

1. Wireshark : DHCP (4 балла)

1. Поверх UDP

| No. | Time | Source | Destination | Protocol | Length | Info |
|-----|-------------|-------------|-----------------|----------|--------|---|
| 12 | 1.811684582 | 0.0.0.0 | 255.255.255.255 | DHCP | 342 | DHCP Discover - Transaction ID 0xe167f60d |
| 13 | 1.817788082 | 192.168.1.1 | 192.168.1.7 | DHCP | 328 | DHCP Offer - Transaction ID 0xe167f60d |
| 14 | 1.818016401 | 0.0.0.0 | 255.255.255.255 | DHCP | 342 | DHCP Request - Transaction ID 0xe167f60d |
| 15 | 1.821451914 | 192.168.1.1 | 192.168.1.7 | DHCP | 328 | DHCP ACK - Transaction ID 0xe167f60d |

Frame 12: 342 bytes on wire (2736 bits), 342 bytes captured (2736 bits) on interface wlp0s20f3, id 0
Ethernet II, Src: IntelCor_a6:38:ad (fc:b3:bc:a6:38:ad), 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)

2. Адрес fc:b3:bc:a6:38:ad

| No. | Time | Source | Destination | Protocol | Length | Info |
|-----|-------------|-------------|-----------------|----------|--------|-----------------|
| 12 | 1.811684582 | 0.0.0.0 | 255.255.255.255 | DHCP | 342 | DHCP Discover - |
| 13 | 1.817788082 | 192.168.1.1 | 192.168.1.7 | DHCP | 328 | DHCP Offer - |
| 14 | 1.818016401 | 0.0.0.0 | 255.255.255.255 | DHCP | 342 | DHCP Request - |
| 15 | 1.821451914 | 192.168.1.1 | 192.168.1.7 | DHCP | 328 | DHCP ACK - |

Frame 12: 342 bytes on wire (2736 bits), 342 bytes captured (2736 bits) on interface wlp0s20f3
Ethernet II, Src: IntelCor_a6:38:ad (fc:b3:bc:a6:38:ad), Dst: Broadcast (ff:ff:ff:ff:ff:ff)
Destination: Broadcast (ff:ff:ff:ff:ff:ff)
Source: IntelCor_a6:38:ad (fc:b3:bc:a6:38:ad)
Type: IPv4 (0x0800)

3. Transaction-ID: 0xe167f60d

Dynamic Host Configuration Protocol (ACK)

Message type: Boot Reply (2)

Hardware type: Ethernet (0x01)

Hardware address length: 6

Hops: 0

Transaction ID: 0xe167f60d

Transaction-ID генерируется клиентом и позволяет клиенту связать DHCP запросы с DHCP ответами.

4. Src: 0.0.0.0, Dst: 255.255.255.255

| No. | Time | Source | Destination | Protocol | Length | Info |
|-----|-------------|-------------|-----------------|----------|--------|---|
| 12 | 1.811684582 | 0.0.0.0 | 255.255.255.255 | DHCP | 342 | DHCP Discover - Transaction ID 0xe167f60d |
| 13 | 1.817788082 | 192.168.1.1 | 192.168.1.7 | DHCP | 328 | DHCP Offer - Transaction ID 0xe167f60d |
| 14 | 1.818016401 | 0.0.0.0 | 255.255.255.255 | DHCP | 342 | DHCP Request - Transaction ID 0xe167f60d |
| 15 | 1.821451914 | 192.168.1.1 | 192.168.1.7 | DHCP | 328 | DHCP ACK - Transaction ID 0xe167f60d |

▶ Frame 12: 342 bytes on wire (2736 bits), 342 bytes captured (2736 bits) on interface wlp0s20f3, id 0
 ▶ Ethernet II, Src: IntelCor_a6:38:ad (fc:b3:bc:a6:38:ad), Dst: Broadcast (ff:ff:ff:ff:ff:ff)
 ▶ Destination: Broadcast (ff:ff:ff:ff:ff:ff)
 ▶ Source: IntelCor_a6:38:ad (fc:b3:bc:a6:38:ad)
 Type: IPv4 (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 (Discover)

5. 192.168.1.1

| | | | | | | |
|----|-------------|-------------|-------------|------|-----|--|
| 13 | 1.817788082 | 192.168.1.1 | 192.168.1.7 | DHCP | 328 | DHCP Offer - Transaction ID 0xe167f60d |
|----|-------------|-------------|-------------|------|-----|--|

6.

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Option: (54) DHCP Server Identifier (192.168.1.1)
Option: (51) IP Address Lease Time
  Length: 4
  IP Address Lease Time: (7200s) 2 hours
  
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Срок аренды ip-адреса составляет 2 часа.

Срок аренды ip-адреса нужен, чтобы ip-адреса занимали только клиенты, активные в данный момент.