Report for lab(4)

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COE331

Intro about the lab:

In this lab, we will talk about how to deal with the famous TCP protocol, by including a 148 KB txt file in our browser and starting to work on it.

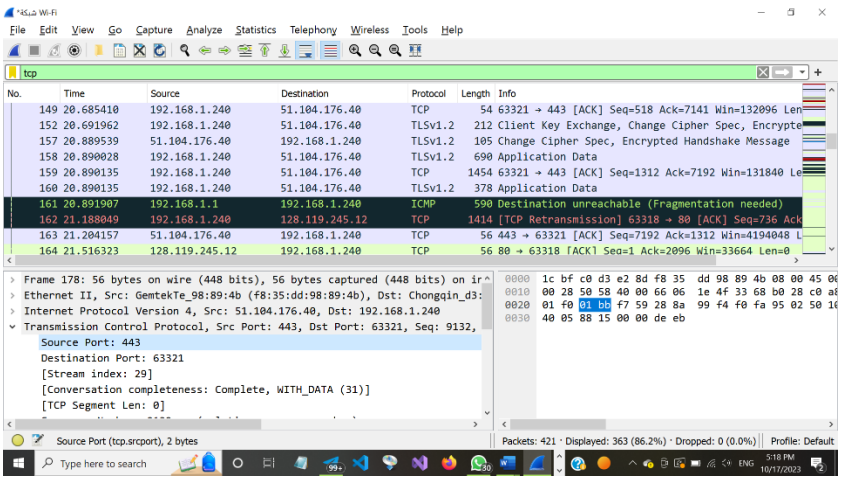
We will study the use of TCP for serialization and

Recognition numbers for

Provide reliable data transfer; We will see TCP Congestion Control Algorithm - Slow Start and Congestion Avoidance So let's get started...

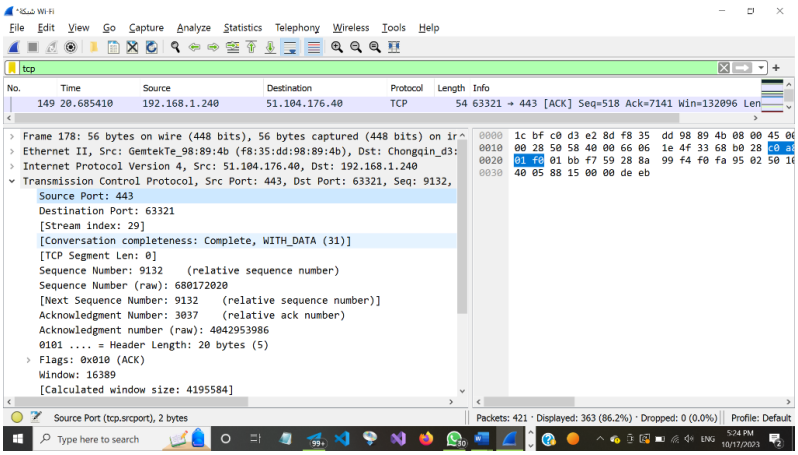
1. **What is the IP address and TCP port number used by the client computer (source) that is transferring the file to gaia.cs.umass.edu? To answer this question, it‟s probably easiest to select an HTTP message and explore the details of the TCP packet used to carry this HTTP message, using the “details of the selected packet header window” (refer to Figure 2 in the “Getting Started with Wireshark” Lab if you‟re uncertain about the Wireshark windows.**

Answer: The IP address and TCP port number used by the client computer (source) that is transferring the file to gaia.cs.umass.edu is 192.168.1.240 TCP port number : 63321 .



2. **[Select one TCP packet from your trace. From this packet, determine how many fields there are in the TCP header? (You shouldn‟t look in the textbook! Answer these questions directly from what you observe in the packet trace.) Name these fields. Then compare them with in information in the textbook].**

Answer: There are **11 fields** in the TCP header. The names of the fields are as follows:



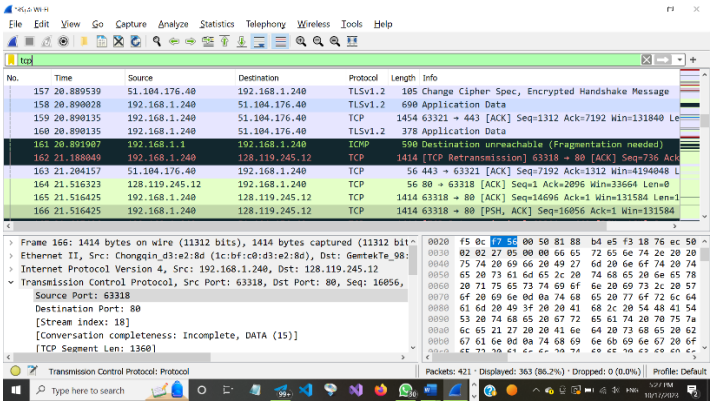
The number and names of the fields in the TCP header observed in the packet trace match the information in the textbook.

