

----- * Network Simulator Version 1.1 * -----

Enter number of messages to simulate: 1000
Enter packet loss probability [enter 0.0 for no loss]:0.1
Enter packet corruption probability [0.0 for no corruption]:0.1
Enter average time between messages from sender's layer5 [> 0.0]:200
Enter window size [>0]:8
Enter retransmission timeout [> 0.0]:30
Enter trace level:3
Enter random seed: [>0]:1234

GENERATE NEXT ARRIVAL: creating new arrival
INSERTEVENT: time is 0.000000
INSERTEVENT: future time will be 43.433943

EVENT time: 43.433943, type: 1, fromlayer5 entity: 0
GENERATE NEXT ARRIVAL: creating new arrival
INSERTEVENT: time is 43.433943
INSERTEVENT: future time will be 67.360454

A_output at time 43.4339

Message from A layer 5 aaaaaaaaaaaaaaaaaa

Current sender buffer size 0

Seqno 0 expected ackno 1 checksum 194

Find an empty space in the sender window. Send to layer3.

TOLAYER3: seq: 0, ack 0, check: 194 TOLAYER3: scheduling arrival on other side

INSERTEVENT: time is 43.433943

INSERTEVENT: future time will be 45.660604

START TIMER: starting timer at 43.433943

INSERTEVENT: time is 43.433943

INSERTEVENT: future time will be 73.433943

Start timer at 43.4339 planned inter at 73.4339

CASE 1

EVENT time: 45.660604, type: 2, fromlayer3 entity: 1

Sequence no 0 sent, received, ACKed
without error

B_input at time 45.6606

Received seqno 0, expected seqno 0

Pkt delivered, seqno 0, payload aaaaaaaaaaaaaaaaaa

TOLAYER3: seq: 0, ack 1, check: 193 TOLAYER3: scheduling arrival on other side

INSERTEVENT: time is 45.660604

INSERTEVENT: future time will be 47.569475

Ack sent to layer3 by B, ackno 1

EVENT time: 47.569475, type: 2, fromlayer3 entity: 0

A_input at time 47.5695

Checksum confirmed 255

ACKno 1 first_unacked_no 0

STOP TIMER: stopping timer at 47.569475

Timer stops at 47.5695

Number of pkt acked 1

Window advanced by 1

EVENT time: 67.360454, type: 1, fromlayer5 entity: 0
GENERATE NEXT ARRIVAL: creating new arrival
INSERTEVENT: time is 67.360454
INSERTEVENT: future time will be 83.315531

CASE 2

B_input at time 39810.1

Received seqno 11, expected seqno 11

Pkt delivered, seqno 11, payload vvvvvvvvvvvvvvvvvv

TOLAYER3: seq: 0, ack 12, check: 39

TOLAYER3: packet being corrupted

TOLAYER3: scheduling arrival on other side

INSERTEVENT: time is 39810.139470

INSERTEVENT: future time will be 39812.568010

Ack sent to layer3 by B, ackno 12

Sending ACK for sequence no 11, but
ACK is corrupted

EVENT time: 39812.568010, type: 2, fromlayer3 entity: 0

A_input at time 39812.6

Pkt corrupted, packet checksum 39 actual 200

Corrupted ACK received at A

EVENT time: 39814.630573, type: 1, fromlayer5 entity: 0

GENERATE NEXT ARRIVAL: creating new arrival

INSERTEVENT: time is 39814.630573

INSERTEVENT: future time will be 40025.904111

A_output at time 39814.6

Message from A layer 5 wwwwwwwwwwwwwww

Current sender buffer size 1

Seqno 12 expected ackno 13 checksum 20

Find an empty space in the sender window. Send to layer3.

TOLAYER3: seq: 12, ack 0, check: 20

TOLAYER3: scheduling arrival on other side

INSERTEVENT: time is 39814.630573

INSERTEVENT: future time will be 39820.762719

Sending next packet at A with sequence
no 12

EVENT time: 39820.762719, type: 2, fromlayer3 entity: 1

B_input at time 39820.8

Received seqno 12, expected seqno 12

Pkt delivered, seqno 12, payload wwwwwwwwwwwwwww

Packet with sequence no 12 received.
Sending ACK for sequence no 12.

