计算机网络实验报告_UDP

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实验目的

1. 快速了解UDP协议
2. 了解UDP的标头数据,报文段数据结构

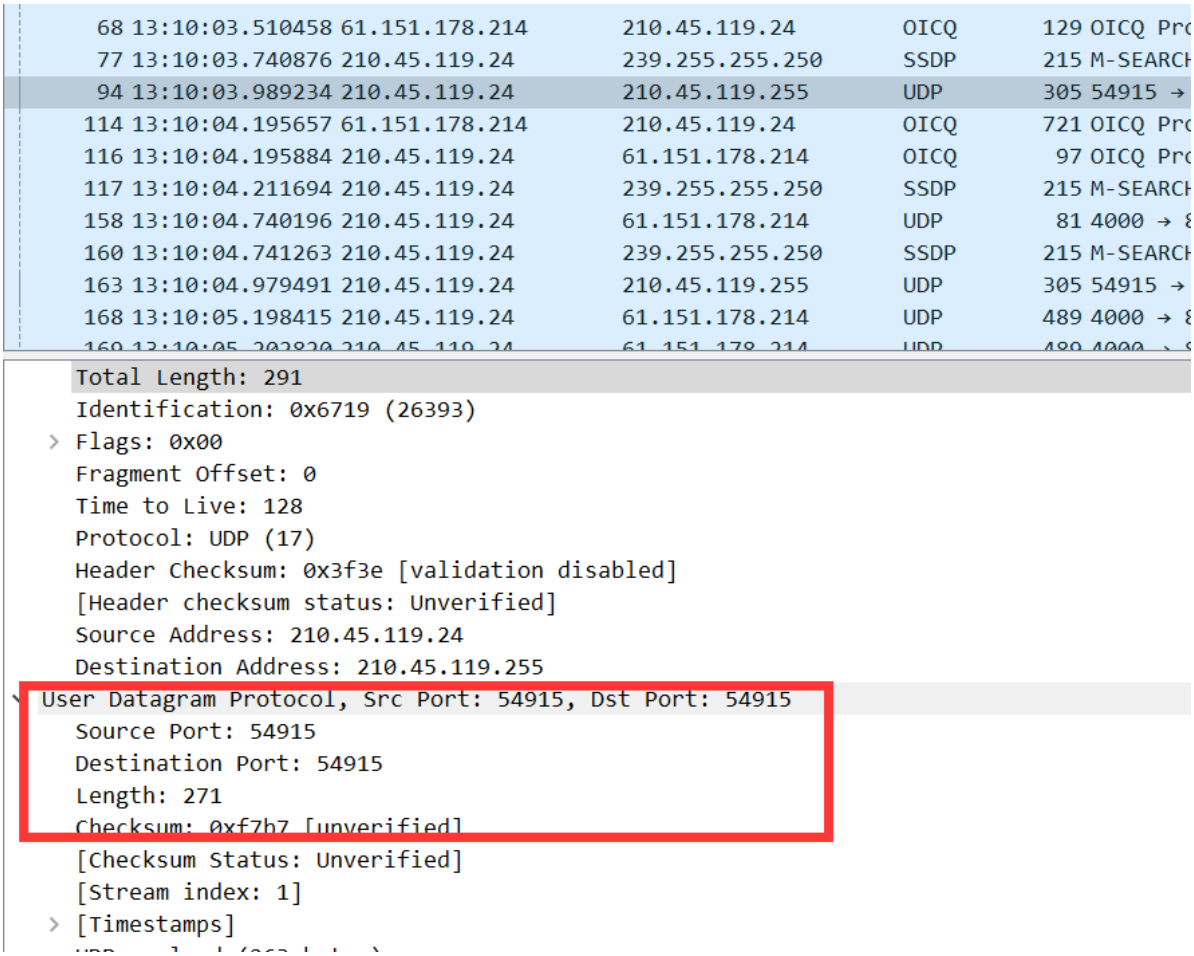
实验过程

1. 打开wireshark,开始抓包
2. 随意打开一些网站,观察到有UDP协议包产生,关闭抓包
3. 用UDP过滤器过滤结果,然后分析

实验结果

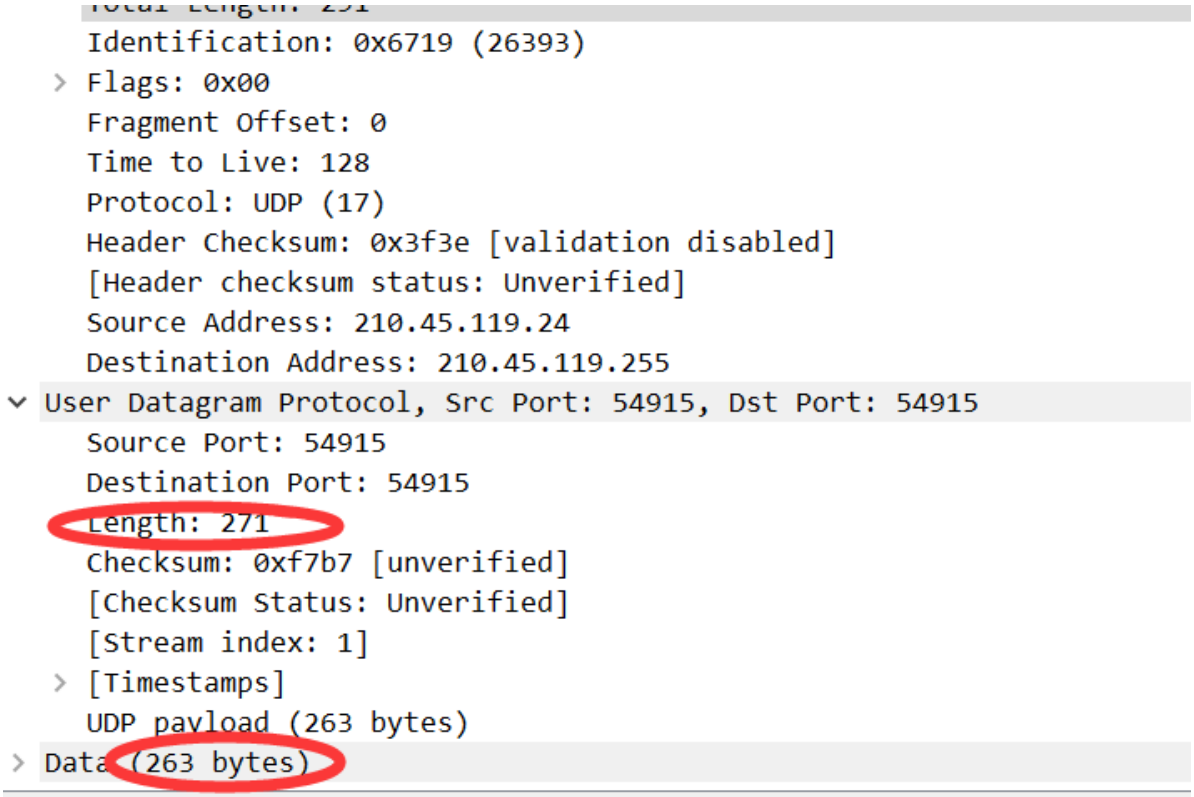
1.Select one UDP packet from your trace. From this packet, determine how many fields there are in the UDP header. (You shouldn't look in the textbook! Answer these questions directly from what you observe in the packet trace.) Name these fields.

UDP头包含四个部分: Source Port, Destination Port, Length, Checksum.



