**Alternating Bit Protocol**

**Packet 20, Loss : .2 , Corruption : .2, Time :1000**

----- Stop and Wait Network Simulator Version 1.1 --------

Enter the number of messages to simulate: Enter packet loss probability [enter 0.0 for no loss]:Enter packet corruption probability [0.0 for no corruption]:Enter average time between messages from sender's layer5 [ > 0.0]:Enter TRACE:

EVENT time: 1.403546, type: 1, fromlayer5 entity: 0

A sending msg with seq 0 [window size : 1](0,)

EVENT time: 6.895993, type: 2, fromlayer3 entity: 1

Received packet of seq 0

EVENT time: 11.895992, type: 0, timerinterrupt entity: 1

Sending cumulative ack 0

EVENT time: 14.395123, type: 2, fromlayer3 entity: 0

[Ack 0] Acknum is within the window [window size 1](0,)

[Ack 0] Stopping timer after ack

EVENT time: 24.115726, type: 1, fromlayer5 entity: 0

A sending msg with seq 1 [window size : 1](1,)

EVENT time: 25.517014, type: 2, fromlayer3 entity: 1

Received packet of seq 1

EVENT time: 30.517014, type: 0, timerinterrupt entity: 1

Sending cumulative ack 1

EVENT time: 34.830471, type: 1, fromlayer5 entity: 0

A sending msg with seq 2 [window size : 2](1,2,)

EVENT time: 35.953705, type: 2, fromlayer3 entity: 0

[Ack 1] Acknum is within the window [window size 2](1,2,)

[Ack 1] Stopping timer after ack

[Ack 1] Starting timer after ack for 2 [window size 1](2,)

EVENT time: 38.326641, type: 2, fromlayer3 entity: 1

Received packet of seq 2

EVENT time: 43.326641, type: 0, timerinterrupt entity: 1

Sending cumulative ack 2

EVENT time: 46.211678, type: 2, fromlayer3 entity: 0

[Ack 2] Acknum is within the window [window size 1](2,)

[Ack 2] Stopping timer after ack

EVENT time: 49.992065, type: 1, fromlayer5 entity: 0

A sending msg with seq 3 [window size : 1](3,)

EVENT time: 54.568501, type: 2, fromlayer3 entity: 1

Received packet of seq 3

EVENT time: 59.568501, type: 0, timerinterrupt entity: 1

Sending cumulative ack 3

EVENT time: 64.992065, type: 0, timerinterrupt entity: 0

[Seq 3] Time interrupted, retransmitting current window. [window size 1](3,)

EVENT time: 67.597771, type: 2, fromlayer3 entity: 0

[Ack 3] Acknum is within the window [window size 1](3,)

[Ack 3] Stopping timer after ack

EVENT time: 70.362556, type: 2, fromlayer3 entity: 1

Unexpected sequence number. [expecting 4 got 3]

EVENT time: 71.419960, type: 2, fromlayer3 entity: 0

Ignoring ack 3 as window size 0

EVENT time: 75.868408, type: 1, fromlayer5 entity: 0

TOLAYER3: packet being corrupted

A sending msg with seq 4 [window size : 1](4,)

EVENT time: 80.188026, type: 2, fromlayer3 entity: 1

Checksum error.

TOLAYER3: packet being lost

EVENT time: 90.868408, type: 0, timerinterrupt entity: 0

[Seq 4] Time interrupted, retransmitting current window. [window size 1](4,)

EVENT time: 92.360306, type: 1, fromlayer5 entity: 0

TOLAYER3: packet being corrupted

A sending msg with seq 5 [window size : 2](4,5,)

EVENT time: 95.447311, type: 2, fromlayer3 entity: 1

Received packet of seq 4

EVENT time: 99.621574, type: 1, fromlayer5 entity: 0

TOLAYER3: packet being lost

A sending msg with seq 6 [window size : 3](4,5,6,)

EVENT time: 100.447311, type: 0, timerinterrupt entity: 1

Sending cumulative ack 4

EVENT time: 104.426102, type: 2, fromlayer3 entity: 1

Checksum error.

