GBN PROTOCOL

CS20B051

5 April 2023

The following results can be observed after running the GBN protocol for the given two packet drop rates and packet lengths.
Random drop probability $= 10^{-8}$

Packet Length	Retransmission ratio	Average RTT
128	1.15	0.017
1024	1.17	0.014

Random drop probability $= 10^{-4}$

Packet Length	Retransmission ratio	Average RTT
128	1.22	0.014
1024	1.28	0.014

We can observe that the average RTT is around 14 ms for most of the cases.

The packet drops here are with the random probability (10^{-4} and 10^{-8}) in this case.
However, packets can also be retransmitted in case of premature timeout, i.e. even though it is received correctly, but because the RTT exceeds the timeout value, drops can occur.
In a GBN protocol, when a packet is dropped, every unacked packet in the window is retransmitted. Hence, when the packet drop probability increases, the number of retransmissions should also increase, hence the retransmission ratio should increase, as can be seen in the table.

Note : The values can be cross-checked with the attached screenshots.