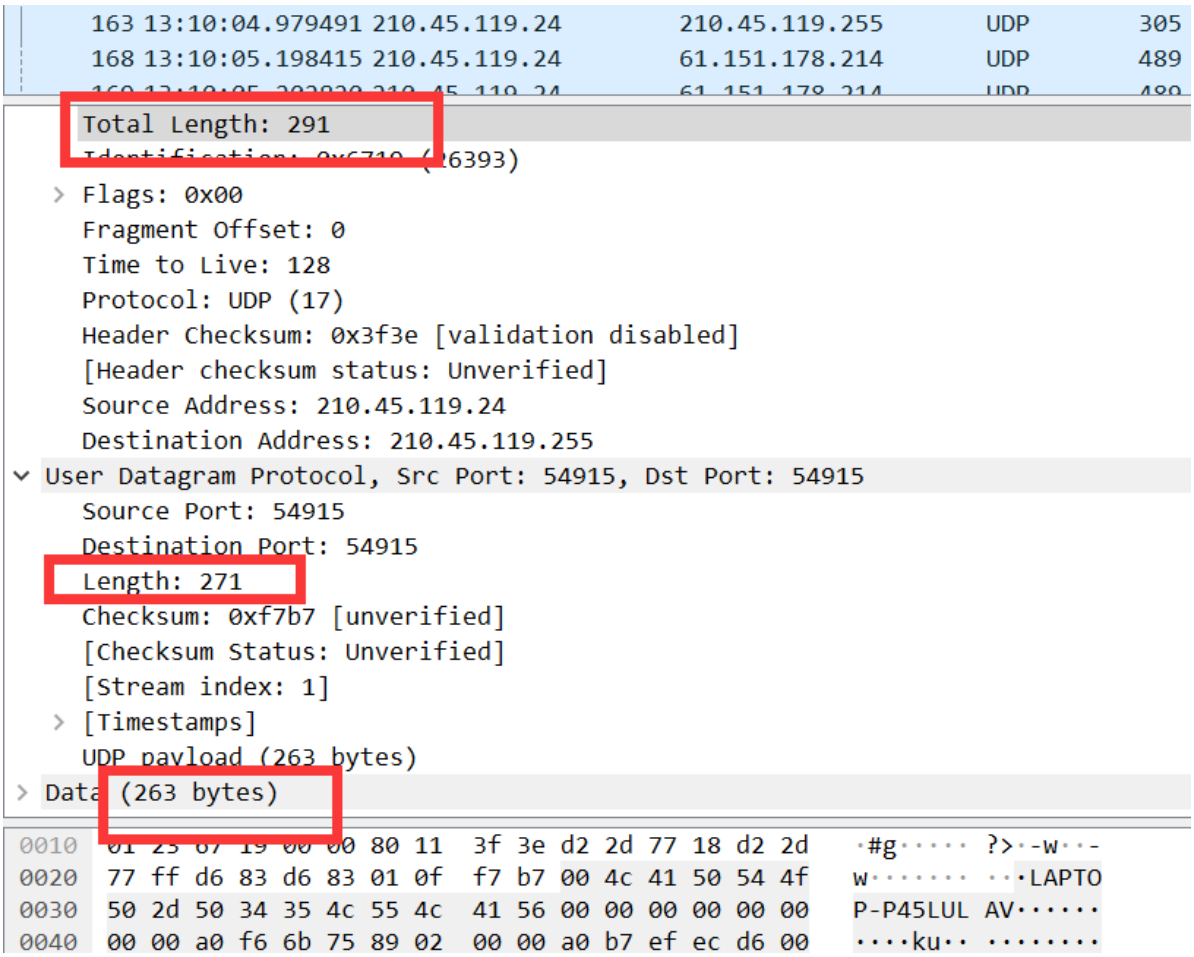
2.By consulting the displayed information in Wireshark's packet content field for this packet, determine the length (in bytes) of each of the UDP header fields.

UDP报头长度=总长度-数据长度,一共271-263=8Byte.



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.

这里的长度是UDP头的长度+数据的长度(本例子中报头长度为 8Byte),而这里的Total Length指的是上述长度加上IP头的长度



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. above)

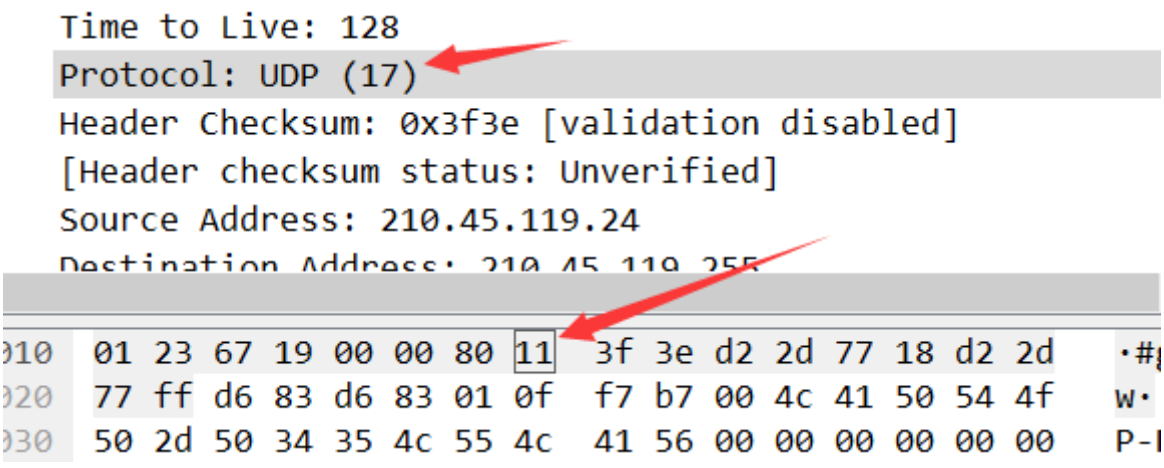
理论上UDP整个包的长度最大为65536Byte,其中报头8Byte,所以最多可以用65536-8=65528Byte(但是由上一问知道达不到这么大,因为还有IP头长度)

5.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. above)

端口号从0开始,从而最大为65536-1=65535.

