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KHOA KHOA HỌC & KỸ THUẬT MÁY TÍNH



MẠNG MÁY TÍNH (CO3094)

Báo cáo Lab 2_3b: Wireshark Lab – UDP

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Tp. Hồ Chí Minh, Tháng 10/2021

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.

The UDP header contains 4 fields: source port, destination port, length, and checksum

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.

Each of the UDP header fields is 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

8 bytes UDP packet header added with 50 bytes payload from Application Layer equals to the length of 58 bytes.

> User Datagram Protocol, Src Port: 4334, Dst Port: 161 > Simple Network Management Protocol		Simple Network Management Protocol
0020	01 68 10 ee 00 a1 00 3a 65 f8 30 30 02 01 00 04	020 01 68 10 ee 00 a1 00 3a 65 f8 30 30 02 01 00 04
0030	06 70 75 62 6c 69 63 a0 23 02 02 18 fb 02 01 00	030 06 70 75 62 6c 69 63 a0 23 02 02 18 fb 02 01 00
0040	02 01 00 30 17 30 15 06 11 2b 06 01 04 01 0b 02	040 02 01 00 30 17 30 15 06 11 2b 06 01 04 01 0b 02
0050	03 09 04 02 01 02 02 02 01 00 05 00	050 03 09 04 02 01 02 02 02 01 00 05 00
User Datagram Protocol (udp), 8 bytes		Simple Network Management Protocol (snmp), 50 bytes

4. What is the maximum number of bytes that can be included in a UDP payload?
The maximum number of bytes that can be included in a UDP payload is $2^{16} - 1$ less the header bytes. This gives $65535 - 8 = 65527$ bytes.

5. What is the largest possible source port number?

The largest possible source port number is 2^{16} or $2^{16} - 1 = 65535$

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 IP protocol number for UDP is 0x11 hex, which is 17 in decimal value

No.	Time	Source	Destination	Protocol	Length
1	0.000000	192.168.1.102	192.168.1.104	SNMP	
Protocol: UDP (17)					
0000	00 30 c1 61 eb ed 00 08 74 4f 36 23 08 00 45 00	0 a ... t06# ... E			
0010	00 4e 02 fd 00 00 80 11 00 00 c0 a8 01 66 c0 a8	N ... f			

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.

The source port number from the source IP sends the request packet to the destination IP's destination port number. During the sending of a response, the source IP that sent the request packet becomes the destination and it's source port becomes the destination port. The response sender's IP and port number turns to the source.

No.	Time	Source	Destination
7	1.412603	2402:800:611b:993d:1587:605c:4a32:baf1	2001:4860:4860::8888
10	1.491256	2001:4860:4860::8888	2402:800:611b:993d:1587:605c:4a32:baf1
> User Datagram Protocol, Src Port: 52863, Dst Port: 443 Source Port: 52863 Destination Port: 443 Length: 1338			



No.	Time	Source	Destination
7	1.412603	2402:800:611b:993d:1587:605c:4a32:baf1	2001:4860:4860::8888
10	1.491256	2001:4860:4860::8888	2402:800:611b:993d:1587:605c:4a32:baf1
User Datagram Protocol, Src Port: 443, Dst Port: 52863			
Source Port: 443			
Destination Port: 52863			
Length: 1338			