, Src Port: 68, Dst Port: 67
Dynamic Host Configuration Protocol (Request)
    Message type: Boot Request (1)
    Hardware type: Ethernet (0x01)
    Hardware address length: 6
    Hops: 0
    Transaction ID: 0x16a47db4
    Seconds elapsed: 4
   Bootp flags: 0x0000 (Unicast)
    Client IP address: 0.0.0.0
    Your (client) IP address: 0.0.0.0
   Next server IP address: 0.0.0.0
    Relay agent IP address: 0.0.0.0
    Client MAC address: Apple_c2:7b:1a (90:9c:4a:c2:7b:1a)
    Client hardware address padding: 00000000000000000000
    Server host name not given
    Boot file name not given
    Magic cookie: DHCP
    Option: (53) DHCP Message Type (Request)
    Option: (55) Parameter Request List
    Option: (57) Maximum DHCP Message Size
    Option: (61) Client identifier
    Option: (50) Requested IP Address (192.168.50.110)
    Option: (54) DHCP Server Identifier (192.168.50.1)
    Option: (12) Host Name
    Option: (255) End
    Padding: 00
```

```
Frame 29: 342 bytes on wire (2736 bits), 342 bytes captured (2736 bits) on interface en0, id 0 Ethernet II, Src: Apple_c2:7b:1a (90:9c:4a:c2:7b:1a), Dst: Broadcast (ff:ff:ff:ff:ff:ff)
Internet Protocol Version 4, Src: 0.0.0.0, Dst: 255.255.255.255
User Datagram Protocol, Src Port: 68, Dst Port: 67
Dynamic Host Configuration Protocol (Discover)
   Message type: Boot Request (1)
   Hardware type: Ethernet (0x01)
   Hardware address length: 6
   Hops: 0
   Transaction ID: 0x16a47db4
   Seconds elapsed: 2
   Bootp flags: 0x0000 (Unicast)
   Client IP address: 0.0.0.0
   Your (client) IP address: 0.0.0.0
   Next server IP address: 0.0.0.0
   Relay agent IP address: 0.0.0.0
Client MAC address: Apple_c2:7b:1a (90:9c:4a:c2:7b:1a)
   Server host name not given
   Boot file name not given
   Magic cookie: DHCP
   Option: (53) DHCP Message Type (Discover)
Option: (55) Parameter Request List
   Option: (57) Maximum DHCP Message Size
   Option: (61) Client identifier
   Option: (51) IP Address Lease Time
   Option: (12) Host Name
   Option: (255) End
    Padding: 00000000000000
```

• First DHCP Transaction ID: 0x16a47db4

