

EVENT time: 18.705740, type: 1, fromlayer5 entity: 0

- A side received message from upper layer: aaaaaaaaaaaaaaaaaa
- Sending Message: aaaaaaaaaaaaaaaaaa ack# = 0 seq# = 0
- Started timer for packet 0

EVENT time: 24.170835, type: 2, fromlayer3 entity: 1

- B side received packet: aaaaaaaaaaaaaaaaaa ack# = 0 seq# = 0
- In-order packet received (seq# 0)!
- Sending all buffered packets in the window.
- B side sending packet to upper layer (seq# 0).
- Updating receiver buffer window.
- Now expecting packet 1
- B side sending ACK for packet 0: ACK ack# = 0 seq# = 0
- TOLAYER3: packet being corrupted

EVENT time: 29.402449, type: 2, fromlayer3 entity: 0

- A side received from lower layer: ACK ack# = 0 seq# = 999999
- A side received corrupt packet :(

EVENT time: 35.124840, type: 1, fromlayer5 entity: 0

- A side received message from upper layer: bbbbbbbbbbbbbbbbbbb
- Sending Message: bbbbbbbbbbbbbbbbbbb ack# = 1 seq# = 1
- TOLAYER3: packet being lost.
- Started timer for packet 1

EVENT time: 37.680447, type: 1, fromlayer5 entity: 0

- A side received message from upper layer: cccccccccccccccccc
- Sending Message: cccccccccccccccccc ack# = 2 seq# = 2
- TOLAYER3: packet being corrupted
- Started timer for packet 2

EVENT time: 38.705742, type: 0, timerinterrupt entity: 0

- TIMEOUT (packet 0) - timer restarted
- packet 0 resent: aaaaaaaaaaaaaaaaaa ack# = 0 seq# = 0
- TOLAYER3: packet being lost.

EVENT time: 42.147713, type: 2, fromlayer3 entity: 1

- B side received packet: Zccccccccccccccccc ack# = 2 seq# = 2
- B side received corrupt packet. Ignoring...

EVENT time: 46.394402, type: 1, fromlayer5 entity: 0

- A side received message from upper layer: ddddddddddddddddddd
- Sending Message: ddddddddddddddddddd ack# = 3 seq# = 3
- Started timer for packet 3

EVENT time: 51.666630, type: 2, fromlayer3 entity: 1
- B side received packet: ddddddddddddddddddd ack# = 3 seq# = 3
- Out-of-order packet received (seq# 3).
Expecting seq# 1. Buffering for later...
- B side sending ACK for packet 3: ACK ack# = 3 seq# = 3

EVENT time: 54.979748, type: 1, fromlayer5 entity: 0
- A side received message from upper layer: eeeeeeeeeeeeeeeeeee
- Sending Message: eeeeeeeeeeeeeeeeeee ack# = 4 seq# = 4
TOLAYER3: packet being lost.
- Started timer for packet 4

EVENT time: 55.124840, type: 0, timerinterrupt entity: 0
- TIMEOUT (packet 1) - timer restarted
packet 1 resent: bbbbbbbbbbbbbbbbbbb ack# = 1 seq# = 1
TOLAYER3: packet being corrupted

EVENT time: 55.869270, type: 2, fromlayer3 entity: 0
- A side received from lower layer: ACK ack# = 3 seq# = 3
- A side received valid packet.

- New ACK received (packet 3) - STOPPED TIMER
** 0 MESSAGES HAVE BEEN SENT SUCCESSFULLY **

- Updating sending window...
- Making sure all packets in the sending window have been sent.

- Message in window, already sent:	aaaaaaaaaaaaaaaaaaaaa	ack# = 0	seq# = 0
- Message in window, already sent:	bbbbbbbbbbbbbbbbbbbbb	ack# = 1	seq# = 1
- Message in window, already sent:	ccccccccccccccccccccc	ack# = 2	seq# = 2
- Message in window, already sent:	ddddddddddddddddddddd	ack# = 3	seq# = 3
- Message in window, already sent:	eeeeeeeeeeeeeeeeeeeee	ack# = 4	seq# = 4

EVENT time: 57.680447, type: 0, timerinterrupt entity: 0
- TIMEOUT (packet 2) - timer restarted
packet 2 resent: cccccccccccccccccccc ack# = 2 seq# = 2
TOLAYER3: packet being corrupted

EVENT time: 58.705742, type: 0, timerinterrupt entity: 0
- TIMEOUT (packet 0) - timer restarted
packet 0 resent: aaaaaaaaaaaaaaaaaaaaaa ack# = 0 seq# = 0

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EVENT time: 59.188442,  type: 2, fromlayer3  entity: 1
- B side received packet:          Zbbbbbbbbbbbbbbbbbb      ack# = 1      seq# = 1
- B side received corrupt packet. Ignoring...

EVENT time: 60.972366,  type: 2, fromlayer3  entity: 1
- B side received packet:          ccccccccccccccccccc      ack# = 999999      seq# = 2
- B side received corrupt packet. Ignoring...

EVENT time: 65.130951,  type: 2, fromlayer3  entity: 1
- B side received packet:          aaaaaaaaaaaaaaaaaaa      ack# = 0      seq# = 0
- Previously ACKed packet received. Re-ACKing...
- B side sending ACK for packet 0:      ACK                  ack# = 0      seq# = 0
      TOLAYER3: packet being lost.

EVENT time: 72.798996,  type: 1, fromlayer5  entity: 0
- A side received message from upper layer:      ffffffffffffffffffff
- Sending Message:          ffffffffffffffffffff      ack# = 5      seq# = 5
- Started timer for packet 5

EVENT time: 74.979752,  type: 0, timerinterrupt  entity: 0
- TIMEOUT (packet 4) - timer restarted
  packet 4 resent:          eeeeeeeeeeeeeeeeeee      ack# = 4      seq# = 4

EVENT time: 75.124840,  type: 0, timerinterrupt  entity: 0
- TIMEOUT (packet 1) - timer restarted
  packet 1 resent:          bbbbbbbbbbbbbbbbbbb      ack# = 1      seq# = 1
      TOLAYER3: packet being lost.

EVENT time: 75.429649,  type: 2, fromlayer3  entity: 1
- B side received packet:          ffffffffffffffffffff      ack# = 5      seq# = 5
- Out-of-order packet received (seq# 5).
  Expecting seq# 1. Buffering for later...
- B side sending ACK for packet 5:      ACK                  ack# = 5      seq# = 5

EVENT time: 76.736038,  type: 2, fromlayer3  entity: 0
- A side received from lower layer:      ACK                  ack# = 5      seq# = 5
- A side received valid packet.
- New ACK received (packet 5) - STOPPED TIMER
** 0 MESSAGES HAVE BEEN SENT SUCCESSFULLY **
- Updating sending window...
- Making sure all packets in the sending
  window have been sent.

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- Message in window, already sent:	aaaaaaaaaaaaaaaaaaaaa	ack# = 0	seq# = 0
- Message in window, already sent:	bbbbbbbbbbbbbbbbbbbbb	ack# = 1	seq# = 1
- Message in window, already sent:	cccccccccccccccccccc	ack# = 2	seq# = 2
- Message in window, already sent:	ddddddddddddddddddddd	ack# = 3	seq# = 3
- Message in window, already sent:	eeeeeeeeeeeeeeeeeeee	ack# = 4	seq# = 4
- Message in window, already sent:	ffffffffffffffffffffff	ack# = 5	seq# = 5

EVENT time: 77.304840, type: 2, fromlayer3 entity: 1

- B side received packet: eeeeeeeeeeeeeeeeeee ack# = 4 seq# = 4
 - Out-of-order packet received (seq# 4).
 Expecting seq# 1. Buffering for later...

