

# Lab 2: Reliable Transport Protocol

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CS536

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## The Alternating-bit-protocol version output

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----- Input -----  
----- Stop and Wait Network Simulator Version 1.1 -----  
  
Enter the number of messages to simulate: 10  
Enter packet loss probability [enter 0.0 for no loss]:0.1  
Enter packet corruption probability [0.0 for no corruption]:0.3  
Enter average time between messages from sender's layer5 [ > 0.0]:1500.0  
Enter TRACE:2
```

```
----- Handle Corruption -----  
EVENT time: 2805.861084, type: 1, fromlayer5 entity: 0  
A: sending packet# 0, checksum 107, payload aaaaaaaaaaaaaaaaaa  
TOLAYER3: packet being corrupted  
  
EVENT time: 2811.326172, type: 2, fromlayer3 entity: 1  
B: received packet# 0, checksum 107, payload Zaaaaaaaaaaaaaaaaa  
B: packet is corrupted.  
B: sending NAK.  
  
EVENT time: 2813.507812, type: 2, fromlayer3 entity: 0  
A: received NAK for packet# 0  
A: resending packet# 0, checksum 107, payload aaaaaaaaaaaaaaaaaa
```

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EVENT time: 2815.528320, type: 2, fromlayer3 entity: 1  
B: received packet# 0, checksum 107, payload aaaaaaaaaaaaaaaaaa  
B: sending ACK.  
TOLAYER3: packet being corrupted
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EVENT time: 2819.995605, type: 2, fromlayer3 entity: 0  
A: ACK is corrupted
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```
EVENT time: 2913.507812, type: 0, timerinterrupt entity: 0
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A: time out.  
A: resending packet# 0, checksum 107, payload aaaaaaaaaaaaaaaaaaaaaa  
TOLAYER3: packet being lost

EVENT time: 3013.507812, type: 0, timerinterrupt entity: 0  
A: time out.  
A: resending packet# 0, checksum 107, payload aaaaaaaaaaaaaaaaaaaaaa

EVENT time: 3022.936279, type: 2, fromlayer3 entity: 1  
B: received packet# 0, checksum 107, payload aaaaaaaaaaaaaaaaaaaaaa  
B: sending ACK.

EVENT time: 3030.399170, type: 2, fromlayer3 entity: 0  
A: received ACK for packet# 0

EVENT time: 5268.726562, type: 1, fromlayer5 entity: 0  
A: sending packet# 1, checksum 86, payload bbbbbbbbbbbbbbbbbbbb

EVENT time: 5271.457031, type: 2, fromlayer3 entity: 1  
B: received packet# 1, checksum 86, payload bbbbbbbbbbbbbbbbbbbb  
B: sending ACK.  
TOLAYER3: packet being corrupted

EVENT time: 5273.823242, type: 2, fromlayer3 entity: 0  
A: ACK is corrupted

EVENT time: 5368.726562, type: 0, timerinterrupt entity: 0  
A: time out.  
A: resending packet# 1, checksum 86, payload bbbbbbbbbbbbbbbbbbbb  
TOLAYER3: packet being lost

#### Handle Loss

EVENT time: 5468.726562, type: 0, timerinterrupt entity: 0  
A: time out.  
A: resending packet# 1, checksum 86, payload bbbbbbbbbbbbbbbbbbbb  
TOLAYER3: packet being lost

EVENT time: 5568.726562, type: 0, timerinterrupt entity: 0  
A: time out.  
A: resending packet# 1, checksum 86, payload bbbbbbbbbbbbbbbbbbbb

EVENT time: 5574.975586, type: 2, fromlayer3 entity: 1  
B: received packet# 1, checksum 86, payload bbbbbbbbbbbbbbbbbbbb  
B: sending ACK.

EVENT time: 5576.456055, type: 2, fromlayer3 entity: 0

A: received ACK for packet# 1

EVENT time: 6945.276367, type: 1, fromlayer5 entity: 0  
A: sending packet# 0, checksum 67, payload ccccccccccccccccccc

EVENT time: 6951.637207, type: 2, fromlayer3 entity: 1  
B: received packet# 0, checksum 67, payload ccccccccccccccccccc  
B: sending ACK.  
TOLAYER3: packet being lost

EVENT time: 7045.276367, type: 0, timerinterrupt entity: 0  
A: time out.  
A: resending packet# 0, checksum 67, payload ccccccccccccccccccc

EVENT time: 7046.334961, type: 2, fromlayer3 entity: 1  
B: received packet# 0, checksum 67, payload ccccccccccccccccccc  
B: sending ACK.  