TOLAYER3: packet being lost

EVENT time: 105.724693, type: 2, fromlayer3 entity: 0

[Ack 4] Acknum is within the window [window size 3](4,5,6,)

[Ack 4] Stopping timer after ack

[Ack 4] Starting timer after ack for 5 [window size 2](5,6,)

EVENT time: 107.000000, type: 0, timerinterrupt entity: 0

[Seq 5] Time interrupted, retransmitting current window. [window size 2](5,6,)

EVENT time: 112.007111, type: 2, fromlayer3 entity: 1

Received packet of seq 5

EVENT time: 117.007111, type: 0, timerinterrupt entity: 1

Sending cumulative ack 5

EVENT time: 117.592941, type: 2, fromlayer3 entity: 1

Received packet of seq 6

EVENT time: 119.342812, type: 2, fromlayer3 entity: 0

[Ack 5] Acknum is within the window [window size 2](5,6,)

[Ack 5] Stopping timer after ack

[Ack 5] Starting timer after ack for 6 [window size 1](6,)

EVENT time: 122.000000, type: 0, timerinterrupt entity: 0

[Seq 6] Time interrupted, retransmitting current window. [window size 1](6,)

EVENT time: 122.592941, type: 0, timerinterrupt entity: 1

Sending cumulative ack 6

EVENT time: 123.469955, type: 1, fromlayer5 entity: 0

A sending msg with seq 7 [window size : 2](6,7,)

EVENT time: 123.804771, type: 2, fromlayer3 entity: 1

Unexpected sequence number. [expecting 7 got 6]

TOLAYER3: packet being lost

EVENT time: 126.670853, type: 2, fromlayer3 entity: 1

Received packet of seq 7

EVENT time: 128.288635, type: 2, fromlayer3 entity: 0

[Ack 6] Acknum is within the window [window size 2](6,7,)

[Ack 6] Stopping timer after ack

[Ack 6] Starting timer after ack for 7 [window size 1](7,)

EVENT time: 131.670853, type: 0, timerinterrupt entity: 1

Sending cumulative ack 7

TOLAYER3: packet being corrupted

EVENT time: 138.000000, type: 0, timerinterrupt entity: 0

[Seq 7] Time interrupted, retransmitting current window. [window size 1](7,)

TOLAYER3: packet being lost

EVENT time: 141.194580, type: 2, fromlayer3 entity: 0

[Ack 7] Packet corrupted, dropping

EVENT time: 148.949860, type: 1, fromlayer5 entity: 0

A sending msg with seq 0 [window size : 2](7,0,)

EVENT time: 150.110535, type: 2, fromlayer3 entity: 1

Received packet of seq 0

EVENT time: 152.331009, type: 1, fromlayer5 entity: 0

TOLAYER3: packet being corrupted

A sending msg with seq 1 [window size : 3](7,0,1,)

EVENT time: 153.000000, type: 0, timerinterrupt entity: 0

[Seq 7] Time interrupted, retransmitting current window. [window size 3](7,0,1,)

TOLAYER3: packet being lost

EVENT time: 155.110535, type: 0, timerinterrupt entity: 1

Sending cumulative ack 0

TOLAYER3: packet being corrupted

EVENT time: 155.634644, type: 2, fromlayer3 entity: 1

Checksum error.

TOLAYER3: packet being lost

EVENT time: 157.178207, type: 2, fromlayer3 entity: 1

Unexpected sequence number. [expecting 1 got 7]

EVENT time: 162.505325, type: 2, fromlayer3 entity: 0

[Ack 0] Packet corrupted, dropping

EVENT time: 163.096115, type: 2, fromlayer3 entity: 1

Received packet of seq 1

EVENT time: 167.188049, type: 2, fromlayer3 entity: 0

[Ack 0] Acknum is within the window [window size 3](7,0,1,)

[Ack 0] Stopping timer after ack

[Ack 0] Starting timer after ack for 1 [window size 1](1,)

EVENT time: 168.000000, type: 0, timerinterrupt entity: 0

[Seq 1] Time interrupted, retransmitting current window. [window size 1](1,)

