VILNIUS UNIVERSITY
ŠIAULIAI ACADEMY

BACHELOR PROGRAMME SOFTWARE ENGINEERING

Computer networks laboratory work No. 6

Student : Hanna Asiadouskaya
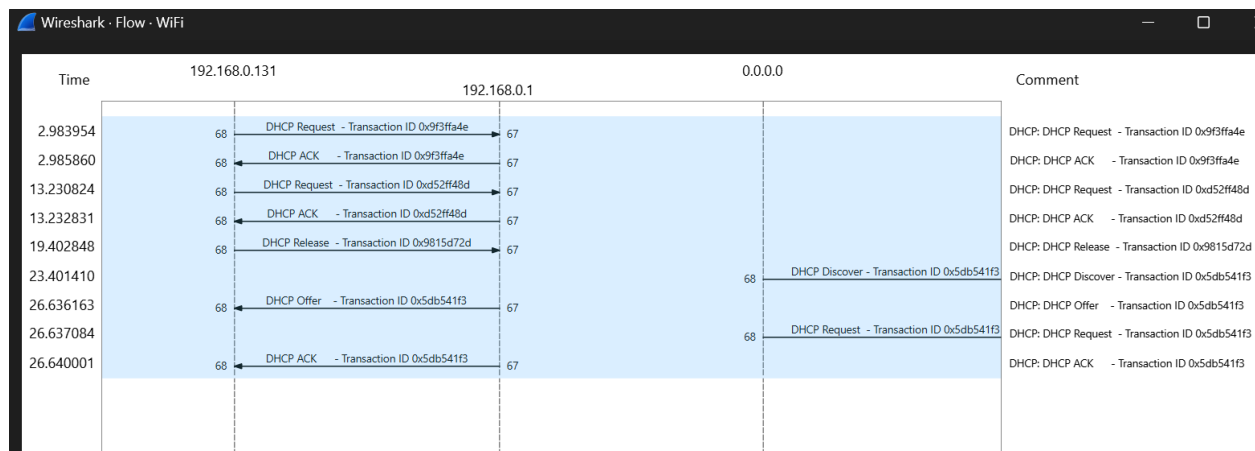
Lecturer: dr. Nerijus Ramanauskas

Šiauliai, 2024

1. DHCP sent the messages over UDP protocol

```
User Datagram Protocol, Src Port: 68, Dst Port: 67
```

2. Ports:

Discover	68	67
Offer	67	68
Request	68	67
ACK	67	68

3. The link layer address of my host:

```
Src: TPLink_20:8f:54 (9c:a2:f4:20:8f:54),
```

4. The DHCP message type is set to Request (3) for Request packets and Discover (1) for Discover packets.

5. Group 1 transaction ID:

`Transaction ID: 0x9f3ffa4e`

Group 2 transaction ID:

`Transaction ID: 0x5db541f3`

Transaction ID helps the client to group related answers and requests

6.

	Source	Destination
Discover	0.0.0.0	255.255.255.255
Offer	192.168.0.1	192.168.0.131
Request	0.0.0.0	255.255.255.255
ACK	192.168.0.1	192.168.0.131

7. My DHCP is 192.168.0.1

`192.168.0.1`

8. DHCP offered me an IP 192.168.0.131

`Your (client) IP address: 192.168.0.131`

9. In the example, the relay agent value is 0.0.0.0, so there is no relay agent. I also got a value of 0.0.0.0, so I also don't have any relay agent.

`Relay agent IP address: 0.0.0.0`

10. The subnet mask line provides the client with the information of which subnet mask to use. The router line indicates where the client should send messages by default.

11. After being offered the IP address 192.168.0.131, my client sent back a message further requesting that specific IP address.

12. Lease time means how long the client can occupy specific IP address assigned by the server. In my case, lease time is 2 hours

```
▼ Option: (51) IP Address Lease Time
      Length: 4
      IP Address Lease Time: 2 hours (7200)
```

13. The release message is used to return the IP address back to the server. Server does not provide acknowledgement if it received the release message. If message is lost, the client will release the IP address, but the server will not reassign that address until the lease time of the previous IP expires.

```
MicroStarINT_00:27:… Broadcast          ARP        42 Who has 192.168.0.1? Tell 192.168.0.19
TPLink_20:8f:54      MicroStarINT_00:27:… ARP       60 192.168.0.1 is at 9c:a2:f4:20:8f:54
```

14.

ARP messages help assign addresses.