TOLAYER3: packet being lost

EVENT time: 7145.276367, type: 0, timerinterrupt entity: 0  
A: time out.  
A: resending packet# 0, checksum 67, payload ccccccccccccccccccc

EVENT time: 7150.550293, type: 2, fromlayer3 entity: 1  
B: received packet# 0, checksum 67, payload ccccccccccccccccccc  
B: sending ACK.  
TOLAYER3: packet being lost

EVENT time: 7245.276367, type: 0, timerinterrupt entity: 0  
A: time out.  
A: resending packet# 0, checksum 67, payload ccccccccccccccccccc

EVENT time: 7254.057617, type: 2, fromlayer3 entity: 1  
B: received packet# 0, checksum 67, payload ccccccccccccccccccc  
B: sending ACK.  
TOLAYER3: packet being lost

EVENT time: 7345.276367, type: 0, timerinterrupt entity: 0  
A: time out.  
A: resending packet# 0, checksum 67, payload ccccccccccccccccccc  
TOLAYER3: packet being lost

EVENT time: 7445.276367, type: 0, timerinterrupt entity: 0  
A: time out.  
A: resending packet# 0, checksum 67, payload ccccccccccccccccccc

TOLAYER3: packet being corrupted

EVENT time: 7450.095703, type: 2, fromlayer3 entity: 1  
 B: received packet# 0, checksum 67, payload Zcccccccccccccccccc  
 B: packet is corrupted.  
 B: sending NAK.

EVENT time: 7453.757324, type: 2, fromlayer3 entity: 0  
 A: received NAK for packet# 0  
 A: resending packet# 0, checksum 67, payload ccccccccccccccccccc  
 TOLAYER3: packet being corrupted

EVENT time: 7462.667969, type: 2, fromlayer3 entity: 1  
 B: received packet# 0, checksum 67, payload Zcccccccccccccccccc  
 B: packet is corrupted.  
 B: sending NAK.  
 TOLAYER3: packet being corrupted

EVENT time: 7468.285645, type: 2, fromlayer3 entity: 0  
 A: ACK is corrupted

EVENT time: 7553.757324, type: 0, timerinterrupt entity: 0  
 A: time out.  
 A: resending packet# 0, checksum 67, payload ccccccccccccccccccc  
 TOLAYER3: packet being corrupted

EVENT time: 7555.789062, type: 2, fromlayer3 entity: 1  
 B: received packet# 0, checksum 67, payload Zcccccccccccccccccc  
 B: packet is corrupted.  
 B: sending NAK.  
 TOLAYER3: packet being corrupted

EVENT time: 7563.532227, type: 2, fromlayer3 entity: 0  
 A: ACK is corrupted

EVENT time: 7653.757324, type: 0, timerinterrupt entity: 0  
 A: time out.  
 A: resending packet# 0, checksum 67, payload ccccccccccccccccccc

EVENT time: 7660.448730, type: 2, fromlayer3 entity: 1  
 B: received packet# 0, checksum 67, payload ccccccccccccccccccc  
 B: sending ACK.  
 TOLAYER3: packet being corrupted

EVENT time: 7665.921387, type: 2, fromlayer3 entity: 0

A: ACK is corrupted

EVENT time: 7753.757324, type: 0, timerinterrupt entity: 0

A: time out.

A: resending packet# 0, checksum 67, payload ccccccccccccccccccc

EVENT time: 7759.144043, type: 2, fromlayer3 entity: 1

B: received packet# 0, checksum 67, payload ccccccccccccccccccc

B: sending ACK.

EVENT time: 7760.848145, type: 2, fromlayer3 entity: 0

A: received ACK for packet# 0

EVENT time: 8557.933594, type: 1, fromlayer5 entity: 0

A: sending packet# 1, checksum 46, payload ddddddddddddddddddd

EVENT time: 8565.891602, type: 2, fromlayer3 entity: 1

B: received packet# 1, checksum 46, payload ddddddddddddddddddd

B: sending ACK.

EVENT time: 8570.284180, type: 2, fromlayer3 entity: 0

A: received ACK for packet# 1

EVENT time: 8732.501953, type: 1, fromlayer5 entity: 0

A: sending packet# 0, checksum 27, payload eeeeeeeeeeeeeeeeeee

EVENT time: 8742.349609, type: 2, fromlayer3 entity: 1

B: received packet# 0, checksum 27, payload eeeeeeeeeeeeeeeeeee

B: sending ACK.

EVENT time: 8745.094727, type: 2, fromlayer3 entity: 0

A: received ACK for packet# 0

EVENT time: 9638.583008, type: 1, fromlayer5 entity: 0

A: sending packet# 1, checksum 6, payload ffffffffffffffffffff

EVENT time: 9645.198242, type: 2, fromlayer3 entity: 1

B: received packet# 1, checksum 6, payload ffffffffffffffffffff

B: sending ACK.