- B side sending ACK for packet 4: ACK ack# = 4 seq# = 4
 TOLAYER3: packet being corrupted

EVENT time: 77.680450, type: 0, timerinterrupt entity: 0

- TIMEOUT (packet 2) - timer restarted
 packet 2 resent: ccccccccccccccccccc ack# = 2 seq# = 2
 TOLAYER3: packet being corrupted

EVENT time: 78.705742, type: 0, timerinterrupt entity: 0

- TIMEOUT (packet 0) - timer restarted
 packet 0 resent: aaaaaaaaaaaaaaaaaaaaaa ack# = 0 seq# = 0

EVENT time: 82.443901, type: 1, fromlayer5 entity: 0

- A side received message from upper layer: ggggggggggggggggggggg
 - Sending Message: ggggggggggggggggggggg ack# = 6 seq# = 6
 - Started timer for packet 6

EVENT time: 82.883453, type: 2, fromlayer3 entity: 0

- A side received from lower layer: ZCK ack# = 4 seq# = 4
 - A side received corrupt packet :(

EVENT time: 83.930389, type: 2, fromlayer3 entity: 1

- B side received packet: Zcccccccccccccccccc ack# = 2 seq# = 2
 - B side received corrupt packet. Ignoring...

EVENT time: 88.749672, type: 2, fromlayer3 entity: 1

- B side received packet: aaaaaaaaaaaaaaaaaaaaaa ack# = 0 seq# = 0
 - Previously ACKed packet received. Re-ACKing...
 - B side sending ACK for packet 0: ACK ack# = 0 seq# = 0
 TOLAYER3: packet being corrupted

EVENT time: 92.411438, type: 2, fromlayer3 entity: 1

- B side received packet: gggggggggggggggggggggg ack# = 6 seq# = 6
- Out-of-order packet received (seq# 6).
Expecting seq# 1. Buffering for later...
- B side sending ACK for packet 6: ACK ack# = 6 seq# = 6
TOLAYER3: packet being corrupted

EVENT time: 94.260300, type: 1, fromlayer5 entity: 0
- A side received message from upper layer: hhhhhhhhhhhhhhhhhhh
- Sending Message: hhhhhhhhhhhhhhhhhhh ack# = 7 seq# = 7
TOLAYER3: packet being lost.
- Started timer for packet 7

EVENT time: 94.979752, type: 0, timerinterrupt entity: 0
- TIMEOUT (packet 4) - timer restarted
packet 4 resent: eeeeeeeeeeeeeeeeeee ack# = 4 seq# = 4
TOLAYER3: packet being corrupted

EVENT time: 95.124840, type: 0, timerinterrupt entity: 0
- TIMEOUT (packet 1) - timer restarted
packet 1 resent: bbbbbbbbbbbbbbbbbbb ack# = 1 seq# = 1
TOLAYER3: packet being lost.

EVENT time: 96.434456, type: 1, fromlayer5 entity: 0
- A side received message from upper layer: iiiiiiiiiiiiiiiiii
- Too many packets in-flight. Buffering to send later...

EVENT time: 96.786087, type: 2, fromlayer3 entity: 1
- B side received packet: Zeeeeeeeeeeeeeeeeee ack# = 4 seq# = 4
- B side received corrupt packet. Ignoring...

EVENT time: 97.660454, type: 2, fromlayer3 entity: 0
- A side received from lower layer: ZCK ack# = 0 seq# = 0
- A side received corrupt packet :(

EVENT time: 97.680450, type: 0, timerinterrupt entity: 0
- TIMEOUT (packet 2) - timer restarted
packet 2 resent: ccccccccccccccccccc ack# = 2 seq# = 2

EVENT time: 98.705742, type: 0, timerinterrupt entity: 0
- TIMEOUT (packet 0) - timer restarted
packet 0 resent: aaaaaaaaaaaaaaaaaaa ack# = 0 seq# = 0
TOLAYER3: packet being corrupted

EVENT time: 102.443901, type: 0, timerinterrupt entity: 0

- TIMEOUT (packet 6) - timer restarted
- packet 6 resent: gggggggggggggggggggggg ack# = 6 seq# = 6

EVENT time: 103.278122, type: 2, fromlayer3 entity: 0

- A side received from lower layer: ZCK ack# = 6 seq# = 6
- A side received corrupt packet :(

EVENT time: 104.371796, type: 2, fromlayer3 entity: 1

- B side received packet: ccccccccccccccccccc ack# = 2 seq# = 2
- Out-of-order packet received (seq# 2).
Expecting seq# 1. Buffering for later...
- B side sending ACK for packet 2: ACK ack# = 2 seq# = 2

EVENT time: 106.076035, type: 2, fromlayer3 entity: 0

- A side received from lower layer: ACK ack# = 2 seq# = 2
- A side received valid packet.
- New ACK received (packet 2) - STOPPED TIMER
- ** 0 MESSAGES HAVE BEEN SENT SUCCESSFULLY **
- Updating sending window...
- Making sure all packets in the sending window have been sent.
- Message in window, already sent: aaaaaaaaaaaaaaaaaa ack# = 0 seq# = 0
- Message in window, already sent: bbbbbbbbbbbbbbbbbb ack# = 1 seq# = 1
- Message in window, already sent: ccccccccccccccccccc ack# = 2 seq# = 2
- Message in window, already sent: dddddddddddddddddd ack# = 3 seq# = 3
- Message in window, already sent: eeeeeeeeeeeeeeeeeee ack# = 4 seq# = 4
- Message in window, already sent: ffffffffffffffffffff ack# = 5 seq# = 5
- Message in window, already sent: gggggggggggggggggggg ack# = 6 seq# = 6
- Message in window, already sent: hhhhhhhhhhhhhhhhhhhh ack# = 7 seq# = 7

EVENT time: 107.572578, type: 1, fromlayer5 entity: 0

- A side received message from upper layer: jjjjjjjjjjjjjjjjjjjj
- Too many packets in-flight. Buffering to send later...

EVENT time: 108.736366, type: 1, fromlayer5 entity: 0

- A side received message from upper layer: kkkkkkkkkkkkkkkkkkk
- Too many packets in-flight. Buffering to send later...

EVENT time: 109.844398, type: 2, fromlayer3 entity: 1

- B side received packet: Zaaaaaaaaaaaaaaaaa ack# = 0 seq# = 0
- B side received corrupt packet. Ignoring...

- New ACK received (packet 4) - STOPPED TIMER
** 0 MESSAGES HAVE BEEN SENT SUCCESSFULLY **
- Updating sending window...
- Making sure all packets in the sending window have been sent.

