网络基础——Assignment 2

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1、[10 Marks] Use the protocol analyzer Wireshark to capture the packets of your own computer. Use an appropriate protocol filter to focus on the related traffic and then answer the following questions.

a) Capture and show a UDP segment. What is the source IP address of this segment? What is the destination IP address of this segment? What is the source port number of this segment? What is the destination port number of this segment?

解：如图 1.1，首先查询本机的 IPv4 地址，为 10.192.250.215。

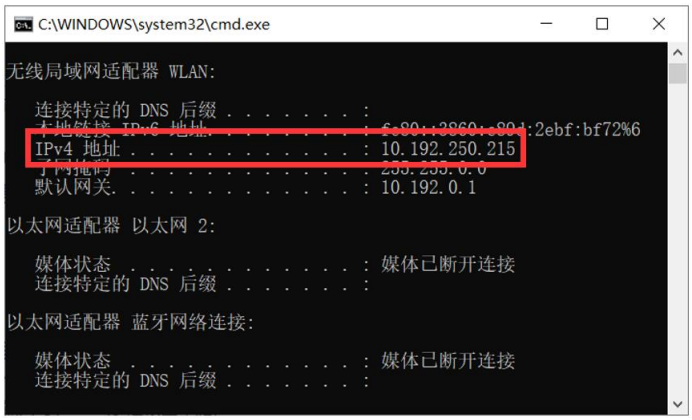

图 1.1 本机 IP 地址

将 Wireshark 的捕获过滤器设置为 udp，捕获分组，得到结果如图 1.2 所示：

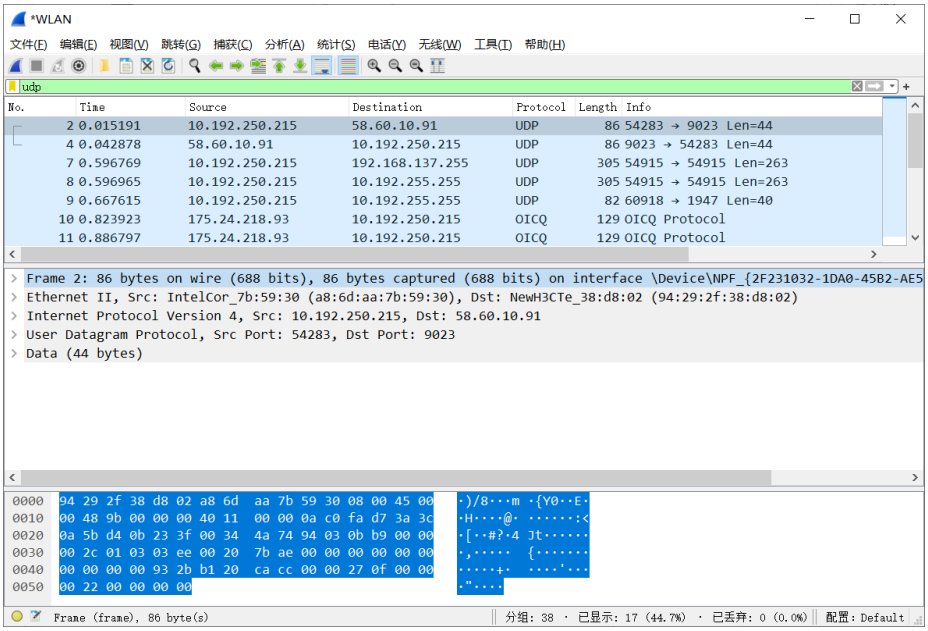

图 1.2 udp 捕获分组

由于 QICQ 等都是基于 UDP 的传输层以上的协议，故会出现在捕获分组之中。以序

号为 No.2 的分组为例，展开 IPv4（网络层）信息，可知其源 IP 地址为 10.192.250.215，即本机；其目标 IP 地址为 58.60.10.91，如图 1.3 所示：

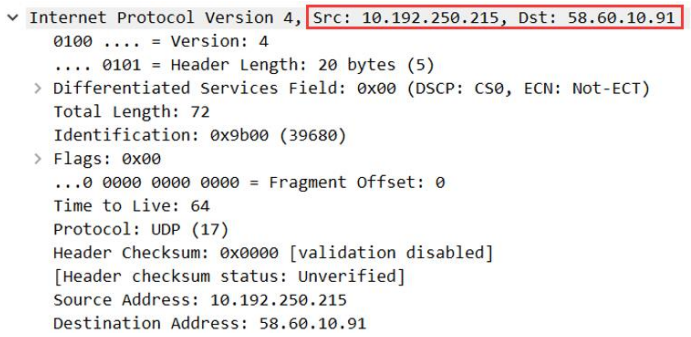

图 1.3 IPv4 信息

同理，展开 UDP（传输层）信息，可知此报文的源端口号为 54283，目标端口号为 9023，数据报长度为 52，校验和为 0x4a74，如图 1.4 所示：

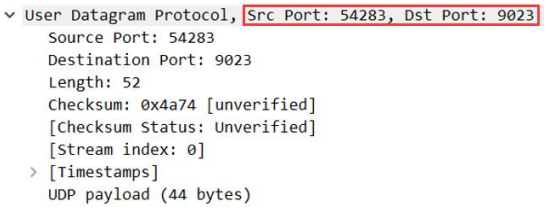

图 1.4 UDP 信息

b) Capture and show a TCP segment. What is the source IP address of this segment? What is the destination IP address of this segment? What is the source port number of this segment? What is the destination port number of this segment?

