Lab 2: UDP

CSE5355

The University of Texas Rio Grande Valley

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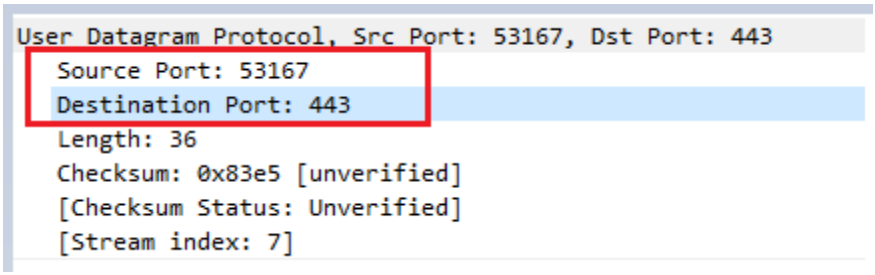
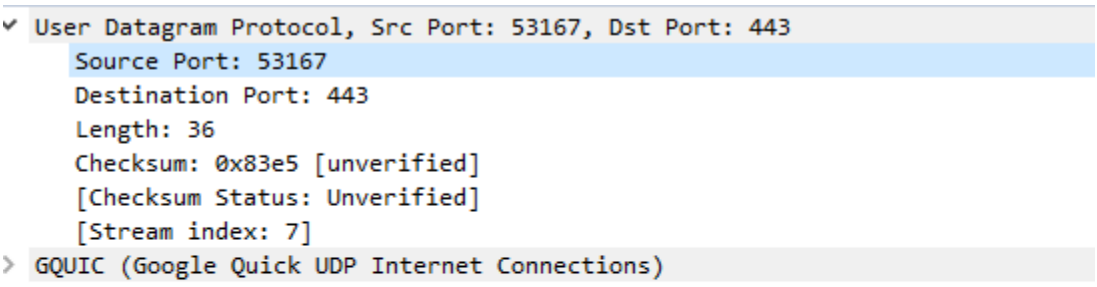
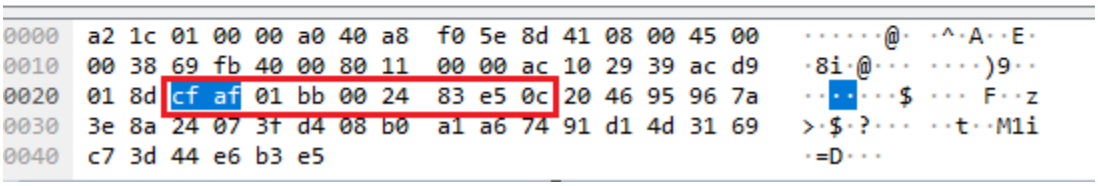
1. Select one UDP packet from your trace. From this packet, determine how many fields there are in the UDP header. (You shouldn't look in the textbook! Answer these questions directly from what you observe in the packet trace.) Name these fields.



2. By consulting the displayed information in Wireshark's packet content field for this packet, determine the length (in bytes) of each of the UDP header fields

The UDP header is 8 bytes long. The source port, destination port, length, and checksum are 2 bytes long.





3. The value in the Length field is the length of what? (You can consult the text for this answer). Verify your claim with your captured UDP packet.

The length field specifies the length in bytes of the UDP segment plus the header.
The length of the payload is 36 bytes. 44 bytes -8 bytes = 36 bytes

```
Source Port: 53167
Destination Port: 443
Length: 36
Checksum: 0x83e5 [unverified]
```

4. What is the maximum number of bytes that can be included in a UDP payload? (Hint: the answer to this question can be determined by your answer to 2. above)
   The max number of bytes in the UDP payload is (2^16 -1) bytes plus the header bytes.
   So the max number that can be included is (65535 – 8) bytes = 65527 bytes

5. What is the largest possible source port number? (Hint: see the hint in 4.)
   The largest source port number is 65535

6. What is the protocol number for UDP? Give your answer in both hexadecimal and decimal notation. To answer this question, you'll need to look into the Protocol field of the IP datagram containing this UDP segment (see Figure 4.13 in the text, and the discussion of IP header fields).

   The protocol in decimal is 17, in hexadecimal is 0x11 hex

```
Protocol: UDP (17)
Header checksum: 0x0000 [validati
[Header checksum status: Unverifi
Source: 172.16.41.57
Destination: 172.217.1.141
er Datagram Protocol, Src Port: 5
Source Port: 53167
Destination Port: 443
```

```
a2 1c 01 00 00 a0 40 a8  f0 5e 8
00 38 69 fb 40 00 80 11  00 00 a
01 8d cf af 01 bb 00 24  83 e5 0
```

7. Examine a pair of UDP packets in which your host sends the first UDP packet and the second UDP packet is a reply to this first UDP packet. (Hint: for a second packet to be sent in response to a first packet, the sender of the first packet should be the destination of the second packet). Describe the relationship between the port numbers in the two packets.

   The UDP packet sent by the host has the destination port of the reply packet. The reply packet has the destination port of the source of the sent packet. Basically the ports are swapped for each.