- Message in window, already sent:	aaaaaaaaaaaaaaaaaaaaa	ack# = 0	seq# = 0
- Message in window, already sent:	bbbbbbbbbbbbbbbbbb	ack# = 1	seq# = 1
- Message in window, already sent:	cccccccccccccccccc	ack# = 2	seq# = 2
- Message in window, already sent:	ddddddddddddddddd	ack# = 3	seq# = 3
- Message in window, already sent:	eeeeeeeeeeeeeeeeeee	ack# = 4	seq# = 4
- Message in window, already sent:	fffffffffffffffffffff	ack# = 5	seq# = 5
- Message in window, already sent:	ggggggggggggggggggg	ack# = 6	seq# = 6
- Message in window, already sent:	hhhhhhhhhhhhhhhhhhh	ack# = 7	seq# = 7

EVENT time: 143.339615, type: 2, fromlayer3 entity: 1
- B side received packet: bbbbbbbbbbbbbbbbbbb ack# = 1 seq# = 1
- In-order packet received (seq# 1)!
Sending all buffered packets in the window.
- B side sending packet to upper layer (seq# 1).
- B side sending packet to upper layer (seq# 2).
- B side sending packet to upper layer (seq# 3).
- B side sending packet to upper layer (seq# 4).
- B side sending packet to upper layer (seq# 5).
- B side sending packet to upper layer (seq# 6).
- B side sending packet to upper layer (seq# 7).
- Updating receiver buffer window.
Now expecting packet 8
- B side sending ACK for packet 1: ACK ack# = 1 seq# = 1
TOLAYER3: packet being corrupted

EVENT time: 144.923477, type: 2, fromlayer3 entity: 0
- A side received from lower layer: ZCK ack# = 1 seq# = 1
- A side received corrupt packet :(

EVENT time: 147.702179, type: 1, fromlayer5 entity: 0
- A side received message from upper layer: ooooooooooooooooooooo

- Too many packets in-flight. Buffering to send later...

EVENT time: 152.827789, type: 2, fromlayer3 entity: 1

- B side received packet: aaaaaaaaaaaaaaaaaaaaaa ack# = 0 seq# = 0
- Previously ACKed packet received. Re-ACKing...
- B side sending ACK for packet 0: ACK ack# = 0 seq# = 0

EVENT time: 154.260300, type: 0, timerinterrupt entity: 0

- TIMEOUT (packet 7) - timer restarted
- packet 7 resent: hhhhhhhhhhhhhhhhhhhh ack# = 7 seq# = 7
- TOLAYER3: packet being corrupted

EVENT time: 155.124847, type: 0, timerinterrupt entity: 0

- TIMEOUT (packet 1) - timer restarted
- packet 1 resent: bbbbbbbbbbbbbbbbbbbb ack# = 1 seq# = 1
- TOLAYER3: packet being corrupted

EVENT time: 158.666260, type: 2, fromlayer3 entity: 0

- A side received from lower layer: ACK ack# = 0 seq# = 0
- A side received valid packet.
- New ACK received (packet 0) - STOPPED TIMER

** 1 MESSAGES HAVE BEEN SENT SUCCESSFULLY **

- Updating sending window...

- Making sure all packets in the sending window have been sent.

- Message in window, already sent:	bbbbbbbbbbbbbbbbbbbb	ack# = 1	seq# = 1
- Message in window, already sent:	cccccccccccccccccccc	ack# = 2	seq# = 2
- Message in window, already sent:	dddddddddddddddddd	ack# = 3	seq# = 3
- Message in window, already sent:	eeeeeeeeeeeeeeeeee	ack# = 4	seq# = 4
- Message in window, already sent:	ffffffffffffffffffff	ack# = 5	seq# = 5
- Message in window, already sent:	gggggggggggggggggg	ack# = 6	seq# = 6
- Message in window, already sent:	hhhhhhhhhhhhhhhhhh	ack# = 7	seq# = 7
- Sending NEW buffered message:	iiiiiiiiiiiiiiiiiii	ack# = 8	seq# = 8

- Started timer for packet 8

TOLAYER3: packet being corrupted

EVENT time: 158.728745, type: 2, fromlayer3 entity: 1

- B side received packet: Zbbbbbbbbbbbbbbbbbb ack# = 1 seq# = 1
- B side received corrupt packet. Ignoring...

EVENT time: 160.878128, type: 2, fromlayer3 entity: 1

- B side received packet: aaaaaaaaaaaaaaaaaaaaaa ack# = 0 seq# = 0
- Previously ACKed packet received. Re-ACKing...

- B side sending ACK for packet 1: ACK ack# = 1 seq# = 1

EVENT time: 187.928848, type: 1, fromlayer5 entity: 0

- A side received message from upper layer: rrrrrrrrrrrrrrrrrrrr

- Too many packets in-flight. Buffering to send later...

EVENT time: 190.959702, type: 2, fromlayer3 entity: 0

- A side received from lower layer: ACK ack# = 7 seq# = 7

- A side received valid packet.

- New ACK received (packet 7) - STOPPED TIMER

** 1 MESSAGES HAVE BEEN SENT SUCCESSFULLY **

- Updating sending window...

- Making sure all packets in the sending window have been sent.

- Message in window, already sent:	bbbbbbbbbbbbbbbbbbbb	ack# = 1	seq# = 1
- Message in window, already sent:	cccccccccccccccccccc	ack# = 2	seq# = 2
- Message in window, already sent:	dddddddddddddddddd	ack# = 3	seq# = 3
- Message in window, already sent:	eeeeeeeeeeeeeeeeeeee	ack# = 4	seq# = 4
- Message in window, already sent:	ffffffffffffffffffff	ack# = 5	seq# = 5
- Message in window, already sent:	gggggggggggggggggggg	ack# = 6	seq# = 6
- Message in window, already sent:	hhhhhhhhhhhhhhhhhh	ack# = 7	seq# = 7
- Message in window, already sent:	iiiiiiiiiiiiiiiiiii	ack# = 8	seq# = 8

EVENT time: 193.604523, type: 2, fromlayer3 entity: 1

- B side received packet: iiiiiiiiiiiiiiiiiii ack# = 8 seq# = 8

- In-order packet received (seq# 8)!

Sending all buffered packets in the window.

- B side sending packet to upper layer (seq# 8).

- Updating receiver buffer window.

Now expecting packet 9

- B side sending ACK for packet 8: ACK ack# = 8 seq# = 8

EVENT time: 195.124847, type: 0, timerinterrupt entity: 0

- TIMEOUT (packet 1) - timer restarted

packet 1 resent: bbbbbbbbbbbbbbbbbbb ack# = 1 seq# = 1

EVENT time: 195.337723, type: 2, fromlayer3 entity: 0

- A side received from lower layer: ACK ack# = 1 seq# = 1

- A side received valid packet.

- New ACK received (packet 1) - STOPPED TIMER

** 8 MESSAGES HAVE BEEN SENT SUCCESSFULLY **

- Updating sending window...

- Making sure all packets in the sending window have been sent.