```
Time
                                       Source
                                                                            Destination
                                                                                                                 Protocol Length Info
23 6.106242 0.0.0.0 255.255.255 DHCP 342 DHCP
Discover - Transaction ID 0x16a47db4
Frame 23: 342 bytes on wire (2736 bits), 342 bytes captured (2736 bits) on interface en0, id 0
Ethernet II, Src: Apple_c2:7b:1a (90:9c:4a:c2:7b:1a), Dst: Broadcast (ff:ff:ff:ff:ff:ff:ff:Internet Protocol Version 4, Src: 0.0.0.0, Dst: 255.255.255
User Datagram Protocol, Src Port: 68, Dst Port: 67
Dynamic Host Configuration Protocol (Discover)
No. Time Supra
        23 6.106242
                                       0.0.0.0
                                                                            255.255.255.255
             Time
                                      Source
                                                                            Destination
                                                                                                                 Protocol Length Info
        29 8.044829
                                      0.0.0.0
                                                                            255.255.255.255
                                                                                                                DHCP
                                                                                                                               342
                                                                                                                                           DHCP
Time
                                      Source
                                                                           Destination
                                                                                                                 Protocol Length Info
        48 9.588209
                                      192.168.50.1
                                                                            192,168,50,110
                                                                                                                 DHCP
                                                                                                                               342
                                                                                                                                           DHCP Offer
Transaction ID 0x16a47db4
Frame 48: 342 bytes on wire (2736 bits), 342 bytes captured (2736 bits) on interface en0, id 0 Ethernet II, Src: ASUSTekC_91:2d:58 (c8:7f:54:91:2d:58), Dst: Apple_c2:7b:1a (90:9c:4a:c2:7b:
Internet Protocol Version 4, Src: 192.168.50.1, Dst: 192.168.50.110
User Datagram Protocol, Src Port: 67, Dst Port: 68
Dynamic Host Configuration Protocol (Offer)
             Time
                                      Source
                                                                           Destination
                                                                                                                 Protocol Length Info
        65 9.590552
                                      192.168.50.1
                                                                            192.168.50.110
                                                                                                                DHCP
                                                                                                                               342
                                                                                                                                           DHCP Offer
  - Transaction ID 0x16a47db4
Frame 65: 342 bytes on wire (2736 bits), 342 bytes captured (2736 bits) on interface en0, id 0 Ethernet II, Src: ASUSTekC_91:2d:58 (c8:7f:54:91:2d:58), Dst: Apple_c2:7b:1a (90:9c:4a:c2:7b:
Internet Protocol Version 4, Src: 192.168.50.1, Dst: 192.168.50.110 User Datagram Protocol, Src Port: 67, Dst Port: 68
Dynamic Host Configuration Protocol (Offer)
             Time
                                      Source
                                                                            Destination
                                                                                                                Protocol Length Info
        83 10.593308
                                      0.0.0.0
                                                                            255, 255, 255, 255
                                                                                                                               342
                                                                                                                                           DHCP Request
                                                                                                                DHCP
   Transaction ID 0x16a47db4
Frame 83: 342 bytes on wire (2736 bits), 342 bytes captured (2736 bits) on interface en0, id 0 Ethernet II, Src: Apple_c2:7b:1a (90:9c:4a:c2:7b:1a), Dst: Broadcast (ff:ff:ff:ff:ff:ff) Internet Protocol Version 4, Src: 0.0.0.0, Dst: 255.255.255
User Datagram Protocol, Src Port: 68, Dst Port: 67
Dynamic Host Configuration Protocol (Request)
                                      Source
192.168.50.1
                                                                           Destination
No.
             Time
                                                                                                                Protocol Length Info
        85 10.602892
                                                                            192.168.50.110
                                                                                                                               342
                                                                                                                                           DHCP ACK
 - Transaction ID 0x16a47db4
Frame 85: 342 bytes on wire (2736 bits), 342 bytes captured (2736 bits) on interface en0, id 0 Ethernet II, Src: ASUSTekC_91:2d:58 (c8:7f:54:91:2d:58), Dst: Apple_c2:7b:1a (90:9c:4a:c2:7b:
Internet Protocol Version 4, Src: 192.168.50.1, Dst: 192.168.50.110 User Datagram Protocol, Src Port: 67, Dst Port: 68 Dynamic Host Configuration Protocol (ACK)
```

■ Second DHCP Transaction ID: 0x87fa7ef

```
Protocol Length Info
                                                     Destination
No.
         Time
                           Source
      30 12.879955
                           0.0.0.0
                                                                                                  DHCP Request
                                                     255, 255, 255, 255
                                                                                         342
- Transaction ID 0x87fa7ef
Frame 30: 342 bytes on wire (2736 bits), 342 bytes captured (2736 bits) on interface en0, id 0
No.
         Time
                           Source
                                                     Destination
                                                                               Protocol Length Info
                           192.168.50.1
      31 12.891290
                                                     192.168.50.110
                                                                               DHCP
                                                                                          342
                                                                                                  DHCP ACK
- Transaction ID 0x87fa7ef
Frame 31: 342 bytes on wire (2736 bits), 342 bytes captured (2736 bits) on interface en0, id 0 Ethernet II, Src: ASUSTekC_91:2d:58 (c8:7f:54:91:2d:58), Dst: Apple_c2:7b:1a (90:9c:4a:c2:7b:
Internet Protocol Version 4, Src: 192.168.50.1, Dst: 192.168.50.110 User Datagram Protocol, Src Port: 67, Dst Port: 68 Dynamic Host Configuration Protocol (ACK)
```

The purpose of Transaction ID is used by the client and server to identify the associated DHCP requests and responses.

■ Discover: 0.0.0.0 / 255.255.255.255