3. **What is the IP address of gaia.cs.umass.edu? On what port number is it sending and receiving TCP segments for this connection?**

Answer: The IP address of gaia.cs.umass.edu is 128.119.245.12.

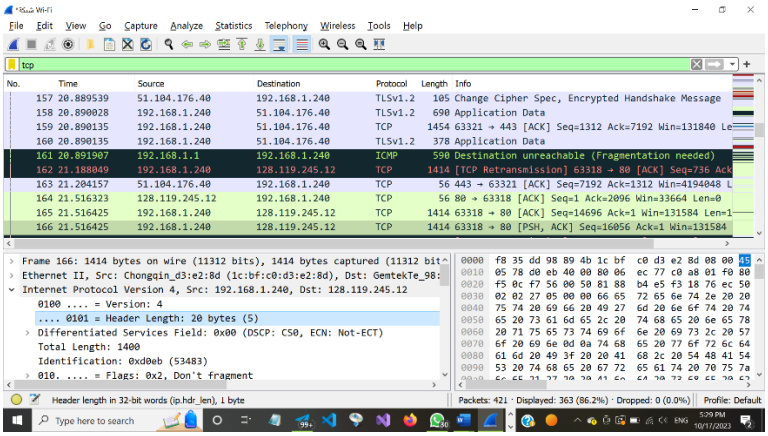
It is sending and receiving TCP segments for this connection on

port number 80 (HTTP)



4. **[What is the length of the TCP Header?]**

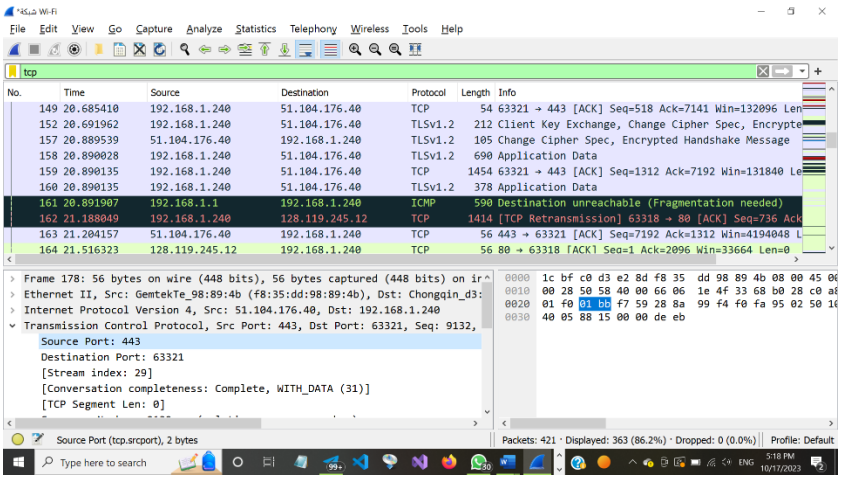
Answer: The length of the TCP header is **20 bytes**.



5. **What is the IP address and TCP port number used by your client computer (source) to transfer the file to gaia.cs.umass.edu?**

The IP address and TCP port number used by my client computer (source) to transfer the file to gaia.cs.umass.edu is 192.168.1.240.