- Message in window, already sent:	iiiiiiiiiiiiiiiiiiii	ack# = 8	seq# = 8
- Sending NEW buffered message:	jjjjjjjjjjjjjjjjjjj	ack# = 9	seq# = 9

- Started timer for packet 9

- Sending NEW buffered message:	kkkkkkkkkkkkkkkkkkk	ack# = 10	seq# = 10
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- Started timer for packet 10

- Sending NEW buffered message:	lllllllllllllllllll	ack# = 11	seq# = 11
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- Started timer for packet 11

- Sending NEW buffered message:	mmmmmmmmmmmmmmmmmm	ack# = 12	seq# = 12
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- Started timer for packet 12

- Sending NEW buffered message:	nnnnnnnnnnnnnnnnnnn	ack# = 13	seq# = 13
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- Started timer for packet 13

TOLAYER3: packet being corrupted

- Sending NEW buffered message:	oooooooooooooooooooo	ack# = 14	seq# = 14
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- Started timer for packet 14

- Sending NEW buffered message:	ppppppppppppppppppp	ack# = 15	seq# = 15
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- Started timer for packet 15

EVENT time: 196.682648, type: 1, fromlayer5 entity: 0

- A side received message from upper layer: ssssssssssssssssss

- Too many packets in-flight. Buffering to send later...

EVENT time: 196.721329, type: 2, fromlayer3 entity: 1

- B side received packet:	bbbbbbbbbbbbbbbbbbb	ack# = 1	seq# = 1
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- Previously ACKed packet received. Re-ACKing...

- B side sending ACK for packet 1:	ACK	ack# = 1	seq# = 1
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TOLAYER3: packet being lost.

EVENT time: 197.611755, type: 2, fromlayer3 entity: 0

- A side received from lower layer:	ACK	ack# = 8	seq# = 8
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- A side received valid packet.

- New ACK received (packet 8) - STOPPED TIMER

** 9 MESSAGES HAVE BEEN SENT SUCCESSFULLY **

- Updating sending window...

- Making sure all packets in the sending window have been sent.

- Message in window, already sent:	jjjjjjjjjjjjjjjjjjj	ack# = 9	seq# = 9
- Message in window, already sent:	kkkkkkkkkkkkkkkkkkk	ack# = 10	seq# = 10
- Message in window, already sent:	lllllllllllllllllll	ack# = 11	seq# = 11
- Message in window, already sent:	mmmmmmmmmmmmmmmmmm	ack# = 12	seq# = 12
- Message in window, already sent:	nnnnnnnnnnnnnnnnnnn	ack# = 13	seq# = 13
- Message in window, already sent:	oooooooooooooooooooo	ack# = 14	seq# = 14

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- Message in window, already sent:      ppppppppppppppppppppp      ack# = 15   seq# = 15
- Sending NEW buffered message:          qqqqqqqqqqqqqqqqqqqqq      ack# = 16   seq# = 16
- Started timer for packet 16
  TOLAYER3: packet being corrupted

EVENT time: 200.439545,  type: 2, fromlayer3  entity: 1
- B side received packet:                jjjjjjjjjjjjjjjjjjjj      ack# = 9    seq# = 9
- In-order packet received (seq# 9)!
  Sending all buffered packets in the window.
  - B side sending packet to upper
    layer (seq# 9).
- Updating receiver buffer window.
  Now expecting packet 10
- B side sending ACK for packet 9:        ACK                        ack# = 9    seq# = 9

EVENT time: 203.454391,  type: 2, fromlayer3  entity: 0
- A side received from lower layer:      ACK                        ack# = 9    seq# = 9
- A side received valid packet.
- New ACK received (packet 9) - STOPPED TIMER
** 10 MESSAGES HAVE BEEN SENT SUCCESSFULLY **
- Updating sending window...
- Making sure all packets in the sending
  window have been sent.
  - Message in window, already sent:      kkkkkkkkkkkkkkkkkkkkk      ack# = 10   seq# = 10
  - Message in window, already sent:      lllllllllllllllllllll      ack# = 11   seq# = 11
  - Message in window, already sent:      mmmmmmmmmmmmmmmmmmmmm      ack# = 12   seq# = 12
  - Message in window, already sent:      nnnnnnnnnnnnnnnnnnnnn      ack# = 13   seq# = 13
  - Message in window, already sent:      oooooooooooooooooooooo      ack# = 14   seq# = 14
  - Message in window, already sent:      ppppppppppppppppppppp      ack# = 15   seq# = 15
  - Message in window, already sent:      qqqqqqqqqqqqqqqqqqqqq      ack# = 16   seq# = 16
  - Sending NEW buffered message:          rrrrrrrrrrrrrrrrrrrrr      ack# = 17   seq# = 17
- Started timer for packet 17

EVENT time: 205.311218,  type: 2, fromlayer3  entity: 1
- B side received packet:                kkkkkkkkkkkkkkkkkkkkk      ack# = 10   seq# = 10
- In-order packet received (seq# 10)!
  Sending all buffered packets in the window.
  - B side sending packet to upper
    layer (seq# 10).
- Updating receiver buffer window.
  Now expecting packet 11
- B side sending ACK for packet 10:        ACK                        ack# = 10   seq# = 10
  TOLAYER3: packet being lost.
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EVENT time: 210.887939, type: 1, fromlayer5 entity: 0

- A side received message from upper layer: tttttttttttttttttttt
- Too many packets in-flight. Buffering to send later...

EVENT time: 211.850449, type: 2, fromlayer3 entity: 1

- B side received packet: 11111111111111111111 ack# = 11 seq# = 11
- In-order packet received (seq# 11)!
- Sending all buffered packets in the window.
- B side sending packet to upper layer (seq# 11).
- Updating receiver buffer window.
- Now expecting packet 12
- B side sending ACK for packet 11: ACK ack# = 11 seq# = 11

EVENT time: 213.713379, type: 2, fromlayer3 entity: 0

- A side received from lower layer: ACK ack# = 11 seq# = 11
- A side received valid packet.
- New ACK received (packet 11) - STOPPED TIMER

** 10 MESSAGES HAVE BEEN SENT SUCCESSFULLY **

- Updating sending window...
- Making sure all packets in the sending window have been sent.
- Message in window, already sent: kkkkkkkkkkkkkkkkkkk ack# = 10 seq# = 10
- Message in window, already sent: 11111111111111111111 ack# = 11 seq# = 11
- Message in window, already sent: mmmmmmmmmmmmmmmmmmm ack# = 12 seq# = 12
- Message in window, already sent: nnnnnnnnnnnnnnnnnnnn ack# = 13 seq# = 13
- Message in window, already sent: oooooooooooooooooooooo ack# = 14 seq# = 14
- Message in window, already sent: pppppppppppppppppppp ack# = 15 seq# = 15
- Message in window, already sent: qqqqqqqqqqqqqqqqqqq ack# = 16 seq# = 16
- Message in window, already sent: rrrrrrrrrrrrrrrrrrrr ack# = 17 seq# = 17

EVENT time: 215.337723, type: 0, timerinterrupt entity: 0

- TIMEOUT (packet 15) - timer restarted
- packet 15 resent: pppppppppppppppppppp ack# = 15 seq# = 15

EVENT time: 215.337723, type: 0, timerinterrupt entity: 0

- TIMEOUT (packet 14) - timer restarted
- packet 14 resent: oooooooooooooooooooooo ack# = 14 seq# = 14

EVENT time: 215.337723, type: 0, timerinterrupt entity: 0

- TIMEOUT (packet 13) - timer restarted
- packet 13 resent: nnnnnnnnnnnnnnnnnnnn ack# = 13 seq# = 13

TOLAYER3: packet being corrupted

EVENT time: 215.337723, type: 0, timerinterrupt entity: 0

- TIMEOUT (packet 12) - timer restarted

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packet 12 resent:                mmmmmmmmmmmmmmmmmmmmmmm    ack# = 12    seq# = 12
```

TOLAYER3: packet being corrupted

EVENT time: 215.337723, type: 0, timerinterrupt entity: 0

- TIMEOUT (packet 10) - timer restarted

```
packet 10 resent:      kkkkkkkkkkkkkkkkkkkkkkk      ack# = 10      seq# = 10
```

TOLAYER3: packet being lost.