```
Protocol Length Info
         Time
                            Source
                                                      Destination
      23 6.106242
                            0.0.0.0
                                                       255.255.255.255
Discover - Transaction ID 0x16a47db4
Frame 23: 342 bytes on wire (2736 bits), 342 bytes captured (2736 bits) on interface en0, id 0
Ethernet II, Src: Apple_c2:7b:1a (90:9c:4a:c2:7b:1a), Dst: Broadcast (ff:ff:ff:ff:ff:ff)
Internet Protocol Version 4, Src: 0.0.0.0, Dst: 255.255.255
    0100 .... = Version: 4 .... 0101 = Header Length: 20 bytes (5)
Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)
     Total Length: 328
     Identification: 0xc246 (49734)
     000. .... = Flags: 0x0
      ..0 0000 0000 0000 = Fragment Offset: 0
    Time to Live: 255
Protocol: UDP (17)
     Header Checksum: 0xf85e [validation disabled]
[Header checksum status: Unverified]
     Source Address: 0.0.0.0
Destination Address: 255.255.255
User Datagram Protocol, Src Port: 68, Dst Port: 67
Dynamic Host Configuration Protocol (Discover)
```

• Offer: 192.168.50.1 / 192.168.50.110

```
Source
                                                        Destination
                                                                                    Protocol Length Info
      48 9.588209
                            192.168.50.1
                                                        192.168.50.110
                                                                                    DHCP
                                                                                               342
                                                                                                        DHCP Offer
- Transaction ID 0x16a47db4
Frame 48: 342 bytes on wire (2736 bits), 342 bytes captured (2736 bits) on interface en0, id 0 Ethernet II, Src: ASUSTekC_91:2d:58 (c8:7f:54:91:2d:58), Dst: Apple_c2:7b:1a (90:9c:4a:c2:7b:
Internet Protocol Version 4, Src: 192.168.50.1, Dst: 192.168.50.110
    0100 .... = Version: 4
        . 0101 = Header Length: 20 bytes (5)
     Differentiated Services Field: 0xc0 (DSCP: CS6, ECN: Not-ECT)
     Total Length: 328
     Identification: 0xb0c2 (45250)
     000. .... = Flags: 0x0
     ...0 0000 0000 0000 = Fragment Offset: 0
    Time to Live: 64
Protocol: UDP (17)
     Header Checksum: 0xe262 [validation disabled]
    [Header checksum status: Unverified]
Source Address: 192.168.50.1
Destination Address: 192.168.50.110
User Datagram Protocol, Src Port: 67, Dst Port: 68
Dynamic Host Configuration Protocol (Offer)
```

Request: 0.0.0.0 / 255.255.255.255

```
Source
                                                                      Destination
                                                                                                         Protocol Length Info
            Time
       83 10.593308
                                    0.0.0.0
                                                                      255.255.255.255
                                                                                                         DHCP
                                                                                                                       342
                                                                                                                                 DHCP Request
- Transaction ID 0x16a47db4
Frame 83: 342 bytes on wire (2736 bits), 342 bytes captured (2736 bits) on interface en0, id 0
Ethernet II, Src: Apple_c2:7b:1a (90:9c:4a:c2:7b:1a), Dst: Broadcast (ff:ff:ff:ff:ff)
Internet Protocol Version 4, Src: 0.0.0.0, Dst: 255.255.255.255
      0100 .... = Version: 4
      .... 0101 = Header Length: 20 bytes (5)
Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)
      Total Length: 328
      Identification: 0xc248 (49736)
      000. .... = Flags: 0x0
...0 0000 0000 0000 = Fragment Offset: 0
      Time to Live: 255
Protocol: UDP (17)
       Header Checksum: 0xf85c [validation disabled]
       [Header checksum status: Unverified]
      Source Address: 0.0.0.0
Destination Address: 255.255.255.255
```

## • ACK: 192.168.50.1 / 192.168.50.110