解：如图 2.1，将 Wireshark 的捕获过滤器设置为 tcp，得到捕获的分组。

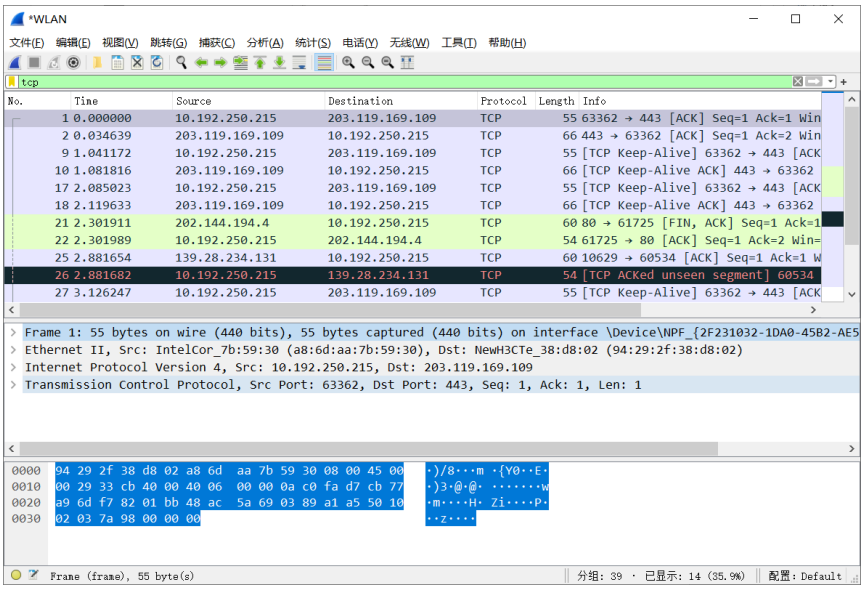

图 2.1 tcp 捕获分组

类似的，以序号为 No.1 的分组为例，展开其 IPv4（网络层）信息，可得其源 IP 地址为 10.192.250.215，即为本机的 IP 地址；其目标 IP 地址为 203.119.169.109，如图 2.2 所示：

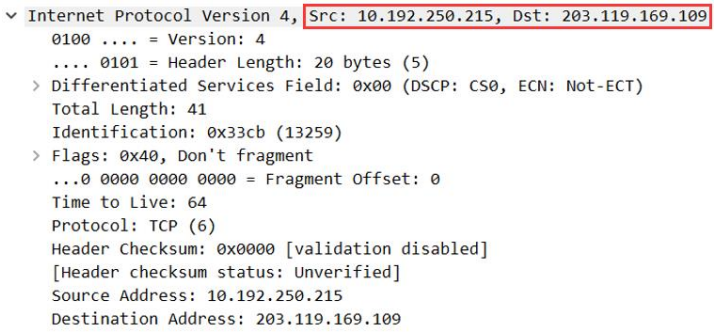

图 2.2 IPv4 信息

展开 TCP（传输层）信息，可知报文的源端口号为 63362，目标端口号为 443，如图 2.3 所示：

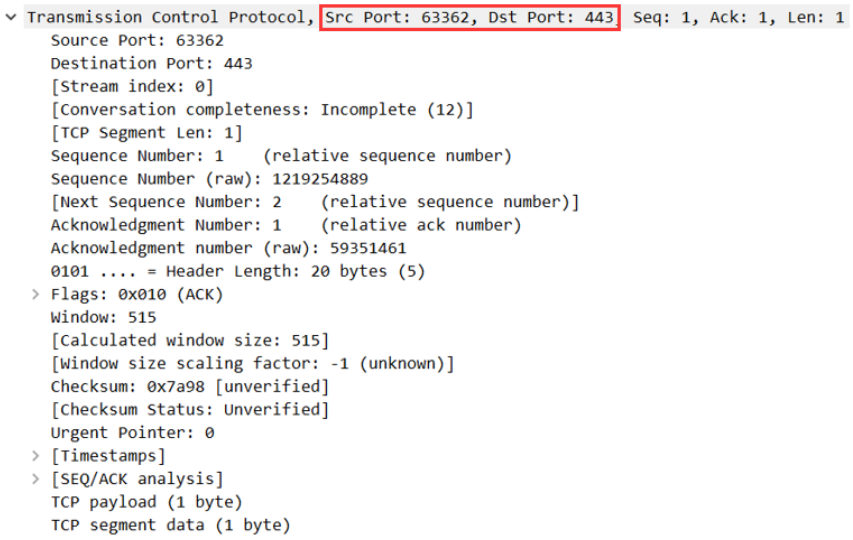

图 2.3 TCP 信息