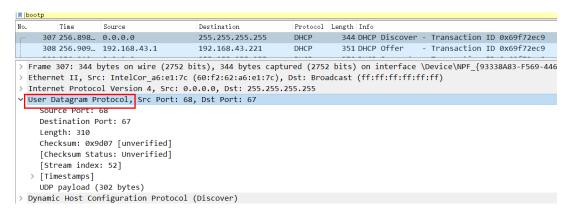
DHCP 题

1、DHCP 报文是通过 UDP 还是 TCP 发送:

UDP



2、绘制一个定时数据报,说明客户端和服务器之间的第一个 Discover/Offer/Request/ACK DHCP 交换的序列。

对于每个数据包,表明源端口号和目的端口号。

端口号是否与实验中给出的示例相同?



实际的 DHCP	源端口	目的端口			
Discover	0.0.0.0:68	255.255.255.255:67			
Offer	192.168.43.1:67	192.168.43.221:68			
Request	0.0.0.0:68	255.255.255.255:67			
ACK	192.168.43.1:67	192.168.43.221:68			

与给出的示例不相同

实际 DHCP:

E	noorh								
		Tine	Source	Destination	Protocol	Length In	nfo		_
	307	256.898	0.0.0.0	255.255.255.255	DHCP	344 DI	HCP	Discover	
	308	256.909	192.168.43.1	192.168.43.221	DHCP	351 DI	НСР	Offer	
	309	256.910	0.0.0.0	255.255.255.255	DHCP	370 DI	HCP	Request	
	310	256.923	192.168.43.1	192.168.43.221	DHCP	371 DI	НСР	ACK	

示例:

9										
		Time	Source	Destination	Protocol	Length	Info			
	2	7.587185	0.0.0.0	255.255.255.255	DHCP	342	DHCP	Discover	-	1
	4	8.632950	192.168.1.1	255.255.255.255	DHCP	590	DHCP	Offer	-	1
	5	8.633123	0.0.0.0	255.255.255.255	DHCP	342	DHCP	Request	-	1
	6	8.635133	192.168.1.1	255.255.255.255	DHCP	590	DHCP	ACK	-	1

3、主机的链路层地址:

IntelCor_a6:e1:7c (60:f2:62:a6:e1:7c)

N∘.	Time	Source	Destination	Protocol I	Length Info	
Г	307 256.898	0.0.0.0	255.255.255.255	DHCP	344 DHCP Discover - 1	Γ
	308 256.909	192.168.43.1	192.168.43.221	DHCP	351 DHCP Offer - 1	Γ
	309 256.910	0.0.0.0	255.255.255.255	DHCP	370 DHCP Request - 1	Γ
	310 256.923	192.168.43.1	192.168.43.221	DHCP	371 DHCP ACK - 1	Г
	1162 522.583	192.168.43.221	192.168.43.1	DHCP	358 DHCP Request - 1	Г
	1164 522.685	192.168.43.1	192.168.43.221	DHCP	371 DHCP ACK - 1	Γ

- > Frame 309: 370 bytes on wire (2960 bits), 370 bytes captured (2960 bits) on interface \Dev Ethernet II, Src: IntelCor_a6:e1:7c (60:f2:62:a6:e1:7c), Dst: Broadcast (ff:ff:ff:ff:ff:ff
 - > Destination: Broadcast (ff:ff:ff:ff:ff:ff)
 > Source: IntelCor_a6:e1:7c (60:f2:62:a6:e1:7c)

Type: 1Pv4 (0x0800)

- > 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)
- 4、DHCP discover 报文和 DHCP request 报文的区别是什么:

区别在 Option: (53) DHCP Message Type

→ Option: (53) DHCP Message Type (Discover)

Length: 1

DHCP: Discover (1)

✓ Option: (53) DHCP Message Type (Request)

Length: 1

DHCP: Request (3)

5、 前四个 DHCP 报文中的 Transaction-ID 值是多少? 第二组(Request/ACK)的 Transaction-ID 值是多少?

使用 Transaction-ID 的目的是什么?

前四个: 0x69f72ec9 第二组: 0x1b7e7953

使用 Transaction-ID 的目的是为了区分不同组的 DHCP 数据

otp								
	Time	Source	Destination	Protocol	l Length Info			
307	256.898	0.0.0.0	255.255.255.255	DHCP	344 DHCP Discover - Transaction ID 0x69f72ec9			
308	256.909	192.168.43.1	192.168.43.221	DHCP	351 DHCP Offer - Transaction ID 0x69f72ec9			
309	256.910	0.0.0.0	255.255.255.255	DHCP	370 DHCP Request - Transaction ID 0x69f72ec9			
310	256.923	192.168.43.1	192.168.43.221	DHCP	371 DHCP ACK - Transaction ID 0x69f72ec9			
1162	522.583	192.168.43.221	192.168.43.1	DHCP	358 DHCP Request - Transaction ID 0x1b7e7953			
1164	522.685	192.168.43.1	192.168.43.221	DHCP	371 DHCP ACK - Transaction ID 0x1b7e7953			

6、如果 IP 地址在四个消息交换结束时才设置,那四个消息交换的 IP 数据报使用什么值? 客户端和服务端都使用 **255.255.255.255**

Time	Source	Destination	Protocol	Length	Info			
2 7.587185	0.0.0.0	255.255.255.255	DHCP	342	DHCP	Discover	-	T
4 8.632950	192.168.1.1	255.255.255.255	DHCP	590	DHCP	Offer	-	Т
5 8.633123	0.0.0.0	255.255.255.255	DHCP	342	DHCP	Request	-	Т
6 8.635133	192.168.1.1	255.255.255.255	DHCP	590	DHCP	ACK	-	Т

7、DHCP 服务端的 IP 地址是多少?

