Computer Networking Lab TCP

Please capture some related screenshots to support your answer.

In this lab, we use Wireshark to capture TCP packets to study many features of TCP protocol. Many applications such as HTTP, SMTP, TELNET, and FTP use the service of TCP. The situation of TCP is different from UDP. TCP is a connection-oriented protocol; it uses packets for connection establishment, connection termination, and data transfer. This means that we can capture packets that use TCP as source or sink protocol as well as packets that use an application-layer protocol as the source or sink, but use TCP as the intermediate protocol.

Do the following steps:

- Start up your web browser, and make sure your browser's cache is cleared.
- Open Wireshark and start capturing.
- Go back to your web browser and enter the URL: http://gaia.cs.umass.edu/wireshark-labs/INTRO-wireshark-file1.html
- Stop Wireshark packet capture.
- Type http in the filter field and press Apply. You will find the ip address of the webserver (it should be listed like 128.119.***.***) and note the packet number in the first column of the packet list panel of the Wireshark window.
- Then type tcp in the filter field and press Apply. Look for those packets with packet numbers close to but smaller than the packet number you noted in the previous step.

Answer the following questions:

1. What is the IP address and TCP port number used by the client computer?
2. What is the sequence number of the TCP SYN segment that is used to initiate the TCP connection between the client computer and server? What is the value in the segment that identifies the segment as a SYN segment?
3. What is the value of the ACKnowledgement field in the SYNACK segment? How did server determine that value?
4. What is the amount of available buffer space advertised at the web server for the connection?