```
EVENT time: 215.958191, type: 2, fromlayer3 entity: 1
```

```
- B side received packet: mmmmmmmmmmmmmmmmmmmmm
```

ack# = 12 seq# = 12

- In-order packet received (seq# 12)!

Sending all buffered packets in the window.

- B side sending packet to upper layer (seq# 12).

- Updating receiver buffer window.

Now expecting packet 13

```
- B side sending ACK for packet 12:      ACK      ack# = 12  seq# = 12
```

TOLAYER3: packet being lost.

```
EVENT time: 217.611755,  type: 0, timerinterrupt  entity: 0
```

- TIMEOUT (packet 16) - timer restarted

```
packet 16 resent:                qqqqqqqqqqqqqqqqqqqqqqqq      ack# = 16    seq# = 16
```

EVENT time: 223.239639, type: 2, fromlayer3 entity: 1

```
- B side received packet: Znnnnnnnnnnnnnnnnnnnn
```

ack# = 13 seq# = 13

```
- B side received corrupt packet. Ignoring...
```

EVENT time: 223.454391, type: 0, timerinterrupt entity: 0

- TIMEOUT (packet 17) - timer restarted

```
packet 17 resent:      rrrrrrrrrrrrrrrrrrrrrrrr      ack# = 17    seq# = 17
```

TOLAYER3: packet being lost.

EVENT time: 229.745026, type: 2, fromlayer3 entity: 1

```
- B side received packet: 00000000000000000000
```

ack# = 14 seq# = 14

- Out-of-order packet received (seq# 14).

Expecting seq# 13. Buffering for later...

```
- B side sending ACK for packet 14:      ACK      ack# = 14      seq# = 14
```

TOLAYER3: packet being corrupted


```
- TIMEOUT (packet 16) - timer restarted
  packet 16 resent:          qqqqqqqqqqqqqqqqqqqq      ack# = 16   seq# = 16
    TOLAYER3: packet being lost.

EVENT time: 240.864792,  type: 2, fromlayer3 entity: 1
- B side received packet:      Zqqqqqqqqqqqqqqqqqqq      ack# = 16   seq# = 16
- B side received corrupt packet. Ignoring...

EVENT time: 243.454391,  type: 0, timerinterrupt entity: 0
- TIMEOUT (packet 17) - timer restarted
  packet 17 resent:          rrrrrrrrrrrrrrrrrrrr      ack# = 17   seq# = 17
    TOLAYER3: packet being corrupted

EVENT time: 244.843124,  type: 1, fromlayer5 entity: 0
- A side received message from upper layer:      wwwwwwwwwwwwwwwwwwwww
- Too many packets in-flight. Buffering to send later...

EVENT time: 246.597839,  type: 2, fromlayer3 entity: 1
- B side received packet:      rrrrrrrrrrrrrrrrrrrr      ack# = 17   seq# = 17
- Out-of-order packet received (seq# 17).
  Expecting seq# 13. Buffering for later...
- B side sending ACK for packet 17:      ACK              ack# = 17   seq# = 17

EVENT time: 250.722809,  type: 2, fromlayer3 entity: 1
- B side received packet:      ppppppppppppppppppppp      ack# = 15   seq# = 15
- Out-of-order packet received (seq# 15).
  Expecting seq# 13. Buffering for later...
- B side sending ACK for packet 15:      ACK              ack# = 15   seq# = 15

EVENT time: 254.720230,  type: 2, fromlayer3 entity: 0
- A side received from lower layer:      ACK              ack# = 17   seq# = 17
- A side received valid packet.
- New ACK received (packet 17) - STOPPED TIMER
** 10 MESSAGES HAVE BEEN SENT SUCCESSFULLY **
- Updating sending window...
- Making sure all packets in the sending
  window have been sent.
  - Message in window, already sent:      kkkkkkkkkkkkkkkkkkk      ack# = 10   seq# = 10
  - Message in window, already sent:      llllllllllllllllllll      ack# = 11   seq# = 11
  - Message in window, already sent:      mmmmmmmmmmmmmmmmmmmm      ack# = 12   seq# = 12
  - Message in window, already sent:      nnnnnnnnnnnnnnnnnnnn      ack# = 13   seq# = 13
  - Message in window, already sent:      oooooooooooooooooooooo      ack# = 14   seq# = 14
  - Message in window, already sent:      ppppppppppppppppppppp      ack# = 15   seq# = 15
```

- Message in window, already sent: qqqqqqqqqqqqqqqqqqqq ack# = 16 seq# = 16
- Message in window, already sent: rrrrrrrrrrrrrrrrrrrr ack# = 17 seq# = 17

EVENT time: 255.337723, type: 0, timerinterrupt entity: 0

- TIMEOUT (packet 15) - timer restarted

packet 15 resent: pppppppppppppppppppp ack# = 15 seq# = 15

EVENT time: 255.337723, type: 0, timerinterrupt entity: 0

- TIMEOUT (packet 14) - timer restarted

packet 14 resent: oooooooooooooooooooooo ack# = 14 seq# = 14

EVENT time: 255.337723, type: 0, timerinterrupt entity: 0

- TIMEOUT (packet 13) - timer restarted

packet 13 resent: nnnnnnnnnnnnnnnnnnnn ack# = 13 seq# = 13

EVENT time: 255.337723, type: 0, timerinterrupt entity: 0

- TIMEOUT (packet 12) - timer restarted

packet 12 resent: mmmmmmmmmmmmmmmmmmm ack# = 12 seq# = 12

EVENT time: 255.337723, type: 0, timerinterrupt entity: 0

- TIMEOUT (packet 10) - timer restarted

packet 10 resent: kkkkkkkkkkkkkkkkkkkk ack# = 10 seq# = 10

EVENT time: 256.727448, type: 1, fromlayer5 entity: 0

- A side received message from upper layer: xxxxxxxxxxxxxxxxxxxxx

- Too many packets in-flight. Buffering to send later...

EVENT time: 257.611755, type: 0, timerinterrupt entity: 0

- TIMEOUT (packet 16) - timer restarted

packet 16 resent: qqqqqqqqqqqqqqqqqqqq ack# = 16 seq# = 16

EVENT time: 258.732880, type: 1, fromlayer5 entity: 0

- A side received message from upper layer: yyyyyyyyyyyyyyyyyyy

- Too many packets in-flight. Buffering to send later...

EVENT time: 260.648254, type: 2, fromlayer3 entity: 1

- B side received packet: oooooooooooooooooooooo ack# = 14 seq# = 14

- Out-of-order packet received (seq# 14).

Expecting seq# 13. Buffering for later...

- B side sending ACK for packet 14: ACK ack# = 14 seq# = 14

TOLAYER3: packet being lost.

EVENT time: 263.061981, type: 2, fromlayer3 entity: 1

- ```
- B side received packet: Znnnnnnnnnnnnnnnnnnnnn ack# = 13 seq# = 13
- B side received corrupt packet. Ignoring...
```

EVENT time: 264.090729, type: 2, fromlayer3 entity: 0

- ```
- A side received from lower layer:      ACK          ack# = 15    seq# = 15
```

- A side received valid packet.

- New ACK received (packet 15) - STOPPED TIMER

**** 10 MESSAGES HAVE BEEN SENT SUCCESSFULLY ****

- Updating sending window...

- Making sure all packets in the sending window have been sent.