EVENT time: 168.096115, type: 0, timerinterrupt entity: 1

Sending cumulative ack 1

EVENT time: 170.968536, type: 2, fromlayer3 entity: 1

Unexpected sequence number. [expecting 2 got 1]

TOLAYER3: packet being corrupted

EVENT time: 174.250778, type: 2, fromlayer3 entity: 0

[Ack 1] Acknum is within the window [window size 1](1,)

[Ack 1] Stopping timer after ack

EVENT time: 175.473495, type: 1, fromlayer5 entity: 0

A sending msg with seq 2 [window size : 1](2,)

EVENT time: 182.402176, type: 2, fromlayer3 entity: 1

Received packet of seq 2

EVENT time: 182.912323, type: 2, fromlayer3 entity: 0

[Ack 1] Packet corrupted, dropping

EVENT time: 187.402176, type: 0, timerinterrupt entity: 1

Sending cumulative ack 2

TOLAYER3: packet being lost

EVENT time: 190.473495, type: 0, timerinterrupt entity: 0

[Seq 2] Time interrupted, retransmitting current window. [window size 1](2,)

TOLAYER3: packet being lost

EVENT time: 191.270493, type: 1, fromlayer5 entity: 0

A sending msg with seq 3 [window size : 2](2,3,)

EVENT time: 197.506180, type: 2, fromlayer3 entity: 1

Received packet of seq 3

EVENT time: 202.506180, type: 0, timerinterrupt entity: 1

Sending cumulative ack 3

TOLAYER3: packet being lost

EVENT time: 205.473495, type: 0, timerinterrupt entity: 0

[Seq 2] Time interrupted, retransmitting current window. [window size 2](2,3,)

EVENT time: 209.428360, type: 2, fromlayer3 entity: 1

Unexpected sequence number. [expecting 4 got 2]

EVENT time: 210.771423, type: 2, fromlayer3 entity: 0

[Ack 3] Acknum is within the window [window size 2](2,3,)

[Ack 3] Stopping timer after ack

EVENT time: 211.375687, type: 2, fromlayer3 entity: 1

Unexpected sequence number. [expecting 4 got 3]

EVENT time: 212.425400, type: 2, fromlayer3 entity: 0

Ignoring ack 3 as window size 0

EVENT time: 213.493759, type: 1, fromlayer5 entity: 0

A sending msg with seq 4 [window size : 1](4,)

EVENT time: 214.597000, type: 1, fromlayer5 entity: 0

TOLAYER3: packet being lost

A sending msg with seq 5 [window size : 2](4,5,)

EVENT time: 217.578812, type: 2, fromlayer3 entity: 1

Received packet of seq 4

EVENT time: 222.578812, type: 0, timerinterrupt entity: 1

Sending cumulative ack 4

EVENT time: 227.255768, type: 2, fromlayer3 entity: 0

[Ack 4] Acknum is within the window [window size 2](4,5,)

[Ack 4] Stopping timer after ack

[Ack 4] Starting timer after ack for 5 [window size 1](5,)

EVENT time: 229.000000, type: 0, timerinterrupt entity: 0

[Seq 5] Time interrupted, retransmitting current window. [window size 1](5,)

EVENT time: 232.738419, type: 2, fromlayer3 entity: 1

Received packet of seq 5

EVENT time: 237.738419, type: 0, timerinterrupt entity: 1

Sending cumulative ack 5

EVENT time: 243.008514, type: 1, fromlayer5 entity: 0

A sending msg with seq 6 [window size : 2](5,6,)

EVENT time: 244.000000, type: 0, timerinterrupt entity: 0

[Seq 5] Time interrupted, retransmitting current window. [window size 2](5,6,)

TOLAYER3: packet being corrupted

EVENT time: 244.616074, type: 2, fromlayer3 entity: 1

Received packet of seq 6

EVENT time: 247.537643, type: 2, fromlayer3 entity: 0

[Ack 5] Acknum is within the window [window size 2](5,6,)

[Ack 5] Stopping timer after ack

[Ack 5] Starting timer after ack for 6 [window size 1](6,)

EVENT time: 249.232056, type: 2, fromlayer3 entity: 1

Checksum error.