TOLAYER3: seq: 0, ack 13, check: 19

TOLAYER3: scheduling arrival on other side

INSERTEVENT: time is 39820.762719

INSERTEVENT: future time will be 39827.321970

Ack sent to layer3 by B, ackno 13

EVENT time: 39827.321970, type: 2, fromlayer3 entity: 0

A_input at time 39827.3

Checksum confirmed 255

ACKno 13 first_unacked_no 11

STOP TIMER: stopping timer at 39827.321970

Timer stops at 39827.3

Number of pkt acked 2

Window advanced by 2

ACK for sequence no 12. Sliding
window by 2

CASE 3

A_output at time 2271.42

Message from A layer 5 mmmmmmmmmmmmmmmmmmmmmmm

Current sender buffer size 0

Seqno 12 expected ackno 13 checksum 210

Find an empty space in the sender window. Send to layer3.

TOLAYER3: packet being lost

START TIMER: starting timer at 2271.419416

INSERTEVENT: time is 2271.419416

INSERTEVENT: future time will be 2301.419416

Start timer at 2271.42 planned inter at 2301.42

Data packet being sent by A, but is lost

EVENT time: 2301.419416, type: 0, timerinterrupt entity: 0

Timer interrupts and the packet is
retransmitted

A_inter at time 2301.42

Retransmitted packet seqno 12 payload mmmmmmmmmmmmmmmmmmmmmmm

TOLAYER3: seq: 12, ack 0, check: 210 TOLAYER3: scheduling arrival on other side

INSERTEVENT: time is 2301.419416

INSERTEVENT: future time will be 2310.975555

START TIMER: starting timer at 2301.419416

INSERTEVENT: time is 2301.419416

INSERTEVENT: future time will be 2331.419416

Start timer at 2301.42 planned inter at 2331.42

CASE 4

ACK for packet no 5

ACKno 6 first unacked no 4

Timer stops at 30470.2

Window advanced by 2

GENERATE NEXT ARRIVAL: creating new arrival

INTERVENT: future time will be 30712.082278

Message from A layer 5

Segno 6 expected ackno 7 checksum 64

Data packet no 6 being sent by A, but is corrupted

TOLAYER3: seq: 6, ack 0, check: 64 TOLAYER3: packet being corrupted

INSERTEVENT: time is 30701.095614

INSETEVENT: future time will be 30703.115726

INSERTEVENT: time is 30701.095614

INSEVENT: future time will be 30731.095614

Start timer at 30701.1 planned inter at 30731.1

B receives corrupted packet

Pkt corrupted, packet checksum 64 actual 143

GENERATE NEXT ARRIVAL: creating new arrival

INSERTEVENT: time is 30712.082278

INTERVENT: future time will be 30718.723106

A sends packet no 7

Message from A layer 5 vvvvvvvvvvvvvvvvvvvvvvvv

Current sender buffer size 1

Seqno 7 expected ackno 8 checksum 44

Find an empty space in the sender window. Send to layer3.

TOLAYER3: seq: 7, ack 0, check: 44 TOLAYER3: scheduling arrival on other side

INSERTEVENT: time is 30712.082278

INSETEVENT: future time will be 30713.361064

B_input at time 30713.4

Received seqno 7, expected seqno 6

TOLAYER3: seq: 0, ack 6, check: 45 TOLAYER3: scheduling arrival on other side

INSERTEVENT: time is 30713.361064

INSEVENT: future time will be 30720.100497

Ack sent to layer3 by B, ackno 6

B receives packet no 7, sends ACK for packet no 5

GENERATE NEXT ARRIVAL: creating new arrival

INSETEVENT: time is 30718.723106
INSETEVENT: future time will be 31038.789026

A_output at time 30718.7

Message from A layer 5 wwwwwwwwwwwwwww

Current sender buffer size 2

Seqno 8 expected ackno 9 checksum 24

Find an empty space in the sender window. Send to layer3.