```
Time
                                        Source
                                                                               Destination
                                                                                                                     Protocol Length Info
         85 10.602892
                                        192.168.50.1
                                                                              192.168.50.110
                                                                                                                                  342
- Transaction ID 0x16a47db4
Frame 85: 342 bytes on wire (2736 bits), 342 bytes captured (2736 bits) on interface en0, id 0
Ethernet II, Src: ASUSTekC_91:2d:58 (c8:7f:54:91:2d:58), Dst: Apple_c2:7b:1a (90:9c:4a:c2:7b:
1a)
Internet Protocol Version 4, Src: 192.168.50.1, Dst: 192.168.50.110
       0100 ... = Version: 4
... 0101 = Header Length: 20 bytes (5)
Differentiated Services Field: 0xc0 (DSCP: CS6, ECN: Not-ECT)
       Total Length: 328
       Identification: 0xb281 (45697)
       000. ... = Flags: 0x0
...0 0000 0000 0000 = Fragment Offset: 0
Time to Live: 64
Protocol: UDP (17)
       Header Checksum: 0xe0a3 [validation disabled]
[Header checksum status: Univerified]
Source Address: 192.168.50.1
Destination Address: 192.168.50.110
User Datagram Protocol, Src Port: 67, Dst Port: 68
Dynamic Host Configuration Protocol (ACK)
```

The IP address of my DHCP server is **192.168.50.1**.

```
No.
        Time
                       Source
                                             Destination
                                                                    Protocol Length Info
     48 9.588209
                       192.168.50.1
                                             192.168.50.110
                                                                    DHCP
                                                                             342
                                                                                    DHCP Offer
 Transaction ID 0x16a47db4
Frame 48: 342 bytes on wire (2736 bits), 342 bytes captured (2736 bits) on interface en0, id 0
Ethernet II, Src: ASUSTekC_91:2d:58 (c8:7f:54:91:2d:58), Dst: Apple_c2:7b:1a (90:9c:4a:c2:7b:
Internet Protocol Version 4, Src: 192.168.50.1, Dst: 192.168.50.110
User Datagram Protocol, Src Port: 67, Dst Port: 68
Dynamic Host Configuration Protocol (Offer)
```

(8)

DHCP server offers 192.168.50.110 to my host in DHCP Offer message.

```
No.
        Time
                       Source
                                             Destination
                                                                    Protocol Length Info
     48 9.588209
                       192.168.50.1
                                             192.168.50.110
                                                                                    DHCP Offer
                                                                    DHCP
                                                                             342
- Transaction ID 0x16a47db4
Frame 48: 342 bytes on wire (2736 bits), 342 bytes captured (2736 bits) on interface en0, id 0
Ethernet II, Src: ASUSTekC_91:2d:58 (c8:7f:54:91:2d:58), Dst: Apple_c2:7b:1a (90:9c:4a:c2:7b:
Internet Protocol Version 4, Src: 192.168.50.1, Dst: 192.168.50.110
User Datagram Protocol, Src Port: 67, Dst Port: 68
Dynamic Host Configuration Protocol (Offer)
    Message type: Boot Reply (2)
    Hardware type: Ethernet (0x01)
    Hardware address length: 6
    Hops: 0
    Transaction ID: 0x16a47db4
    Seconds elapsed: 0
    Bootp flags: 0x0000 (Unicast)
    Client IP address: 0.0.0.0
    Your (client) IP address: 192.168.50.110
   Next server IP address: 192.168.50.1
    Relay agent IP address: 0.0.0.0
```

(9)

In the example screenshot, the IP address is **0.0.0.0**. In my experiment, the relay agent IP address is also **0.0.0.0**. Therefore, there is no relay agent in my experiment.

