**CS 655 Computer Network**

**Lab 8 TCP Performance**

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# Throughput

**Theoretically**, the throughput of a TCP connection can be approximated by:

where the Maximum Segment Size (MSS) = 1460 Bytes (1460x8=11680 bits) on a link with MTU of 1500 Bytes, and the RTT value can be calculated using the Ping application.

**Experimentally**, use iperf to measure the bandwidth as the throughput.

# Result

**Unit: Mbps**

**The upper one is the theoretical throughput and the lower one is the measured throughput.**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Loss = 0.01% | Loss = 0.1% | Loss = 1% | Loss = 3% | Loss = 7% | Loss = 10% |
| Delay: 5ms | 128  275 (exp) | 40  144 (exp) | 12  18 (exp) | 7  7.94 (exp) | 4.8  3.41 (exp) | 4  1.89 (exp) |
| Delay: 10ms |  |  |  |  |  |  |

# Comment

How close your measured throughput values are to their analytical counterparts?

Try at least two higher packet loss values (e.g., 2% and 5%) and comment on the validity of the above analytical model.