## **IP LAB 5 Assignment**

## Wireshark Lab:DHCP

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AIM: Analyze DHCP using protocol analyzer

**Tools**: cmd with administrative privileges and wireshark

## **Questions:**

1)ipconfig/release, ipconfig/renew, ipconfig/renew, ipconfig/release, ipconfig/renew

```
C:\Windows\System32>ipconfig/release

Windows IP Configuration

No operation can be performed on Local Area Connection* 1 while it has its media disconnected.

No operation can be performed on Local Area Connection* 2 while it has its media disconnected.

Ethernet adapter Ethernet 2:

Connection-specific DNS Suffix .:

Link-local IPv6 Address . . . : fe80::928c:e82:4818:d6e7%8

IPv4 Address . . . . : 192.168.56.1

Subnet Mask . . . . . : 255.255.255.0

Default Gateway . . . . :
```

```
C:\Windows\System32>ipconfig/renew

Windows IP Configuration

No operation can be performed on Local Area Connection* 1 while it has its media disconnected.

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IPv4 Address . . . . : 192.168.56.1
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . :

Wireless LAN adapter Local Area Connection* 1:

Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . :
```

```
C:\Windows\System32>ipconfig/release

Windows IP Configuration

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Ethernet adapter Ethernet 2:

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IPv4 Address . . . . : 192.168.56.1

Subnet Mask . . . . . . : 255.255.255.0

Default Gateway . . . . . . . . . .
```

```
C:\Windows\System32>ipconfig/renew

Windows IP Configuration

No operation can be performed on Local Area Connection* 1 while it has its media disconnected.

No operation can be performed on Local Area Connection* 2 while it has its media disconnected.

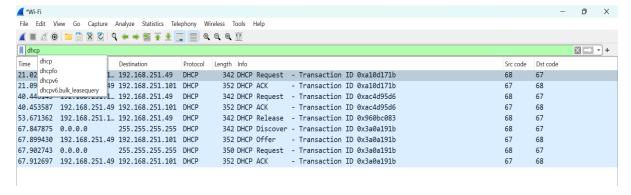
Ethernet adapter Ethernet 2:

Connection-specific DNS Suffix :
Link-local IPv6 Address . . . : fe80::928c:e82:4818:d6e7%8

IPv4 Address . . . . : 192.168.56.1

Subnet Mask . . . . . : 255.255.255.0

Default Gateway . . . . :
```

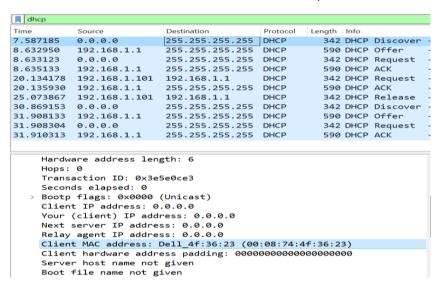


- 2a) UDP is in Transport layer and DHCP messages are sent over UDP.
- b) Source Port No is 67 and Destination Port No is 68statistic→flow graph

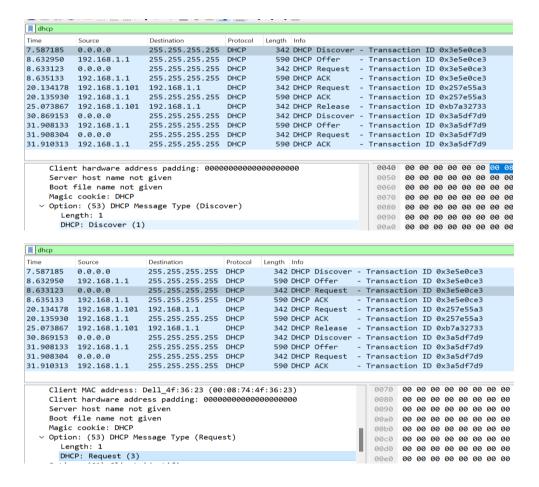


c) Link Layer Address of the client is the MAC address of client so it is Dell\_4f:36:23

00:08:74:4f:36:23;00:08:74 :Dell and 4f:36:23 -Unique address



d) Message Type and Server identifier are different in DHCP discover message and DHCP request message.

