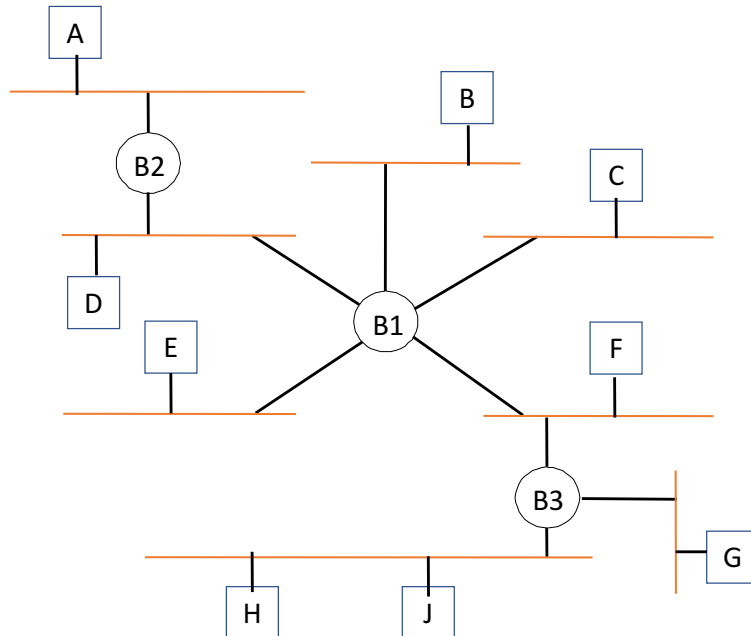


Bản gốc của câu 1 điiii!

3. (15 pts) Learning bridges. Consider the extended LAN shown below. Assume all bridges were just turned on and no frames have been sent. Three frames are subsequently sent in the order described below.



- a) (5pts). Suppose host *J* sends a frame to host *C*. List the hosts that receive the frame.

A, B, C, D, E, F, G, and H.

- b) (5pts). Afterwards, host *E* sends a frame to *J*. What hosts receive that frame?

F, H, and J.

- c) (5pts). Finally, host *D* sends a frame to *E*. Which hosts receive this frame?

A and E.

Câu 2 đề này nó lấy ở đây!!

4 TCP/Congestion Control

Host A sends a file consisting of 9 MSS-sized segments to a host B using TCP. Assume that the 4th segment in the transmission is lost. Assume the retransmission timeout is T , the one-way latency is d , and that $T > 4*d$. Ignore the transmission time of the segments and of the acknowledgements. Also, assume the TCP three-way handshake has completed, but no data has been transmitted.

a) Assume no fast retransmission or fast recovery. Draw the time diagram showing each segment and acknowledgement until the entire file is transferred. Indicate on the diagram all changes in the $cwnd$ and $ssthresh$. How long does it take to transfer the file?

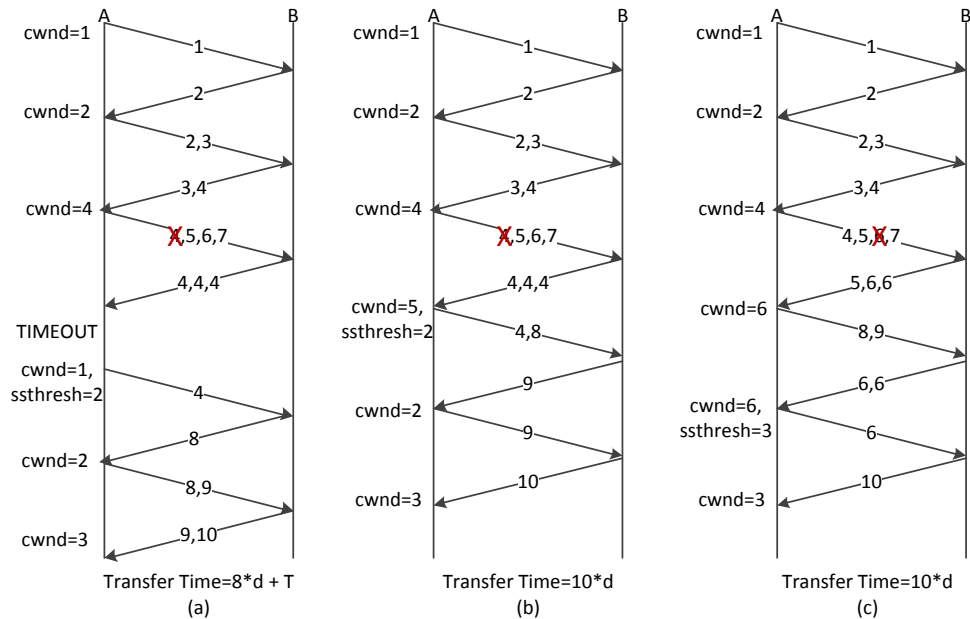
b) Answer part (a) assuming TCP Reno, i.e., the TCP version that implements both fast retransmission and fast recovery.

c) Answer part (b) assuming that only the 6th segment is dropped.

Notes

- For Fast Recovery, assume that each duplicate acknowledgment increases $cwnd$ by 1.
- For Fast Recovery, assume that, upon receiving a non-duplicate acknowledgment, $cwnd$ drops back to $ssthresh$.
- If the value of $cwnd$ is fractional, you should round it to the closest larger integer.
- The transfer time is the time interval measure at source A from the time the first segment is sent until the acknowledgement of the last segment is received

Answer



Notes: People lost the most number of points on this problem. People indicated on their timing diagrams that segments 5,6 and 7 are resent; I automatically deducted 2.5 pts for the first subproblem, and 2 pts for the second subproblem if you did this. You should know by now (after doing the project and seeing this material in lecture/discussion) that the receiver has a buffer to place out of order segments. Also, people forgot to read the lecture notes about the ACKing conventions; I explicitly posted on moodle that you should review those conventions before doing this problem. Also, note that when you inflate your window in b), the sender has the ability to send out one additional segment, namely, 8. I included an additional subproblem c) if you would like more practice on this type of problem.