- ```
- Message in window, already sent: kkkkkkkkkkkkkkkkkkkkkkk ack# = 10 seq# = 10
```

- ```
- Message in window, already sent:      11111111111111111111      ack# = 11      seq# = 11
```

- ```
- Message in window, already sent: mmmmmmmmmmmmmmmmmmmmmmm ack# = 12 seq# = 12
```

- ```
- Message in window, already sent:      nnnnnnnnnnnnnnnnnnnnnnnn      ack# = 13      seq# = 13
```

- ```
- Message in window, already sent: 00000000000000000000 ack# = 14 seq# = 14
```

- ```
- Message in window, already sent:      pppppppppppppppppppppppp      ack# = 15      seq# = 15
```

- ```
- Message in window, already sent: qqqqqqqqqqqqqqqqqqqqqqqq ack# = 16 seq# = 16
```

- ```
- Message in window, already sent:      rrrrrrrrrrrrrrrrrrrrrrrr    ack# = 17   seq# = 17
```

EVENT time: 267.492981, type: 2, fromlayer3 entity: 1

- ```
- B side received packet: Zmmmmmmmmmmmmmmmmmmmmmm ack# = 12 seq# = 12
```

- ```
- B side received corrupt packet. Ignoring...
```

EVENT time: 269.030487, type: 2, fromlayer3 entity: 1

- ```
- B side received packet: qqqqqqqqqqqqqqqqqqqqqqqqqqqqq ack# = 16 seq# = 16
```

- Out-of-order packet received (seq# 16).

Expecting seq# 13. Buffering for later...

- ```
- B side sending ACK for packet 16:      ACK      ack# = 16      seq# = 16
```

EVENT time: 271.072449, type: 2, fromlayer3 entity: 0

- ```
- A side received from lower layer: ACK ack# = 16 seq# = 16
```

- A side received valid packet.

- New ACK received (packet 16) - STOPPED TIMER

**\*\* 10 MESSAGES HAVE BEEN SENT SUCCESSFULLY \*\***

- Updating sending window...

- Making sure all packets in the sending window have been sent.

- ```
- Message in window, already sent:      kkkkkkkkkkkkkkkkkkkkkk      ack# = 10      seq# = 10
```

- ```
- Message in window, already sent: 11111111111111111111 ack# = 11 seq# = 11
```

- ```
- Message in window, already sent:      mmmmmmmmmmmmmmmmmmmmmmm    ack# = 12    seq# = 12
```

- ```
- Message in window, already sent: nnnnnnnnnnnnnnnnnnnnnnnn ack# = 13 seq# = 13
```

- ```
- Message in window, already sent:      00000000000000000000      ack# = 14      seq# = 14
```

- Message in window, already sent: pppppppppppppppppppp ack# = 15 seq# = 15
- Message in window, already sent: qqqqqqqqqqqqqqqqqqqq ack# = 16 seq# = 16
- Message in window, already sent: rrrrrrrrrrrrrrrrrrrr ack# = 17 seq# = 17

EVENT time: 275.337708, type: 0, timerinterrupt entity: 0

- TIMEOUT (packet 10) - timer restarted

packet 10 resent: kkkkkkkkkkkkkkkkkkkk ack# = 10 seq# = 10

EVENT time: 275.337708, type: 0, timerinterrupt entity: 0

- TIMEOUT (packet 12) - timer restarted

packet 12 resent: mmmmmmmmmmmmmmmmmmmmm ack# = 12 seq# = 12

EVENT time: 275.337708, type: 0, timerinterrupt entity: 0

- TIMEOUT (packet 13) - timer restarted

packet 13 resent: nnnnnnnnnnnnnnnnnnnnnn ack# = 13 seq# = 13

EVENT time: 275.337708, type: 0, timerinterrupt entity: 0

- TIMEOUT (packet 14) - timer restarted

packet 14 resent: oooooooooooooooooooooo ack# = 14 seq# = 14

TOLAYER3: packet being lost.

EVENT time: 277.743988, type: 2, fromlayer3 entity: 1

- B side received packet: oooooooooooooooooooooo ack# = 14 seq# = 14

- Out-of-order packet received (seq# 14).

Expecting seq# 13. Buffering for later...

- B side sending ACK for packet 14: ACK ack# = 14 seq# = 14

EVENT time: 278.016022, type: 1, fromlayer5 entity: 0

- A side received message from upper layer: zzzzzzzzzzzzzzzzzzzz

- Too many packets in-flight. Buffering to send later...

EVENT time: 279.871674, type: 2, fromlayer3 entity: 1

- B side received packet: pppppppppppppppppppp ack# = 15 seq# = 15

- Out-of-order packet received (seq# 15).

Expecting seq# 13. Buffering for later...

- B side sending ACK for packet 15: ACK ack# = 15 seq# = 15

EVENT time: 282.917542, type: 2, fromlayer3 entity: 0

- A side received from lower layer: ACK ack# = 14 seq# = 14

- A side received valid packet.

- New ACK received (packet 14) - STOPPED TIMER

** 10 MESSAGES HAVE BEEN SENT SUCCESSFULLY **

- Updating sending window...

EVENT time: 295.337708, type: 0, timerinterrupt entity: 0

- TIMEOUT (packet 10) - timer restarted
- packet 10 resent: kkkkkkkkkkkkkkkkkkkk ack# = 10 seq# = 10

EVENT time: 297.801147, type: 2, fromlayer3 entity: 1

- B side received packet: oooooooooooooooooooooo ack# = 14 seq# = 14
- Out-of-order packet received (seq# 14).
Expecting seq# 13. Buffering for later...
- B side sending ACK for packet 14: ACK ack# = 14 seq# = 14

EVENT time: 301.307526, type: 1, fromlayer5 entity: 0

- A side received message from upper layer: cccccccccccccccccccc
- Too many packets in-flight. Buffering to send later...

EVENT time: 301.438660, type: 1, fromlayer5 entity: 0

- A side received message from upper layer: dddddddddddddddddddd
- Too many packets in-flight. Buffering to send later...

EVENT time: 305.773438, type: 2, fromlayer3 entity: 0

- A side received from lower layer: ACK ack# = 14 seq# = 14
- A side received valid packet.
- Received duplicate ACK for packet. Ignoring...13

EVENT time: 305.933777, type: 2, fromlayer3 entity: 1

- B side received packet: nnnnnnnnnnnnnnnnnnnn ack# = 13 seq# = 13
- In-order packet received (seq# 13)!
Sending all buffered packets in the window.
 - B side sending packet to upper layer (seq# 13).
 - B side sending packet to upper layer (seq# 14).
 - B side sending packet to upper layer (seq# 15).
 - B side sending packet to upper layer (seq# 16).
 - B side sending packet to upper layer (seq# 17).
- Updating receiver buffer window.
Now expecting packet 18
- B side sending ACK for packet 13: ACK ack# = 13 seq# = 13
TOLAYER3: packet being lost.

EVENT time: 308.150024, type: 1, fromlayer5 entity: 0