EVENT time: 249.616074, type: 0, timerinterrupt entity: 1

Sending cumulative ack 6

EVENT time: 250.596268, type: 2, fromlayer3 entity: 1

Unexpected sequence number. [expecting 7 got 6]

TOLAYER3: packet being lost

EVENT time: 253.768661, type: 2, fromlayer3 entity: 0

[Ack 6] Acknum is within the window [window size 1](6,)

[Ack 6] Stopping timer after ack

EVENT time: 262.925995, type: 2, fromlayer3 entity: 0

Ignoring ack 6 as window size 0

EVENT time: 272.793365, type: 1, fromlayer5 entity: 0

A sending msg with seq 7 [window size : 1](7,)

EVENT time: 277.752930, type: 1, fromlayer5 entity: 0

A sending msg with seq 0 [window size : 2](7,0,)

EVENT time: 282.381927, type: 2, fromlayer3 entity: 1

Received packet of seq 7

EVENT time: 285.092834, type: 2, fromlayer3 entity: 1

Received packet of seq 0

EVENT time: 287.381927, type: 0, timerinterrupt entity: 1

Sending cumulative ack 0

EVENT time: 287.793365, type: 0, timerinterrupt entity: 0

[Seq 7] Time interrupted, retransmitting current window. [window size 2](7,0,)

TOLAYER3: packet being lost

EVENT time: 290.675934, type: 2, fromlayer3 entity: 0

[Ack 0] Acknum is within the window [window size 2](7,0,)

[Ack 0] Stopping timer after ack

EVENT time: 291.615570, type: 2, fromlayer3 entity: 1

Unexpected sequence number. [expecting 1 got 0]

EVENT time: 298.437408, type: 2, fromlayer3 entity: 0

Ignoring ack 0 as window size 0

EVENT time: 301.046478, type: 1, fromlayer5 entity: 0

TOLAYER3: packet being lost

A sending msg with seq 1 [window size : 1](1,)

EVENT time: 316.046478, type: 0, timerinterrupt entity: 0

[Seq 1] Time interrupted, retransmitting current window. [window size 1](1,)

TOLAYER3: packet being lost

EVENT time: 316.122925, type: 1, fromlayer5 entity: 0

TOLAYER3: packet being corrupted

A sending msg with seq 2 [window size : 2](1,2,)

EVENT time: 321.261017, type: 1, fromlayer5 entity: 0

A sending msg with seq 3 [window size : 3](1,2,3,)

EVENT time: 324.451294, type: 2, fromlayer3 entity: 1

Checksum error.

EVENT time: 330.801514, type: 2, fromlayer3 entity: 1

Unexpected sequence number. [expecting 1 got 3]

TOLAYER3: packet being corrupted

EVENT time: 331.046478, type: 0, timerinterrupt entity: 0

[Seq 1] Time interrupted, retransmitting current window. [window size 3](1,2,3,)

TOLAYER3: packet being lost

TOLAYER3: packet being lost

EVENT time: 333.839874, type: 2, fromlayer3 entity: 0

[Ack 0] Duplicate ack found, retransmitting current window. [window size 3](1,2,3,)

TOLAYER3: packet being lost

TOLAYER3: packet being lost

EVENT time: 337.869690, type: 2, fromlayer3 entity: 1

Unexpected sequence number. [expecting 1 got 2]

EVENT time: 342.759613, type: 2, fromlayer3 entity: 0

[Ack 0] Packet corrupted, dropping

EVENT time: 343.728821, type: 2, fromlayer3 entity: 1

Unexpected sequence number. [expecting 1 got 2]

EVENT time: 347.363251, type: 2, fromlayer3 entity: 0

[Ack 0] Duplicate ack found, retransmitting current window. [window size 3](1,2,3,)

TOLAYER3: packet being lost

TOLAYER3: packet being lost

EVENT time: 349.736023, type: 2, fromlayer3 entity: 0

[Ack 0] Duplicate ack found, retransmitting current window. [window size 3](1,2,3,)

TOLAYER3: packet being corrupted

TOLAYER3: packet being corrupted

TOLAYER3: packet being corrupted

EVENT time: 350.666870, type: 2, fromlayer3 entity: 1

Unexpected sequence number. [expecting 1 got 3]

EVENT time: 353.145111, type: 2, fromlayer3 entity: 0

[Ack 0] Duplicate ack found, retransmitting current window. [window size 3](1,2,3,)

EVENT time: 358.893341, type: 2, fromlayer3 entity: 1

Checksum error.

