**TCP P flag**

The P flag is usually set when data accompanies the TCP header – it is a request to the receiving TCP to send the data up to the application as soon as possible. This is redundant in most TCP implementations because data is automatically sent to the application as soon as they are received.

**TCP timers**

TCP depends on a number of timers and buffers to ensure ordered and reliable data delivery. When a segment is transmitted, TCP keeps a copy in a retransmission buffer, and a timer is started. If acknowledgment to this segment is not received before the timer expires, the segment is re-transmitted. There are potentially many reasons for not getting the ACK— it may have been delayed, lost, or the packet was never delivered.
How does TCP decide if a segment was lost? As shown in the following figure, the receipt of multiple duplicate acks (same ACK #s) is a reasonable indication of a lost segment. Usually TCP retransmits a segment upon receipt of three duplicate ACKs, even if the retransmission timer has not expired.