

CS436 Socket Programming Project

Test 1: Running the server on port 18000

Client:

```
Client sending DISCOVER message...  
Do you accept? Y/N: y
```

Server:

```
The server is ready to receive  
Recieve DISCOVER message from client with mac address 0x4d4c457e042
```

Test 2: Assigning the 1st available IP to computer1

Client:

```
IP Address: 192.168.45.1  
was assigned to this client, which will be expire at 2022-04-18 16:12:46.165238  
1. RELEASE  
2. RENEW  
3. QUIT  
4. ADMIN CLIENT  
Enter corresponding number (1-3): 3  
  
Process finished with exit code 0
```

Server:

```
Sending OFFER for new client(IP available)  
Client Mac Address: 0x4d4c457e042  
Assigned IP: 192.168.45.1
```

Test 3: IP Verification

```
Client sending DISCOVER message...  
IP Address: 192.168.45.1  
was assigned to this client, which will be expire at 2022-04-18 16:36:46.917814  
1. RELEASE  
2. RENEW  
3. QUIT  
4. ADMIN CLIENT  
Enter corresponding number (1-3): |
```

Client: Shows IP has already been assigned

Test 4: Running From computer2

Client:

Test 5: Clients who currently have an assigned IP on the server

Client:

```
was assigned to this client, which will be expire at 2022-04-18 18:19:34.817137
1. RELEASE
2. RENEW
3. QUIT
4. ADMIN CLIENT
Enter corresponding number (1-3): 4

Record_Number:1
Mac_address:0x4d4c457e042
IP_Adress:192.168.45.1

Date-Time:2022-04-18
18:01:31.466350
Record_Number:2
Mac_address:0x4d4c457e043
IP_Adress:192.168.45.2

Date-Time:2022-04-18
18:19:34.817137
```

Test 6: The “ACKED” changes to False for record 1 when the IP is released

```
Recieve DISCOVER message from client with mac address 0xa45e60dda7d2
Sending ACKNOWLEDGE message for existed Client
Client Mac Address: 0xa45e60dda7d2
Assigned IP: 192.168.45.3

Timestamp: 2022-04-18 18:51:08.316938
Released client 0xa45e60dda7d2
```

Test 7: Record 1 ACK changed to false

```
Enter corresponding number (1-3): 1
```

```
1. RELEASE
```

```
2. RENEW
```

```
3. QUIT
```

```
4. ADMIN CLIENT
```

```
Enter corresponding number (1-3): 4
```

```
Record_Number:1
```

```
Mac_address:0xa45e60dda7d2
```

```
IP_Address:192.168.45.3
```

```
Date-Time:2022-04-18
```

```
18:51:17.386029
```

```
Acked:False
```

```
Record_Number:2
```

```
Mac_address:0xa45e60dda7d3
```

```
IP_Address:192.168.45.4
```

```
Date-Time:2022-04-18
```

```
18:51:38.734623
```

```
Acked:True
```

Test 8: Client receives message about released IP

```
Timestamp: 2022-04-18 18:51:38.734623  
IP Address for client 0xa45e60dda7d1has already been released
```

Test 9: Only client2 set to true

```
*ADMIN CLIENT*
Sending LIST message to the server
Got reply from server with records

Record_Number:1
Mac_address:0x4d4c457e042
IP_Address:192.168.45.1

Date-Time:2022-04-18
19:31:56.1913
Acked:False
Record_Number:2
Mac_address:0xa45e60dda7d2
IP_Address:192.168.45.2

Date-Time:2022-04-18
19:46:38.340525
Acked:True

Process finished with exit code 0
```

Test 10: Client was given same address and the address timestamp is updated

Client:

```
Enter corresponding number (1-3): 2
IP Address: 192.168.45.1
was assigned to this client, which will be expire at 2022-04-18 22:08:56.231495
1. RELEASE
2. RENEW
3. QUIT
```

Server:

```
*ADMIN CLIENT*
Sending LIST message to the server
Got reply from server with records

Record_Number:1
Mac_address:0xa45e60dda7d1
IP_Adress:192.168.45.1

Date-Time:2022-04-18
22:08:56.231495
Acked:True
Record_Number:2
Mac_address:0xa45e60dda7d2
IP_Adress:192.168.45.2

Date-Time:2022-04-18
22:06:35.405495
Acked:True
```

Test 11: Both client ACK set to true

```
Got reply from server with records

Record_Number:1
Mac_address:0x4d4c457e042
IP_Adress:192.168.45.1

Date-Time:2022-04-18
19:51:23.735424
Acked:True
Record_Number:2
Mac_address:0xa45e60dda7d2
IP_Adress:192.168.45.2

Date-Time:2022-04-18
19:51:37.770231
Acked:True

Process finished with exit code 0
```

Test 12: Both client release IP, ACK becomes false

```
*ADMIN CLIENT*
Sending LIST message to the server
Got reply from server with records

Record_Number:1
Mac_address:0x4d4c457e042
IP_Adress:192.168.45.3

Date-Time:2022-04-18
19:54:02.079495
Acked:False
Record_Number:2
Mac_address:0xa45e60dda7d2
IP_Adress:192.168.45.4

Date-Time:2022-04-18
19:54:19.0801
Acked:False

Process finished with exit code 0
```

Test 13: Attacker deletes all IP

```
Start to ATTACK the SERVER...
```

```
Process finished with exit code 0
```

```
Recieve DISCOVER message from client with mac address 02:00:00:25:cb:79
No IP Add available. Sending DECLINE message to Client
Recieve DISCOVER message from client with mac address 02:00:00:a9:99:f8
No IP Add available. Sending DECLINE message to Client

Process finished with exit code 1
|
```