A first Look at the Captured Trace

1. Select one UDP packet form your trace. From this packet, determine how many fields there are in the UDP header. Name these fields

   - There are Four fields in the UDP Header:
     - Source Port
     - Destination Port
     - Length
     - Checksum

   ```
   ▼ User Datagram Protocol, Src Port: 63225, Dst Port: 192
       Source Port: 63225
       Destination Port: 192
       Length: 12
       Checksum: 0x8e03 [unverified]
       [Checksum Status: Unverified]
       [Stream index: 0]
   ```

   - ```
     ▶ Data (4 bytes)
     ```

2. Determine the length in bytes of each of the UDP header fields

   - Each field in the UDP header is 2 bytes

   ```
   ▼ User Datagram Protocol, Src Port: 63225, Dst Port: 192
       Source Port: 63225
       Destination Port: 192
       Length: 12
       Checksum: 0x8e03 [unverified]
       [Checksum Status: Unverified]
       [Stream index: 0]
   ▼ Data (4 bytes)
       Data: 10010310
       [Length: 4]
   0000  00 08 e3 ff fd 94 88 e9  fe 87 d7 13 08 00 45 00   ·····E·
   0010  00 20 47 3d 00 00 40 11  cc 88 0a 6a 28 36 0a 6a   · G=··@· ···j(6·j
   0020  29 fe f6 f9 00 c0 00 0c  8e 03 10 01 03 10         )······ ······
   ```

   -

3. The value in the length field is the length of what? Verify your claim with your captured UDP packet

   - Similar to how we found the payload in the HTTP lab, the Length value represents the total length of the packet
   - In Our case it is 8 bytes from the header, and 4 bytes of data, so the

   ```
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       Source Port: 63225
       Destination Port: 192
       Length: 12
       Checksum: 0x8e03 [unverified]
       [Checksum Status: Unverified]
       [Stream index: 0]
   ▼ Data (4 bytes)
       Data: 10010310
       [Length: 4]
   ```

   Length = 12

4. What is the maximum number of bytes that can be included in a UDP payload?
   ```

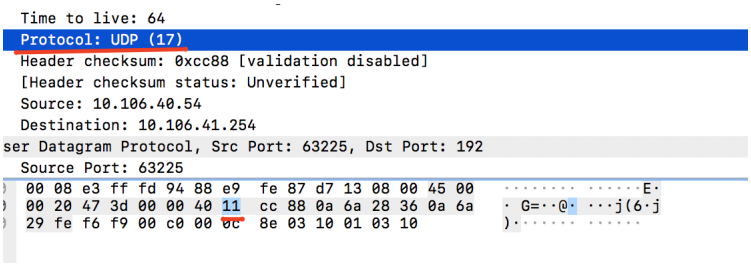
- the maximum numbere of bytse for a UDP payload is 65535 minus the number of bytes in the header. Which leaves us with (65535 - 8) = 65527

5. What is the largest possible source port number?

   - Port numbers are 16 bit unsigned integres, 65535 is the maximum port value.

6. What is the protocol number for UDP? Give your answer in both hexadecimal and decimal notation

   - Decimal: 17
   - Hexadecimal: 0x11



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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. Describe the relationship between the port numbers in the two packets.

   - As seen earlier with the source and destination ports, the source port of the sent UDP packet will be the destination port of the UDP reply.