

Homework # 4-1

5.22: Time wait: after receiving the closing ACK from the remote TCP the local TCP waits to sure that the remote TCP has accepted the final ACK. Timewait is a problem in initiating the server into a close state as compared to the client. If many socket connections are in the TIME_WAIT state then the capability of making new connections may be affected due to which all other clients will suffer. But, as a TCP provide the reliable services so it is possible to get the file. However if the client asks for some file then after completing the request, the server can start the active close to indicate the end of data. To initiate the active close the server sends FIN message to the client.

5.25:-

a) When a packet is taken, we set the value of EstimatedRTT to its pre-timeout value. This means that we have to initialize its value what it was before TimeOut occurred for the first time. Here the pre-timeout value of Estimated RTT was "x" seconds. So, it will be reset to "x" seconds. The value of TimeOut is double the value of EstimatedRTT. Hence, the value of Timeout will be $2x$ seconds again. We can conclude the value of Timeout wont change

b) When a packet is received we continue with Timeout value. It means that the Timeout will be set as the last exponentially backed off value applied for the timeout interval. In this case, after this packet is received, Timeout will be set to $4x$ seconds. This time the packet will be lost again and the retransmission of that packet will be done. But the value of Timeout will be doubled to $8x$ seconds. Before Timeout occurs for the 2nd time the packet will be received. However the value of Timeout will keep increasing with every single transmission. The value of Timeout will get doubled each time the packet is received.