Networks Lab 4 - Stop and Wait Protocol

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1 Testing

The receiver was run on a computer in the DCF and sender on my laptop.

Run 1: 50 packets were sent for each test case.

For Packet generation rate 10:

Packet Length	Error Probablity	Throughput (Kbps)	Transmission Efficiency Ratio
128	0.01	11.01	1.02
1024	0.01	84.64	1.00
128	0.00001	10.48	1.48
1024	0.00001	83.21	1.00

For Packet generation rate 200:

Packet Length	Error Probablity	Throughput (Kbps)	Transmission Efficiency Ratio
128	0.01	198.17	1.00
1024	0.01	1620.33	1.00
128	0.00001	31.41	1.3
1024	0.00001	1589.49	1.0

Run 2: 500 packets were sent for each test case.

For Packet generation rate 10:

Packet Length	Error Probablity	Throughput (Kbps)	Transmission Efficiency Ratio
128	0.01	10.03	1.02
1024	0.01	87.09	1.01
128	0.00001	9.94	1.00
1024	0.00001	85.31	1.08

For Packet generation rate 200:

Packet Length	Error Probablity	Throughput (Kbps)	Transmission Efficiency Ratio
128	0.01	192.75	1.002
1024	0.01	1602.31	1.014
128	0.00001	201.33	1.00
1024	0.00001	1604.89	1.00

2 Observation

Sometimes, the first packet was sent multiple times (around 10) even though it had been acknowledged the first time. The timeout was occuring before the acknowledgement was received. Most of the packets that were resent were due to this, and not due to being considered as corrupted by the sender, as the error rates were pretty low.

Throughput increased as packet lenghts increased. Probability of error was not dependant on length of packet, so longer packets were not more likely to get corrupted.