Solutions to Homework Questions on Transport Layer Part 2

Q1. Figure 1 traces congestion window of a particular TCP implementation. Would it be a TCP Tahoe or Reno and why?

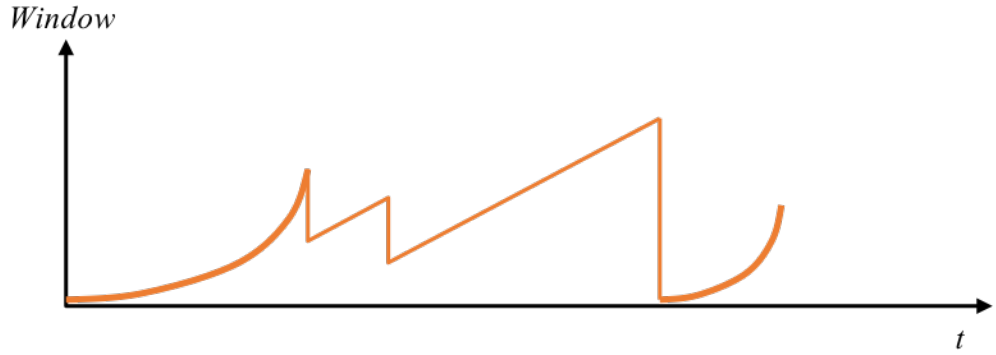

Figure 1 TCP congestion window traces

A1. TCP Reno, because congestion window is sometimes is decreased to half and sometimes it goes to 1 (TCP Tahow would always go back to 1).

Q2. In Figure 2, what would be the value of congestion window at point B

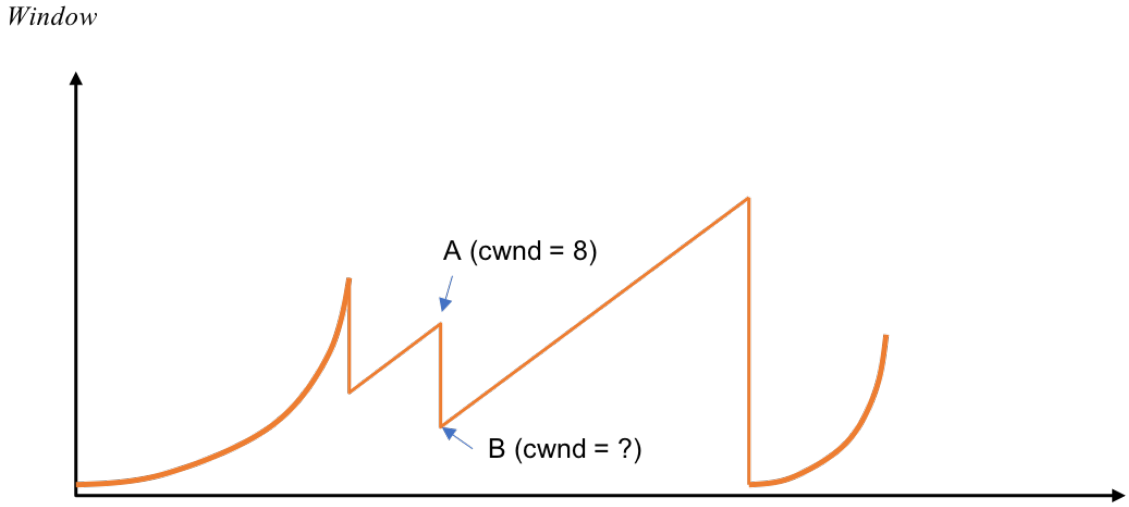

Figure 2 TCP congestion window trace

A2. 8/2 = 4 (congestion window is halved).

Q3. Figure 3 shows congestion window traces for both TCP Tahoe and TCP Reno where up to transmission round of 8, both follow the same blue curve, but after than TCP Tahoe follows the blue curve and TCP Reno follow the black curve.

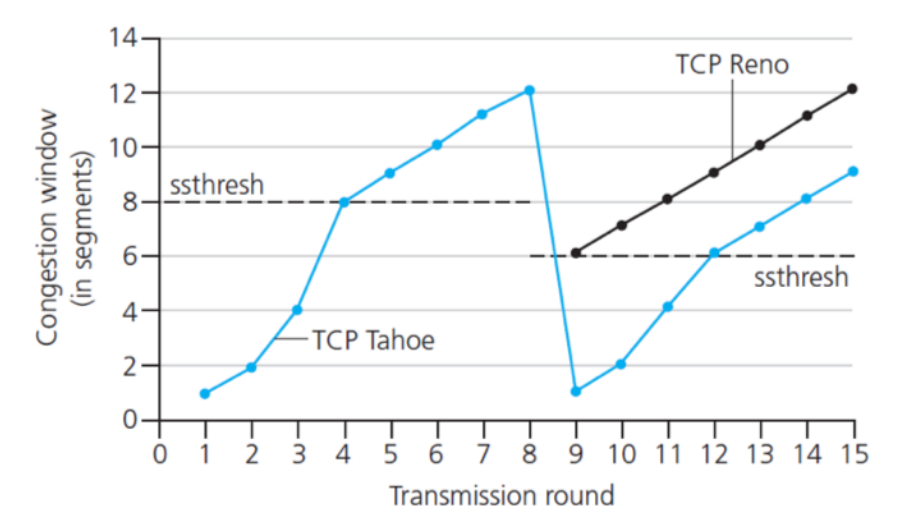

Figure 3 Congestion window traces for both TCP Tahoe and TCP Reno

Answer the following questions:

(a) At t=8 (t is along x-axis), was the loss event a Triple Duplicate ACK (TD) or Time Out (TO) and why?

(b) If there was a TD at t=6, what would be the value of congestion window at t=7 for TCP Reno?

(c) If there was a TO at t=6, what would be the value of congestion window at t=7 for TCP Tahoe?

A.

(a) TD, because the window is only halved.
(b) 10/2 = 5
(c) 1

End of homework