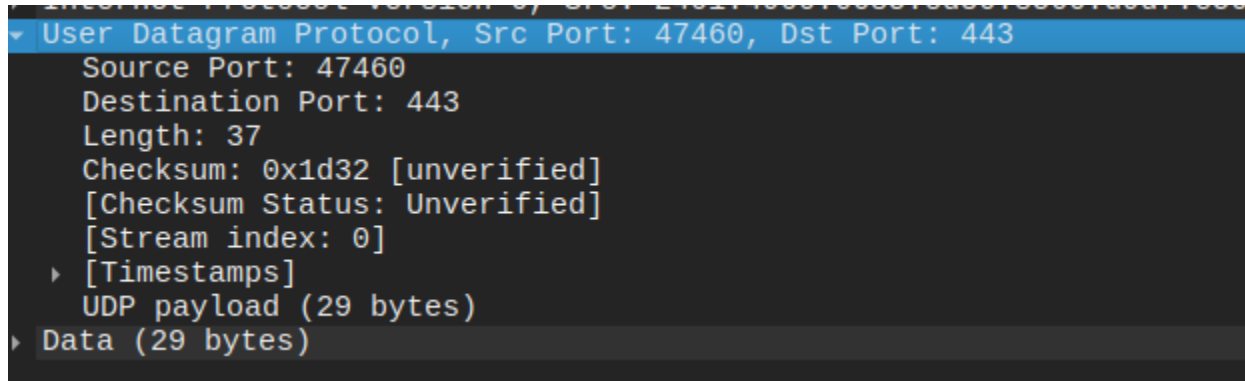


Ucp

1.) Select the first UDP segment in your trace. What is the packet number¹ of this segment in the trace file? What type of application-layer payload or protocol message is being carried in this UDP segment? Look at the details of this packet in Wireshark. 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.) What are the names of these fields?



2.) By consulting the displayed information in Wireshark's packet content field for this packet (or by consulting the textbook), what is the length (in bytes) of each of the UDP header fields?

ans) Here we got 4 header fields so each header contains 2 bytes so the total no of bytes is 8

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

ans) the value in the length field is the sum of the 8 header bytes, plus the (length - 8) encapsulated data bytes

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.)

ans) the largest port number possible is $2^{16} - 1$ which is 65535 assuming each needs 8 bits we need to subtract this from the value and get the answer 65527

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

Largest possible port number is $2^{16} - 1$ which is 65535

6.)What is the protocol number for UDP? Give your answer in 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).

ans.)

```
Internet Protocol Version 6, Src: 2401:4900:6685:cd36:8566:d9df:e560:435d, Dst: 2404:6800:400
  0110 .... = Version: 6
  ▸ .... 0000 0000 .... = Traffic Class: 0x00 (DSCP: CS0, ECN: Not-ECT)
    .... 1001 1001 0101 1011 1111 = Flow Label: 0x995bf
    Payload Length: 37
    Next Header: UDP (17)
    Hop Limit: 64
```

7.) Examine the 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). What is the packet number¹ of the first of these two UDP segments in the trace file? What is the value in the source port field in this UDP segment? What is the value in the destination port field in this UDP segment? What is the packet number² of the second of these two UDP segments in the trace file? What is the value in the source port field in this second UDP segment? What is the value in the destination port field in this second UDP segment? Describe the relationship between the port numbers in the two packets.

ans.) we can infer that

Send packet source port will be equal to reply packet source port and reply packet destination port will be equal to send packet source port