```
Protocol Length Info
No.
       Time
                      Source
                                           Destination
    48 9.588209
                      192.168.50.1
                                           192.168.50.110
                                                                DHCP
                                                                        342
                                                                               DHCP Offer
- Transaction ID 0x16a47db4
Frame 48: 342 bytes on wire (2736 bits), 342 bytes captured (2736 bits) on interface en0, id 0
Ethernet II, Src: ASUSTekC 91:2d:58 (c8:7f:54:91:2d:58), Dst: Apple c2:7b:1a (90:9c:4a:c2:7b:
1a)
Internet Protocol Version 4, Src: 192.168.50.1, Dst: 192.168.50.110
User Datagram Protocol, Src Port: 67, Dst Port: 68
Dynamic Host Configuration Protocol (Offer)
   Message type: Boot Reply (2)
   Hardware type: Ethernet (0x01)
   Hardware address length: 6
   Hops: 0
   Transaction ID: 0x16a47db4
   Seconds elapsed: 0
   Bootp flags: 0x0000 (Unicast)
   Client IP address: 0.0.0.0
   Your (client) IP address: 192.168.50.110
   Next server IP address: 192.168.50.1
   Relay agent IP address: 0.0.0.0
   Client MAC address: Apple_c2:7b:1a (90:9c:4a:c2:7b:1a)
```

- The router line is to tell the client the IP address of the default gateway, which helps the client to transmit packets to the destination outside of the local network.
- The subnet mask line is to tell the client the subnet mask should be used. It helps the client to tell which part of the IP address belongs to the device and which part belongs to the network.

```
Option: (1) Subnet Mask (255.255.255.0)

Length: 4

Subnet Mask: 255.255.255.0

Option: (28) Broadcast Address (192.168.50.255)

Length: 4

Broadcast Address: 192.168.50.255

Option: (6) Domain Name Server

Length: 4

Domain Name Server: 192.168.50.1

Option: (3) Router

Length: 4

Router: 192.168.50.1
```

(11)

Yes. The client accepted the offered IP address. The client's requested IP address (192.168.1.101) is in "Option: Requested IP Address" of the DHCP request message.

```
Option: (53) DHCP Message Type (Request)
    Length: 1
    DHCP: Request (3)
Option: (61) Client identifier
    Length: 7
    Hardware type: Ethernet (0x01)
    Client MAC address: Dell_4f:36:23 (00:08:74:4f:36:23)
Option: (50) Requested IP Address (192.168.1.101)
    Length: 4
    Requested IP Address: 192.168.1.101
Option: (54) DHCP Server Identifier (192.168.1.1)
    Length: 4
    DHCP Server Identifier: 192.168.1.1
Option: (12) Host Name
    Length: 4
    Host Name: Noho
```

(12)

- The purpose of the lease time is to tell the client how long will the assigned IP address be expired.
- In my experiment, the lease time is **1day**.

```
Option: (51) IP Address Lease Time
Length: 4
IP Address Lease Time: (86400s) 1 day
```

(13)

- The DHCP release message is the request by the client to release the IP address and return to the server.
- No. The DHCP server does not issue any acknowledgement of receipt of the client's DHCP request to the client. There is no verification of DHCP release message has been received.
- The server will not assign the IP address to others until the IP address expired. (ruuning out of the lease time)

(14)

Yes. There are broadcast ARP packets sent during the DHCP packet-exchange period. The purpose of the ARP packets is to make sure no other devices using the same IP address. If no devices have taken the IP address, the server will acknowledge the client's request.

No. Time Source Destination Protocol Length Info 27 7.168267 ASUSTekC\_91:2d:58 Broadcast ARP 42 Who has 192.168.50.110? Tell 192.168.50.1 Frame 27: 42 bytes on wire (336 bits), 42 bytes captured (336 bits) on interface en0, id 0 Ethernet II, Src: ASUSTekC\_91:2d:58 (c8:7f:54:91:2d:58), Dst: Broadcast (ff:ff:ff:ff:ff:ff) Address Resolution Protocol (request)