EVENT time: 9648.504883, type: 2, fromlayer3 entity: 0

A: received ACK for packet# 1

EVENT time: 11900.959961, type: 1, fromlayer5 entity: 0

A: sending packet# 0, checksum 243, payload gggggggggggggggggggg

TOLAYER3: packet being corrupted

EVENT time: 11902.473633, type: 2, fromlayer3 entity: 1  
 B: received packet# 0, checksum 243, payload Zgggggggggggggggggggg  
 B: packet is corrupted.  
 B: sending NAK.  
 TOLAYER3: packet being corrupted

EVENT time: 11903.571289, type: 2, fromlayer3 entity: 0  
 A: ACK is corrupted

EVENT time: 12000.959961, type: 0, timerinterrupt entity: 0  
 A: time out.  
 A: resending packet# 0, checksum 243, payload ggggggggggggggggggggg

EVENT time: 12003.109375, type: 2, fromlayer3 entity: 1  
 B: received packet# 0, checksum 243, payload ggggggggggggggggggggg  
 B: sending ACK.  
 TOLAYER3: packet being corrupted

EVENT time: 12004.693359, type: 2, fromlayer3 entity: 0  
 A: ACK is corrupted

EVENT time: 12100.959961, type: 0, timerinterrupt entity: 0  
 A: time out.  
 A: resending packet# 0, checksum 243, payload ggggggggggggggggggggg

EVENT time: 12106.207031, type: 2, fromlayer3 entity: 1  
 B: received packet# 0, checksum 243, payload ggggggggggggggggggggg  
 B: sending ACK.  
 TOLAYER3: packet being corrupted

EVENT time: 12115.150391, type: 2, fromlayer3 entity: 0  
 A: ACK is corrupted

EVENT time: 12200.959961, type: 0, timerinterrupt entity: 0  
 A: time out.  
 A: resending packet# 0, checksum 243, payload ggggggggggggggggggggg  
 TOLAYER3: packet being corrupted

EVENT time: 12210.282227, type: 2, fromlayer3 entity: 1  
 B: received packet# 0, checksum 243, payload Zgggggggggggggggggggg  
 B: packet is corrupted.

B: sending NAK.  
TOLAYER3: packet being corrupted

EVENT time: 12213.278320, type: 2, fromlayer3 entity: 0  
A: ACK is corrupted

EVENT time: 12300.959961, type: 0, timerinterrupt entity: 0  
A: time out.  
A: resending packet# 0, checksum 243, payload ggggggggggggggggggggg  
TOLAYER3: packet being corrupted

EVENT time: 12302.109375, type: 2, fromlayer3 entity: 1  
B: received packet# 0, checksum 243, payload ggggggggggggggggggggg  
B: packet is corrupted.  
B: sending NAK.

EVENT time: 12309.677734, type: 2, fromlayer3 entity: 0  
A: received NAK for packet# 0  
A: resending packet# 0, checksum 243, payload ggggggggggggggggggggg

EVENT time: 12313.851562, type: 2, fromlayer3 entity: 1  
B: received packet# 0, checksum 243, payload ggggggggggggggggggggg  
B: sending ACK.

EVENT time: 12321.453125, type: 2, fromlayer3 entity: 0  
A: received ACK for packet# 0

EVENT time: 13654.051758, type: 1, fromlayer5 entity: 0  
A: sending packet# 1, checksum 222, payload hhhhhhhhhhhhhhhhhhhh

EVENT time: 13658.952148, type: 2, fromlayer3 entity: 1  
B: received packet# 1, checksum 222, payload hhhhhhhhhhhhhhhhhhhh  
B: sending ACK.

EVENT time: 13668.690430, type: 2, fromlayer3 entity: 0  
A: received ACK for packet# 1

EVENT time: 15411.281250, type: 1, fromlayer5 entity: 0  
A: sending packet# 0, checksum 203, payload iiiiiiiiiiiiiiiiii

EVENT time: 15417.223633, type: 2, fromlayer3 entity: 1  
B: received packet# 0, checksum 203, payload iiiiiiiiiiiiiiiiii  
B: sending ACK.  
TOLAYER3: packet being lost

EVENT time: 15511.281250, type: 0, timerinterrupt entity: 0  
A: time out.  
A: resending packet# 0, checksum 203, payload iiiiiiiiiiiiiiiiiiiii

EVENT time: 15518.112305, type: 2, fromlayer3 entity: 1  
B: received packet# 0, checksum 203, payload iiiiiiiiiiiiiiiiiiiii  
B: sending ACK.

EVENT time: 15527.312500, type: 2, fromlayer3 entity: 0  
A: received ACK for packet# 0

EVENT time: 16185.201172, type: 1, fromlayer5 entity: 0  
A: sending packet# 1, checksum 182, payload jjjjjjjjjjjjjjjjjjjj

EVENT time: 16191.740234, type: 2, fromlayer3 entity: 1  
Simulator terminated at time 16191.740234  
after sending 10 msgs from layer5