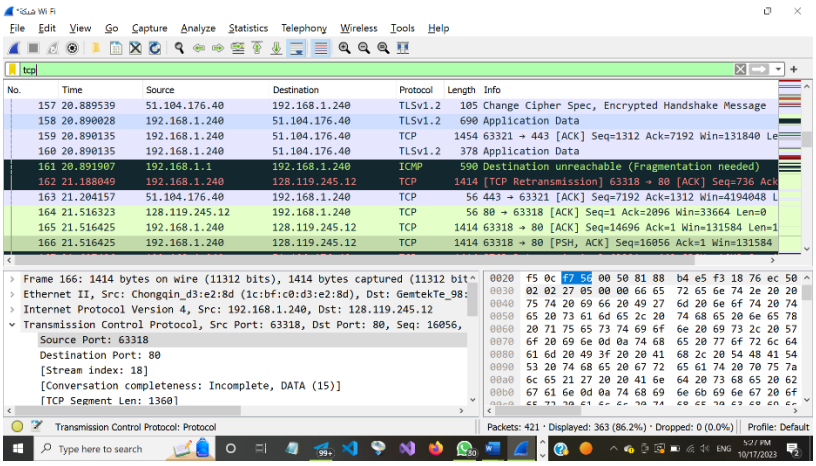
TCP port number: 63321



6. **What is the IP address and TCP port number used server (destination)?**

Answer: The IP address and used by the server (destination) is 128.119.245.12

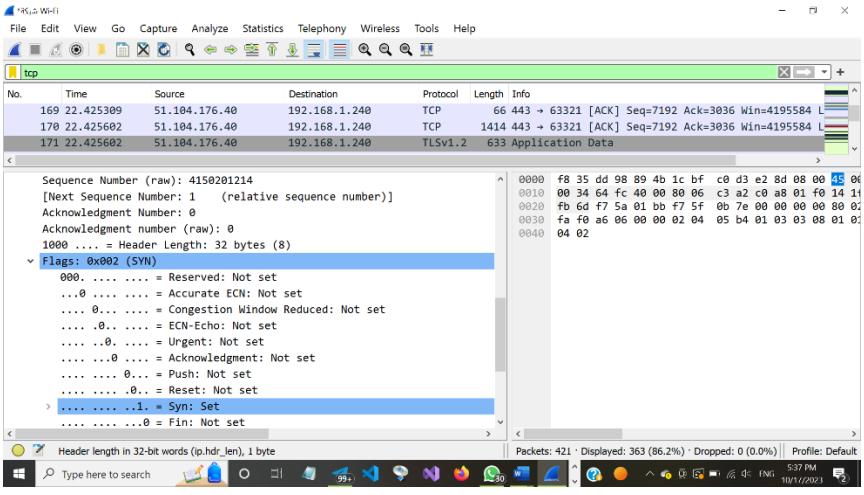
TCP port number : 80 (HTTP).



7. **What is the sequence number of the TCP SYN segment that is used to initiate the TCP connection between the client computer and gaia.cs.umass.edu? What is it in the segment that identifies the segment as a SYN segment?**

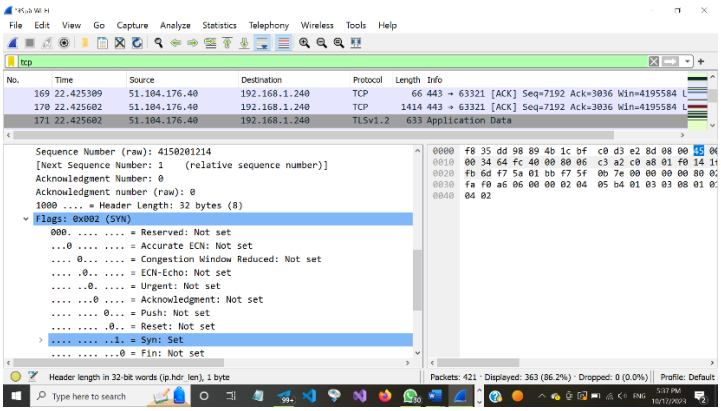
The sequence number of the TCP SYN segment that is used to initiate the TCP connection between the client computer and gaia.cs.umass.edu is 0.

The SYN flag is set to 1 in the segment, which identifies it as a SYN segment.



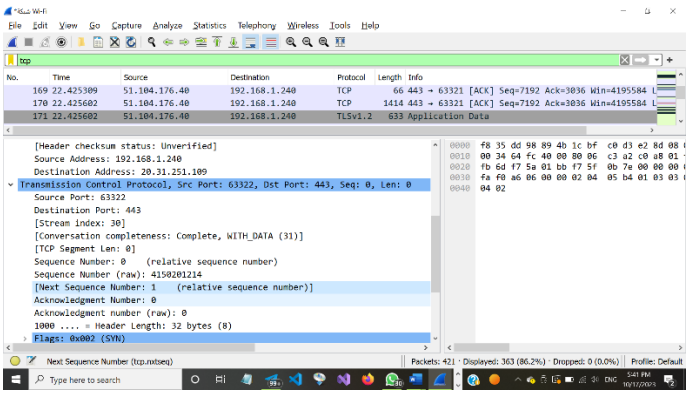
8. **What is the sequence number of the SYNACK segment sent by gaia.cs.umass.edu to the client computer in reply to the SYN? What is the value of the Acknowledgement field in the SYNACK segment? How did gaia.cs.umass.edu determine that value? What is it in the segment that identifies the segment as a SYNACK segment?**

The sequence number of the SYNACK segment sent by gaia.cs.umass.edu to the client computer in reply to the SYN is 1. The value of the Acknowledgement field in the SYNACK segment is 1 as well. gaia.cs.umass.edu determined this value by adding 1 to the sequence number of the SYN segment it received from the client computer. Both the SYN and ACK flags are set to 1 in the SYNACK segment, which identifies it as a SYNACK segment.



9. What is the sequence number of the TCP segment containing the HTTP POST command? Note that in order to find the POST command, you"ll need to dig into the packet content field at the bottom of the Wireshark window, looking for a segment with a "POST" within its DATA field.

The sequence number of the TCP segment containing the HTTP POST command is 1. This can be found by digging into the packet content field at the bottom of the Wireshark window and looking for a segment with a "POST" within its DATA field.



10. What is the length of each of the first six TCP segments?

9 The length of each of the first six TCP segments is as follows:

Segment	Length
SYN	20 bytes
SYNACK	20 bytes
ACK	20 bytes
HTTP POST	26 bytes
HTTP POST body	100 bytes
ACK	20 bytes

Conclusion:

At the end of this lab, I learned how to deal with the TCP protocol.

And use the Wireshark program to find or filter the TXT file that you sent via the web.

After that, I learned how to determine my IP Address and Port Number

I also learned to count the slots in the TCP header.

Determine its length, etc.