Computer Networks-QUIZ 2_A
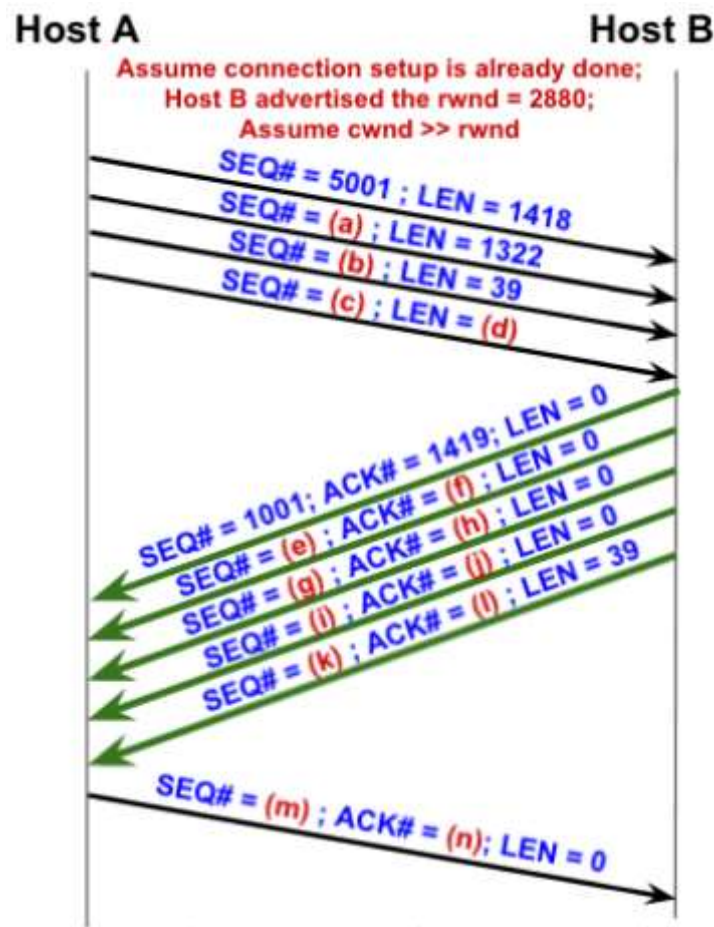
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Questions

1. The figure shows TCP communication between Host A and Host B. 7 points
Assume connection setup is done and the receiver advertised its
window; RWND=2880. Also, current congestion window value (CWND) is
much larger than RWND. Given these assumptions, fill in the blanks from
'a' to 'n' with appropriate values for sequence numbers (SEQ#),
acknowledgement numbers (ACK#), and data length (LEN). Consider the
maximum possible value while answering question (d).

Host A **Host B**

Assume connection setup is already done;
Host B advertised the rwnd = 2880;
Assume cwnd >> rwnd

SEQ# = 5001 ; LEN = 1418
SEQ# = (a) ; LEN = 1322
SEQ# = (b) ; LEN = 39
SEQ# = (c) ; LEN = (d)

SEQ# = 1001; ACK# = 1419; LEN = 0
SEQ# = (e) ; ACK# = (f) ; LEN = 0
SEQ# = (g) ; ACK# = (h) ; LEN = 0
SEQ# = (i) ; ACK# = (j) ; LEN = 0
SEQ# = (k) ; ACK# = (l) ; LEN = 39

SEQ# = (m) ; ACK# = (n); LEN = 0

a-6419;b-7741;c-7780;;d-101;e-1002;f-2741;g-'

2.   5 points

Consider the following TCP congestion control scenario. The TCP connection starts in slow start phase (CWND=1MSS) and the threshold (ssthresh) is 8. Assume that a timeout occurs during the 6th transmission round and three duplicate ACKs for the 1st packet of the 9th transmission round are received during the 9th transmission round. Answer the following questions for the TCP variant,TCP Reno.
(a) The congestion window value when timeout occurs (during 6th transmission) is _____MSS
(b) The "ssthresh" value just after sender detects timeout is _____MSS
(c) The congestion window value after sender detects three duplicate ACKs is _____MSS
(d) The "ssthresh" value just after sender detects three duplicate ACKs is _____MSS
(e) The congestion window value after sender recovers from packet loss (i.e., sender receives new ACK) is _____MSS

a-64mss

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3. Suppose, you are using TCP as the transport layer protocol in a   1 point
network where bandwidth-delay product (BDP) is known. How will the
TCP congestion window (CWND) size evolve over time?

○ AIMD (Additive Increase Multiplicative Decrease)

◉ Constant

○ Exponential

○ CUBIC

Clear selection

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4. Suppose, a TCP host 'A' has sent a FIN packet to the TCP host 'B', which 1 point
of the following statements are TRUE?

☑ Host 'B' can still send data to the Host 'A'

☐ Host 'A' can no longer send any more data (fresh or retransmitted)

☐ Host 'A' can no longer send any more data (fresh or retransmitted)

☑ Host 'A' can not send new data but can retransmit old data

☐ The TCP connection is closed immediately when Host 'A' receives a FIN packet from Host 'B'

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