**Wireshark Lab 2: UDP**

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|  | **Question** | **Answer** |
| 1 | Select one packet. From this packet, determine how many fields there are in the UDP header. Name these fields. | There are 8 fields:   * Source port * Destination port * Length * Checksum |
| Annotated Screenshots  (if needed) |  | |
| 2 | From the packet content field, determine the length (in bytes) of each of the UDP  header fields. | The header is 8 bytes:   * Source port: 2 bytes * Destination port: 2 bytes * Length: 2 bytes * Checksum: 2 bytes |
| Annotated Screenshots  (if needed) |  | |
| 3 | The value in the Length field is the length of what? Verify your claim with your  captured UDP packet. | The value in the length field is the size of the header plus the size of the UDP payload.  Length = Header + payload  = 8 + 55 = 63 |
| Annotated Screenshots  (if needed) |  | |
| 4 | What is the maximum number of bytes that can be included in a UDP payload. | The maximum size of a UDP segment is 65, 535 bytes, so the payload can be at most 65, 527 bytes |
| Annotated Screenshots  (if needed) |  | |
| 5 | What is the largest possible source port number? | The highest available port number is 65, 535, this is because the port size is 2 bytes thus allowing for 2^16 – 1 values. |
| Annotated Screenshots  (if needed) |  | |
| 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 IP  header.) | The protocol number is 17 or 0x11. |
| Annotated Screenshots  (if needed) |  | |
| 7 | Search “UDP” in Google and determine the fields over which the UDP checksum is calculated. | The checksum is calculated by summing up all the 16-bit words using one’s compliment, then one is complementing that sum it yields the checksum. The sum is calculated all the 16-bit words in the IP and UDP header, plus the payload:   * Source IP (IP) * Destination IP (IP) * Protocol (IP) * Length (IP) * Source port (UDP) * Destination port (UDP) * Length (UDP) * Payload (UDP) |
| Annotated Screenshots  (if needed) |  | |
| 8 | Examine a pair of UDP packets in which the first packet is sent by your host and the second packet is a reply to the first packet. Describe the relationship between  the port numbers in the two packets | The source port of the first packet is the destination port of the second packet, and the destination port of the first packet is the source port of the second packet. |
| Annotated Screenshots  (if needed) |  | |