- ```
- A side received message from upper layer: eeeeeeeeeeeeeeeeeeeeee
- Too many packets in-flight. Buffering to send later...
```

EVENT time: 313.739777, type: 1, fromlayer5 entity: 0

- ```
- A side received message from upper layer:  ffffffffffffffffffffffff
- Too many packets in-flight. Buffering to send later...
```

EVENT time: 314.085480, type: 2, fromlayer3 entity: 1

- ```
- B side received packet: mmmmmmmmmmmmmmmmmmmmmmmmm ack# = 12 seq# = 12
- Previously ACKed packet received. Re-ACKing...
- B side sending ACK for packet 12: ACK ack# = 12 seq# = 12
```

```
EVENT time: 315.337708, type: 0, timerinterrupt entity: 0
```

- ```
- TIMEOUT (packet 10) - timer restarted
packet 10 resent:          kkkkkkkkkkkkkkkkkkkk      ack# = 10    seq# = 10
      TOLAYER3: packet being corrupted
```

```
EVENT time: 315.337708, type: 0, timerinterrupt entity: 0
```

- ```
- TIMEOUT (packet 12) - timer restarted
packet 12 resent: mmmmmmmmmmmmmmmmmmm ack# = 12 seq# = 12
TOLAYER3: packet being lost.
```

EVENT time: 315.337708, type: 0, timerinterrupt entity: 0

- ```
- TIMEOUT (packet 13) - timer restarted  
packet 13 resent:                nnnnnnnnnnnnnnnnnnnnnn      ack# = 13    seq# = 13  
TOLAYER3: packet being corrupted
```

EVENT time: 317.213654, type: 2, fromlayer3 entity: 0

- ```
- A side received from lower layer: ACK ack# = 12 seq# = 12
- A side received valid packet.
- New ACK received (packet 12) - STOPPED TIMER
```

**\*\* 10 MESSAGES HAVE BEEN SENT SUCCESSFULLY \*\***

- Updating sending window...

- Making sure all packets in the sending window have been sent.

- |                                    |                      |           |           |
|------------------------------------|----------------------|-----------|-----------|
| - Message in window, already sent: | kkkkkkkkkkkkkkkkkkkk | ack# = 10 | seq# = 10 |
| - Message in window, already sent: | llllllllllllllllllll | ack# = 11 | seq# = 11 |
| - Message in window, already sent: | mmmmmmmmmmmmmmmmmmmm | ack# = 12 | seq# = 12 |
| - Message in window, already sent: | nnnnnnnnnnnnnnnnnnnn | ack# = 13 | seq# = 13 |
| - Message in window, already sent: | oooooooooooooooooooo | ack# = 14 | seq# = 14 |
| - Message in window, already sent: | pppppppppppppppppppp | ack# = 15 | seq# = 15 |
| - Message in window, already sent: | qqqqqqqqqqqqqqqqqqqq | ack# = 16 | seq# = 16 |
| - Message in window, already sent: | rrrrrrrrrrrrrrrrrrrr | ack# = 17 | seq# = 17 |



```
EVENT time: 318.400238, type: 2, fromlayer3 entity: 1
- B side received packet: kkkkkkkkkkkkkkkkkkkk ack# = 10 seq# = 10
- Previously ACKed packet received. Re-ACKing...
- B side sending ACK for packet 10: ACK ack# = 10 seq# = 10
 TOLAYER3: packet being lost.
```

```
EVENT time: 323.986572, type: 2, fromlayer3 entity: 1
- B side received packet: qqqqqqqqqqqqqqqqqqqq ack# = 16 seq# = 16
- Previously ACKed packet received. Re-ACKing...
- B side sending ACK for packet 16: ACK ack# = 16 seq# = 16
```

```
EVENT time: 330.269623, type: 1, fromlayer5 entity: 0
- A side received message from upper layer: ggggggggggggggggggggggggggggggg
- Too many packets in-flight. Buffering to send later...
```

```
EVENT time: 330.824066, type: 2, fromlayer3 entity: 1
- B side received packet: kkkkkkkkkkkkkkkkkkkk ack# = 10 seq# = 10
- Previously ACKed packet received. Re-ACKing...
- B side sending ACK for packet 10: ACK ack# = 10 seq# = 10
 TOLAYER3: packet being lost.
```

```
EVENT time: 331.590546, type: 2, fromlayer3 entity: 0
- A side received from lower layer: ACK ack# = 16 seq# = 16
- A side received valid packet.
- Received duplicate ACK for packet. Ignoring...15
```

[illegible]

```
EVENT time: 335.211243, type: 1, fromlayer5 entity: 0
- A side received message from upper layer: hhhhhhhhhhhhhhhhhhhh
- Too many packets in-flight. Buffering to send later...
```

```
EVENT time: 335.337708, type: 0, timerinterrupt entity: 0
- TIMEOUT (packet 13) - timer restarted
 packet 13 resent: nnnnnnnnnnnnnnnnnnnn ack# = 13 seq# = 13
 TOLAYER3: packet being lost.
```

```
EVENT time: 335.337708, type: 0, timerinterrupt entity: 0
- TIMEOUT (packet 10) - timer restarted
```



```
EVENT time: 355.337708, type: 0, timerinterrupt entity: 0
```

- TIMEOUT (packet 10) - timer restarted

```
packet 10 resent: kkkkkkkkkkkkkkkkkkkkkkk ack# = 10 seq# = 10
```

EVENT time: 356.190094, type: 1, fromlayer5 entity: 0

```
- A side received message from upper layer: jjjjjjjjjjjjjjjjjjjjjjjjjjj
```

- Too many packets in-flight. Buffering to send later...

EVENT time: 357.587006, type: 2, fromlayer3 entity: 1

```
- B side received packet: mmmmmmmmmmmmmmmmmmmmmmmmmmmmmmm ack# = 12 seq# = 12
```

- Previously ACKed packet received. Re-ACKing...

```
- B side sending ACK for packet 12: ACK ack# = 12 seq# = 12
```

EVENT time: 358.633850, type: 2, fromlayer3 entity: 1

```
- B side received packet: kkkkkkkkkkkkkkkkkkkkkk ack# = 10 seq# = 10
```

- Previously ACKed packet received. Re-ACKing...

```
- B side sending ACK for packet 10: ACK ack# = 10 seq# = 10
```

EVENT time: 360.226501, type: 2, fromlayer3 entity: 0

```
- A side received from lower layer: ACK ack# = 12 seq# = 12
```

- A side received valid packet.

```
- Received duplicate ACK for packet. Ignoring...11
```

EVENT time: 364.551331, type: 2, fromlayer3 entity: 1

```
- B side received packet: Zkkkkkkkkkkkkkkkkkkkkkk ack# = 10 seq# = 10
```

```
- B side received corrupt packet. Ignoring...
```

EVENT time: 365.697327, type: 2, fromlayer3 entity: 0

```
- A side received from lower layer: ACK ack# = 10 seq# = 10
```

- A side received valid packet.

- New ACK received (packet 10) - STOPPED TIMER

**\*\* 18 MESSAGES HAVE BEEN SENT SUCCESSFULLY \*\***

- Updating sending window...

- Making sure all packets in the sending window have been sent.