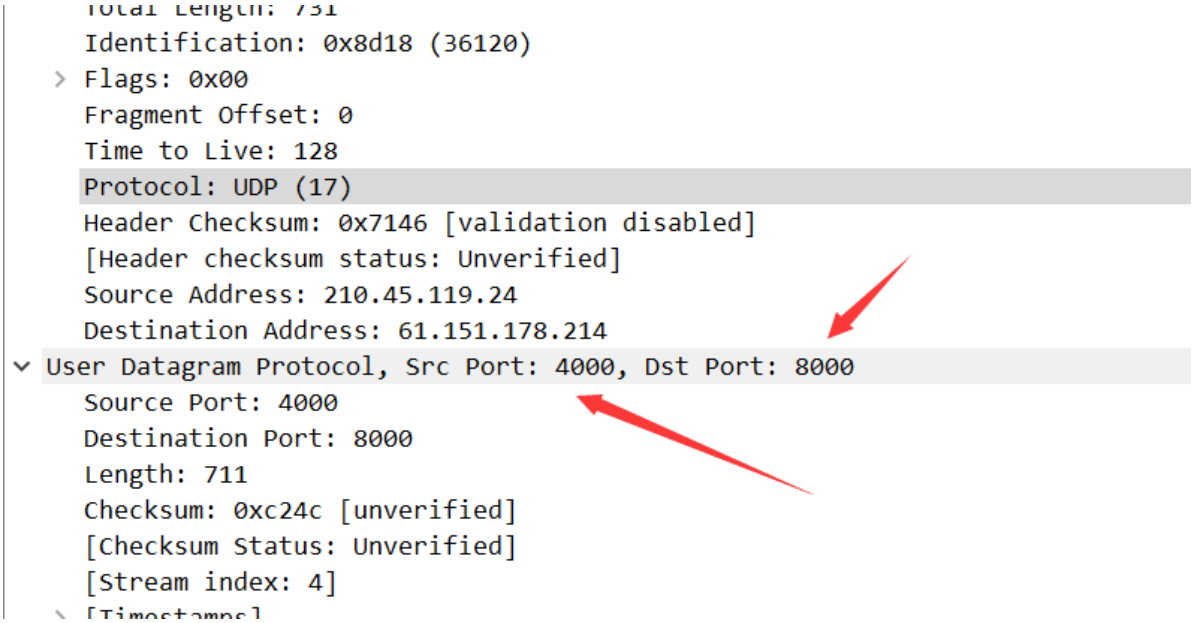
6.What is the protocol number for UDP? Give your answer in both hexadecimal and decimal notation. To answer this question, you'll need to look into the Protocol field of the IP datagram containing this UDP segment (see Figure 4.13 in the text, and the discussion of IP header fields).

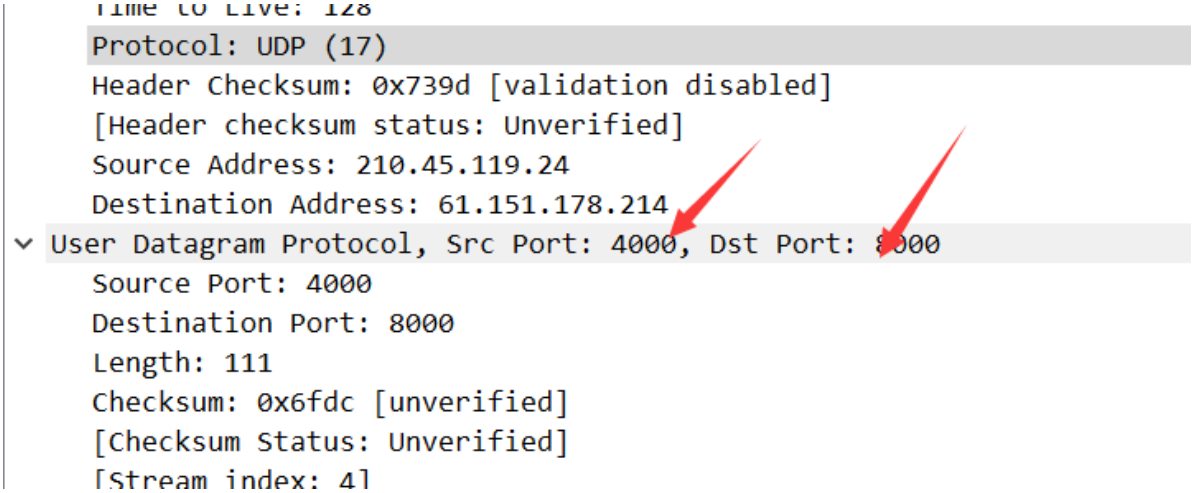
UDP协议号为: 17(10进制), 11(16进制)



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

发送的UDP数据包源端口号是响应数据包的目标端口号,发送的UDP数据包目标端口号是响应数据包的源端口号





实验心得

本次实验巩固加深了UDP相关的知识,同时对其有了进一步的了解.