EVENT time: 362.327148, type: 2, fromlayer3 entity: 1

Checksum error.

EVENT time: 367.247528, type: 2, fromlayer3 entity: 0

[Ack 0] Duplicate ack found, retransmitting current window. [window size 3](1,2,3,)

TOLAYER3: packet being corrupted

EVENT time: 369.496979, type: 2, fromlayer3 entity: 1

Checksum error.

TOLAYER3: packet being corrupted

EVENT time: 371.389435, type: 2, fromlayer3 entity: 0

[Ack 0] Duplicate ack found, retransmitting current window. [window size 3](1,2,3,)

EVENT time: 372.088135, type: 2, fromlayer3 entity: 1

Received packet of seq 1

EVENT time: 374.251343, type: 2, fromlayer3 entity: 1

Received packet of seq 2

EVENT time: 374.272827, type: 2, fromlayer3 entity: 0

[Ack 0] Packet corrupted, dropping

EVENT time: 377.088135, type: 0, timerinterrupt entity: 1

Sending cumulative ack 2

TOLAYER3: packet being lost

EVENT time: 381.806824, type: 2, fromlayer3 entity: 1

Received packet of seq 3

EVENT time: 386.051727, type: 2, fromlayer3 entity: 1

Unexpected sequence number. [expecting 4 got 1]

TOLAYER3: packet being lost

EVENT time: 386.389435, type: 0, timerinterrupt entity: 0

[Seq 1] Time interrupted, retransmitting current window. [window size 3](1,2,3,)

TOLAYER3: packet being corrupted

TOLAYER3: packet being lost

TOLAYER3: packet being corrupted

EVENT time: 386.806824, type: 0, timerinterrupt entity: 1

Sending cumulative ack 3

TOLAYER3: packet being corrupted

EVENT time: 394.375977, type: 2, fromlayer3 entity: 1

Unexpected sequence number. [expecting 4 got 2]

EVENT time: 395.118164, type: 2, fromlayer3 entity: 0

[Ack 999999] Packet corrupted, dropping

EVENT time: 397.732391, type: 2, fromlayer3 entity: 0

[Ack 3] Acknum is within the window [window size 3](1,2,3,)

[Ack 3] Stopping timer after ack

EVENT time: 400.701477, type: 2, fromlayer3 entity: 1

Checksum error.

TOLAYER3: packet being lost

EVENT time: 404.249573, type: 2, fromlayer3 entity: 1

Unexpected sequence number. [expecting 4 got 1]

EVENT time: 410.337494, type: 2, fromlayer3 entity: 0

Ignoring ack 3 as window size 0

EVENT time: 410.998901, type: 2, fromlayer3 entity: 1

Unexpected sequence number. [expecting 4 got 2]

EVENT time: 420.222961, type: 2, fromlayer3 entity: 1

Unexpected sequence number. [expecting 4 got 3]

TOLAYER3: packet being lost

EVENT time: 420.246033, type: 2, fromlayer3 entity: 0

Ignoring ack 3 as window size 0

EVENT time: 423.996826, type: 2, fromlayer3 entity: 1

Checksum error.

EVENT time: 426.251495, type: 2, fromlayer3 entity: 1

Checksum error.

EVENT time: 428.573547, type: 2, fromlayer3 entity: 0

Ignoring ack 3 as window size 0

EVENT time: 435.133362, type: 2, fromlayer3 entity: 0

Ignoring ack 3 as window size 0

Simulator terminated at time 435.133362

after sending 20 msgs from layer5