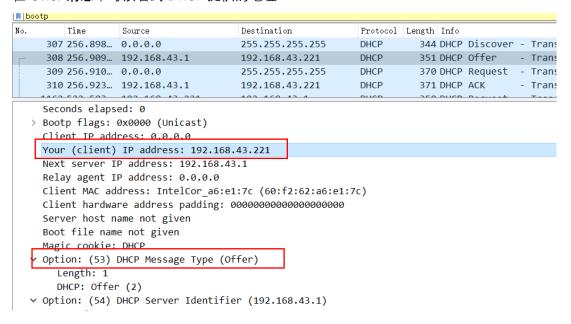
192.168.43.1

310 256.923... 192.168.43.1 192.168.43.221 DHCP 371 DHCP ACK - Transaction ID 0x69f72ec9

8、 在 Offer 消息中, DHCP 提供给主机的 IP 地址是多少? 表明哪个 DHCP 报文中包含了所提供的 DHCP 地址。

192.168.43.221

在 Offer 消息中可以看到 DHCP 提供的地址

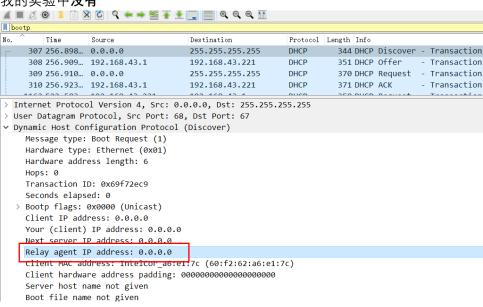


9、 在示例中, 主机和 DHCP 服务端之间没有中继代理。跟踪中哪些值表示没有中继代理? 你的实验中有中继代理吗?

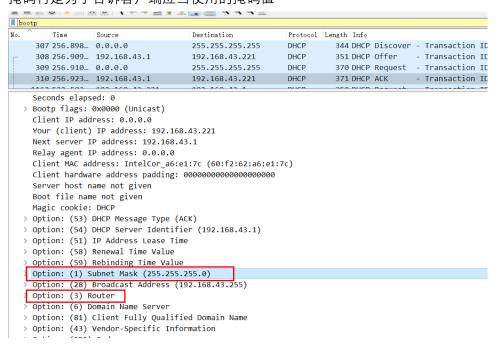
如果有,代理的 IP 地址是什么?

当 Relay agent IP address 是 0.0.0.0 时,表示没有中继代理。

我的实验中**没有**



10、DHCP Offer 报文中路由器行和子网掩码行的用途:路由器行表明客户端的默认网关是什么 掩码行是为了告诉客户端应当使用的掩码值



11、示例文件中,DHCP 服务端向客户端提供了一个特定的 IP 地址。在客户端对第一个服务端发送 Offer 报文的回应中,客户单是否接收这个 IP 地址?

在客户端的 Response 中,客户端的请求地址在哪?

是

请求地址为 192.168.1.101

```
Time
No.
                 Source
                                      Destination
                                                          Protocol Length Info
       27.587185 0.0.0.0
                                     255.255.255.255
                                                          DHCP
                                                                   342 DHCP Discover - Transa
       4 8.632950 192.168.1.1
                                     255,255,255,255
                                                         DHCP
                                                                    590 DHCP Offer
                                                                                   - Transa
       5 8.633123 0.0.0.0
                                 255.255.255.255
                                                          DHCP
                                                                    342 DHCP Request - Transa
      6 8.635133 192.168.1.1
                                    255.255.255.255
                                                          DHCP
                                                                    590 DHCP ACK
                                                                                    - Transa
      36 20.134178 192.168.1.101
                                                          DHCP
                                                                   342 DHCP Request - Transa
                                     192,168,1,1
     37 20.135930 192.168.1.1
                                     255,255,255,255
                                                          DHCP
                                                                    590 DHCP ACK
                                                                                    - Transa
      41 25.073867 192.168.1.101
                                    192.168.1.1
                                                                    342 DHCP Release - Transa
    Seconds elapsed: 0
  > 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: Dell_4f:36:23 (00:08:74:4f:36:23)
    Server host name not given
    Boot file name not given
    Magic cookie: DHCP
  > Option: (53) DHCP Message Type (Request)
  > Option: (61) Client identifier

→ 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)
  > Option: (12) Host Name
  > Option: (60) Vendor class identifier
  > Option: (55) Parameter Request List
  > Option: (255) End
```

12、租赁时间的目的?

实验的租期?

目的: IP 地址是有限的,对于没有使用的 IP 地址,DHCP 服务器需要进行回收,**以免出现IP 地址不够用**的情况。

租赁时间: 1小时

```
Magic cookie: DHCP

> Option: (53) DHCP Message Type (ACK)

> Option: (54) DHCP Server Identifier (192.168.43.1)

> Option: (51) IP Address Lease Time

Length: 4

IP Address Lease Time: (3600s) 1 hour

> Option: (58) Renewal Time Value

> Option: (59) Rebinding Time Value
```

13、DHCP release 的目的?

DHCP 服务端是否发出确认客户端的 DHCP 请求? 如果客户端的 DHCP release 消息丢失会怎样?

目的:**释放租用的 IP 地址 没有**发出确认客户端的请求 如果丢失:回收 IP 地址

14、清除 bootp filter。DHCP 报文交换期间是否收到 ARP 报文? 如果是,解释目的。

有

目的: 检查 IP 地址是否冲突