TOLAYER3: seq: 8, ack 0, check: 24 TOLAYER3: scheduling arrival on other side

INSERTEVENT: time is 30718.723106

INSETEVENT: future time will be 30721.259316

EVENT time: 30720.100497, type: 2, fromlayer3 entity: 0

A_input at time 30720.1

Checksum confirmed 255

ACKno 6 first_unacked_no 6

Duplicated ACK recieved. Restart timer at 30720.1 planned inter at 30750.1

[illegible]

STOP TIMER: stopping timer at 30720.100497

TOLAYER3: seq: 6, ack 0, check: 64 TOLAYER3: scheduling arrival on other side

INSERTEVENT: time is 30720.100497

INSETEVENT: future time will be 30726.811365

START TIMER: starting timer at 30720.100497

INSERTEVENT: time is 30720.100497

INSEVENT: future time will be 30750.100497

A sends packet no 8

Duplicate ACK for packet no 5
received, retransmit packet no 6

CASE 5

A_output at time 30398.8

Message from A layer 5 sssssssssssssssss

Current sender buffer size 0

Seqno 4 expected ackno 5 checksum 104

Find an empty space in the sender window. Send to layer3.

TOLAYER3: packet being lost

START TIMER: starting timer at 30398.754845

INSERTEVENT: time is 30398.754845

INSERTEVENT: future time will be 30428.754845

Start timer at 30398.8 planned inter at 30428.8

A sends packet no 4, but it losts

EVENT time: 30428.754845, type: 0, timerinterrupt entity: 0

A_inter at time 30428.8

Retransmitted packet seqno 4 payload sssssssssssssssss

TOLAYER3: packet being lost

START TIMER: starting timer at 30428.754845

INSERTEVENT: time is 30428.754845

INSERTEVENT: future time will be 30458.754845

Start timer at 30428.8 planned inter at 30458.8

Timeout, first retransmission

EVENT time: 30446.278268, type: 1, fromlayer5 entity: 0

GENERATE NEXT ARRIVAL: creating new arrival

INSERTEVENT: time is 30446.278268

INSERTEVENT: future time will be 30701.095614

A_output at time 30446.3

Message from A layer 5 tttttttttttttttt

Current sender buffer size 1

Seqno 5 expected ackno 6 checksum 84

Find an empty space in the sender window. Send to layer3.

TOLAYER3: seq: 5, ack 0, check: 84 TOLAYER3: scheduling arrival on other side

INSERTEVENT: time is 30446.278268

INSERTEVENT: future time will be 30456.043703

A sends packet no 5

EVENT time: 30456.043703, type: 2, fromlayer3 entity: 1

B_input at time 30456

Received seqno 5, expected seqno 4

TOLAYER3: seq: 0, ack 4, check: 85 TOLAYER3: scheduling arrival on other side

INSERTEVENT: time is 30456.043703

INSERTEVENT: future time will be 30458.706809

Ack sent to layer3 by B, ackno 4

B receives packet no 5 and buffers it

EVENT time: 30458.706809, type: 2, fromlayer3 entity: 0

A_input at time 30458.7

Checksum confirmed 255

ACKno 4 first_unacked_no 4

Duplicated ACK recieved. Restart timer at 30458.7 planned inter at 30488.7

Retransmitted packet seqno 4 payload sssssssssssssssss

STOP TIMER: stopping timer at 30458.706809

TOLAYER3: seq: 4, ack 0, check: 104 TOLAYER3: scheduling arrival on other side

INSERTEVENT: time is 30458.706809

INSERTEVENT: future time will be 30465.493210

START TIMER: starting timer at 30458.706809

INSERTEVENT: time is 30458.706809

INSERTEVENT: future time will be 30488.706809

Duplicate ACK for packet no 3, second retransmission for packet no 4

EVENT time: 30465.493210, type: 2, fromlayer3 entity: 1

B_input at time 30465.5

Received seqno 4, expected seqno 4

Pkt delivered, seqno 4, payload sssssssssssssssss

Pkt delivered, seqno 5, payload tttttttttttttttt

B delivers retransmitted packet no 4 and
sends ACK for packet no 5

TOLAYER3: seq: 0, ack 6, check: 102

TOLAYER3: scheduling arrival on other side

INSERTEVENT: time is 30465.493210

INSERTEVENT: future time will be 30470.191321

Ack sent to layer3 by B, ackno 6

EVENT time: 30470.191321, type: 2, fromlayer3 entity: 0

A_input at time 30470.2

Checksum confirmed 255

ACKno 6 first_unacked_no 4

STOP TIMER: stopping timer at 30470.191321

Timer stops at 30470.2

Number of pkt acked 2

Window advanced by 2

A receives ACK and moves the window
by 2