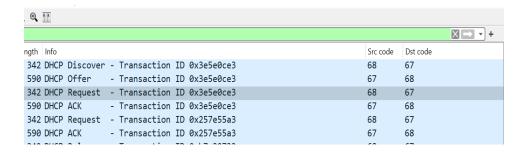


e)Total there 2 different set of Transaction ID

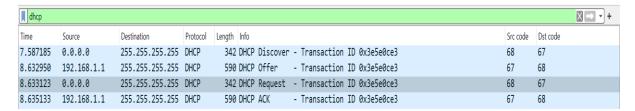
0X3e5e0ce3: (Discover/Offer/Request/ACK) DHCP messages

0X257e55a3: (Request/ACK) set of DHCP messages

Purpose of transaction ID?-To keep in track of the messages coming from the same device.

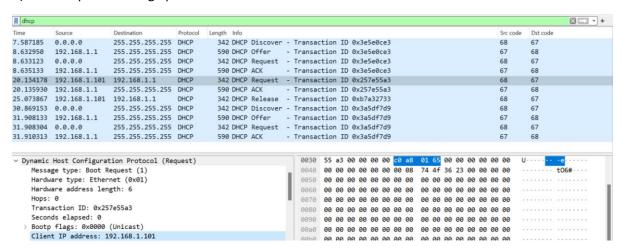


Source IP	Destination IP
0.0.0.0	255.255.255.255
192.168.1.1	255.255.255.255
0.0.0.0	255.255.255.255
192.168.1.1	255.255.255.255

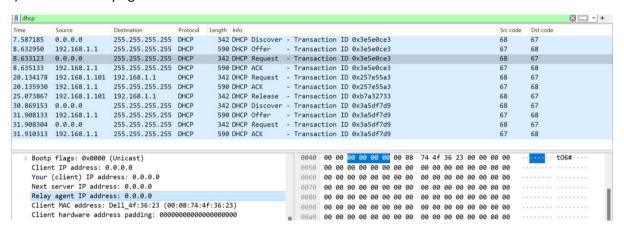


g)IP Address of the DHCP server is 192.168.1.1 ie the source IP address of DHCP offer message.

h)DHCP request message provides the IP address of the DHCP client address ie 192.168.1.101

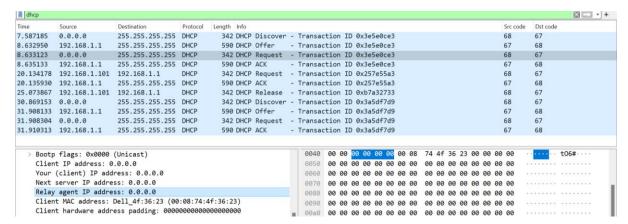


i)There is no relay agent because the IP address here is 0.0.0.0



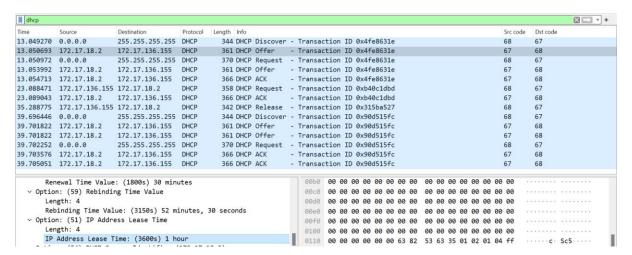
j) The router's IP address identifies the default internet gateway. The available subnet is defined by the subnet mask.

k)Yes, the client accepts the IP address provided by the DHCP server in the DHCP request message.



I) The purpose of a lease is to limit the length of time that a client can use an IP address.

Lease time is 1 hour in DHCP offer message and DHCP ACK message, lease time is decided by the DHCP server.



m) If the DHCP release message is lost, since there is no verification for DHCP release message sent by client there will be no DHCP ACK for the same.

First the server will wait till lease time expires in the system, until then the client will have the same IP Address.

n) The purpose of ARP: it is checking what all IP address are configured so that it can assign the unused IP address for DHCP client.

