

Lab 4: Go-back-N Protocol

Observations

When the drop probability is very low, packets are dropped very rarely, and the retransmission ratio is almost always 1, as no packets need to be transferred again.

When a packet is dropped on the receiver's side, ack won't be sent to the sender and hence, the sender will know about failure after timeout for that packet's sequence number occurs.

Here, sequence field is of 1 byte, hence any window of size ≤ 255 would work

The greater the window length, the more time will it take to retransmit all the packets in case of dropped packets as all packets would have to be retransmitted

When the random packet drop probability increases, the probability of packets being lost or damaged also increases. This situation leads to a higher number of retransmissions and inturn increases the retransmission ratio.

Furthermore, when the random packet drop probability is very high, the GBN protocol may become unreliable as the max allowed attempts will exceed and sender program will stop.

Following experiments are run with window size 3 and 400 packets and packet_gen_rate of 10

For, RANDOM_DROP_PROB = $10e-4$,

Packet Length	Total Time	Throughput	Retransmission ratio
128	39005ms	1.312KBps	1
1024	39018ms	10.497KBps	1

For, RANDOM_DROP_PROB = $10e-8$,

Packet Length	Total Time	Throughput	Retransmission ratio
128	39005ms	1.312KBps	1
1024	39018ms	10.497KBps	1

Here, total time is time from first packet sent to last packet's ack