

Wireshark Lab 2: UDP

Group Details:

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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.	Four fields. 1. source port 2. destination port 3. length 4. checksum
Annotated Screenshots (if needed)	<div><div>▼ User Datagram Protocol, Src Port: 57621, Dst Port: 57621</div><div><div>Source Port: 57621</div><div>Destination Port: 57621</div><div>Length: 52</div><div>Checksum: 0xac76 [unverified]</div><div>[Checksum Status: Unverified]</div><div>[Stream index: 11]</div><div>> [Timestamps]</div><div>UDP payload (44 bytes)</div><div>> Data (44 bytes)</div></div></div>	
2	From the packet content field, determine the length (in bytes) of each of the UDP header fields.	Use total length deduct the data length to get the header length: $52 - 44 = 8$ bytes

Annotated Screenshots (if needed)	<div> <div>User Datagram Protocol, Src Port: 57621, Dst Port: 57621</div> <div> Source Port: 57621 Destination Port: 57621 Length: 52 Checksum: 0xac76 [unverified] [Checksum Status: Unverified] [Stream index: 11] > [Timestamps] UDP payload (44 bytes) </div> <div>Data (44 bytes)</div> <div> Data: 53706f74556470309492f074b4e6991f000100044895c203963fea9071d12f4487299c6d... [Length: 44] </div> <div> <pre> 0000 ff ff ff ff ff ff 38 f9 d3 5b b9 8b 08 00 45 60 8. .[...E` 0010 00 48 a8 78 00 00 40 11 4e c4 64 41 5a 87 64 41 .H.x...@. N.dAZ.dA 0020 5f ff e1 15 e1 15 00 34 ac 76 53 70 6f 74 55 64 _.....4 .vSpotUd 0030 70 30 94 92 f0 74 b4 e6 99 1f 00 01 00 04 48 95 p0...t... ..H. 0040 c2 03 96 3f ea 90 71 d1 2f 44 87 29 9c 6d 16 8e ...?...q. /D.) .m.. 0050 46 1c af 55 56 38 F...UV8 </pre> </div> </div>	
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 number of bytes in header and UDP payload. $8+44=52$ bytes
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4	What is the maximum number of bytes that can be included in a UDP payload.	The maximum number that can be included in the UDP payload is $2^{(16)}-1-8=65527$ bytes
Annotated Screenshots (if needed)		
5	What is the largest possible source port number?	The largest possible source port number is $2^{(16)}-1=65535$. Registered ports are in the range 1024 to 49151. Dynamic ports are in the range 49152 to 65535.
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.)	Decimal: 17 Hex: 0x11

Annotated Screenshots (if needed)	<ul style="list-style-type: none"> <ul style="list-style-type: none"> Internet Protocol Version 4, Src: 100.65.90.135, Dst: 100.65.95.255 <ul style="list-style-type: none"> 0100 = Version: 4 0101 = Header Length: 20 bytes (5) > Differentiated Services Field: 0x60 (DSCP: CS3, ECN: Not-ECT) Total Length: 72 Identification: 0xa878 (43128) > Flags: 0x00 ...0 0000 0000 0000 = Fragment Offset: 0 Time to Live: 64 Protocol: UDP (17) Header Checksum: 0x4ec4 [validation disabled] [Header checksum status: Unverified] Source Address: 100.65.90.135 Destination Address: 100.65.95.255
7	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Search “UDP” in Google and determine the fields over which the UDP checksum is calculated.</p> </div> <div style="width: 45%;"> <p>UDP checksum is calculated on UDP header and data (Length) along with the contents of Pseudo Header.</p> </div> </div>
Annotated Screenshots (if needed)	
8	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>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</p> </div> <div style="width: 45%;"> <p>Source port of the first packet is the destination of the second packet. And the destination port of the first packet is the source of the second packet.</p> </div> </div>
Annotated Screenshots (if needed)	<ul style="list-style-type: none"> > Internet Protocol Version 4, Src: 144.195.162.108, Dst: 192.168.2.14 <ul style="list-style-type: none"> User Datagram Protocol, Src Port: 8801, Dst Port: 60236 <ul style="list-style-type: none"> Source Port: 8801 Destination Port: 60236 Length: 35 Checksum: 0x5b7b [unverified] [Checksum Status: Unverified] [Stream index: 0] > [Timestamps] UDP payload (27 bytes) > Internet Protocol Version 4, Src: 192.168.2.14, Dst: 144.195.162.108 <ul style="list-style-type: none"> User Datagram Protocol, Src Port: 60236, Dst Port: 8801 <ul style="list-style-type: none"> Source Port: 60236 Destination Port: 8801 Length: 70 Checksum: 0xf63d [unverified] [Checksum Status: Unverified] [Stream index: 0] > [Timestamps] UDP payload (62 bytes)