

Tutorial 3

Question 1

A UDP segment (header + data) is represented in hexadecimal 6660 5555 8F0C. Calculate the checksum and represent it in hexadecimal.

Question 2

Suppose Host A sends one segment containing 16 bytes data with sequence number 330 over a TCP connection to Host B. In this segment, the acknowledgment number must be 346. True or false?

Question 3

Suppose Host A sends three segments to Host B over a TCP connection. Each segment has the size of 40 bytes. The segment has no options field. The first segment has sequence number 330.

- (a) How much data is in each segment?
- (b) What is the sequence number of the third segment?
- (c) If the first segment is lost but the second segment arrives at Host B, what is the acknowledgment number in the segment that Host B sends to Host A?

Question 4

Host A sends a file of 33 Mbytes to Host B. Assume the maximum segment size (MSS) is 128 bytes. The transport layer, network layer, and data-link layer add headers of a total size of 66 bytes to each segment before the resulting packet is sent out over a 1 Gbps link. Assume no congestion, calculate the time required to transmit the file.