```
- Sending NEW buffered message: sssssssssssssssssssssss ack# = 18 seq# = 18
```

```
- Started timer for packet 18
```

```
- Sending NEW buffered message: ttttttttttttttttttttttt ack# = 19 seq# = 19
```

- Started timer for packet 19

[illegible]

- Started timer for packet 20

TOLAYER3: packet being corrupted

```
- Sending NEW buffered message: vvvvvvvvvvvvvvvvvvvvvvvv ack# = 21 seq# = 21
```

- Started timer for packet 21  
TOLAYER3: packet being lost.  
- Sending NEW buffered message: wwwwww ack# = 22 seq# = 22  
- Started timer for packet 22  
- Sending NEW buffered message: xxxxxxxxxxxxxxxxxxxxxx ack# = 23 seq# = 23  
- Started timer for packet 23  
- Sending NEW buffered message: yyyyyyyyyyyyyyyyyyyy ack# = 24 seq# = 24  
- Started timer for packet 24  
- Sending NEW buffered message: zzzzzzzzzzzzzzzzzzzz ack# = 25 seq# = 25  
- Started timer for packet 25  
TOLAYER3: packet being lost.

EVENT time: 366.454498, type: 1, fromlayer5 entity: 0  
- A side received message from upper layer: kkkkkkkkkkkkkkkkkkk  
- Too many packets in-flight. Buffering to send later...

EVENT time: 366.589905, type: 2, fromlayer3 entity: 1  
- B side received packet: Znnnnnnnnnnnnnnnnnnn ack# = 13 seq# = 13  
- B side received corrupt packet. Ignoring...

EVENT time: 369.436462, type: 2, fromlayer3 entity: 1  
- B side received packet: kkkkkkkkkkkkkkkkkkkk ack# = 10 seq# = 10  
- Previously ACKed packet received. Re-ACKing...  
- B side sending ACK for packet 10: ACK ack# = 10 seq# = 10

EVENT time: 371.099884, type: 2, fromlayer3 entity: 0  
- A side received from lower layer: ACK ack# = 10 seq# = 10  
- A side received valid packet.  
- Received duplicate ACK for packet. Ignoring...9

EVENT time: 376.563751, type: 2, fromlayer3 entity: 1  
- B side received packet: kkkkkkkkkkkkkkkkkkkk ack# = 10 seq# = 10  
- Previously ACKed packet received. Re-ACKing...  
- B side sending ACK for packet 10: ACK ack# = 10 seq# = 10

EVENT time: 379.638580, type: 2, fromlayer3 entity: 1  
- B side received packet: sssssssssssssssssssss ack# = 18 seq# = 18  
- In-order packet received (seq# 18)!  
Sending all buffered packets in the window.  
- B side sending packet to upper layer (seq# 18).  
- Updating receiver buffer window.  
Now expecting packet 19





Expecting seq# 20. Buffering for later...

- B side sending ACK for packet 22: ACK ack# = 22 seq# = 22

EVENT time: 401.440765, type: 2, fromlayer3 entity: 0

- A side received from lower layer: ACK ack# = 22 seq# = 22

- A side received valid packet.

- New ACK received (packet 22) - STOPPED TIMER

\*\* 18 MESSAGES HAVE BEEN SENT SUCCESSFULLY \*\*

- Updating sending window...

- Making sure all packets in the sending window have been sent.

|                                    |                       |           |           |
|------------------------------------|-----------------------|-----------|-----------|
| - Message in window, already sent: | ssssssssssssssssssss  | ack# = 18 | seq# = 18 |
| - Message in window, already sent: | ttttttttttttttttttt   | ack# = 19 | seq# = 19 |
| - Message in window, already sent: | uuuuuuuuuuuuuuuuuuu   | ack# = 20 | seq# = 20 |
| - Message in window, already sent: | vvvvvvvvvvvvvvvvvvv   | ack# = 21 | seq# = 21 |
| - Message in window, already sent: | wwwwwwwwwwwwwwwwwww   | ack# = 22 | seq# = 22 |
| - Message in window, already sent: | xxxxxxxxxxxxxxxxxxxxx | ack# = 23 | seq# = 23 |
| - Message in window, already sent: | yyyyyyyyyyyyyyyyyyyy  | ack# = 24 | seq# = 24 |
| - Message in window, already sent: | zzzzzzzzzzzzzzzzzzz   | ack# = 25 | seq# = 25 |

EVENT time: 403.983276, type: 2, fromlayer3 entity: 1

- B side received packet: xxxxxxxxxxxxxxxxxxxxx ack# = 23 seq# = 23

- Out-of-order packet received (seq# 23).

Expecting seq# 20. Buffering for later...

- B side sending ACK for packet 23: ACK ack# = 23 seq# = 23

EVENT time: 405.529999, type: 1, fromlayer5 entity: 0

- A side received message from upper layer: nnnnnnnnnnnnnnnnnnn

- Too many packets in-flight. Buffering to send later...

EVENT time: 405.697327, type: 0, timerinterrupt entity: 0

- TIMEOUT (packet 18) - timer restarted

packet 18 resent: sssssssssssssssssss ack# = 18 seq# = 18

EVENT time: 405.697327, type: 0, timerinterrupt entity: 0

- TIMEOUT (packet 20) - timer restarted

packet 20 resent: uuuuuuuuuuuuuuuuuuu ack# = 20 seq# = 20

EVENT time: 405.697327, type: 0, timerinterrupt entity: 0

- TIMEOUT (packet 21) - timer restarted

packet 21 resent: vvvvvvvvvvvvvvvvvvvv ack# = 21 seq# = 21

EVENT time: 405.697327, type: 0, timerinterrupt entity: 0

```
- TIMEOUT (packet 23) - timer restarted
packet 23 resent: xxxxxxxxxxxxxxxxxxxxxx ack# = 23 seq# = 23

EVENT time: 405.697327, type: 0, timerinterrupt entity: 0
- TIMEOUT (packet 24) - timer restarted
packet 24 resent: yyyyyyyyyyyyyyyyyyyy ack# = 24 seq# = 24

EVENT time: 405.697327, type: 0, timerinterrupt entity: 0
- TIMEOUT (packet 25) - timer restarted
packet 25 resent: zzzzzzzzzzzzzzzzzzzz ack# = 25 seq# = 25
 TOLAYER3: packet being lost.

EVENT time: 408.658447, type: 2, fromlayer3 entity: 0
- A side received from lower layer: ACK ack# = 23 seq# = 23
- A side received valid packet.
- New ACK received (packet 23) - STOPPED TIMER
** 18 MESSAGES HAVE BEEN SENT SUCCESSFULLY **
- Updating sending window...
- Making sure all packets in the sending
 window have been sent.
 - Message in window, already sent: ssssssssssssssssssss ack# = 18 seq# = 18
 - Message in window, already sent: tttttttttttttttttttt ack# = 19 seq# = 19
 - Message in window, already sent: uuuuuuuuuuuuuuuuuuuu ack# = 20 seq# = 20
 - Message in window, already sent: vvvvvvvvvvvvvvvvvvvv ack# = 21 seq# = 21
 - Message in window, already sent: wwwwwwwwwwwwwwwwwwww ack# = 22 seq# = 22
 - Message in window, already sent: xxxxxxxxxxxxxxxxxxxxxx ack# = 23 seq# = 23
 - Message in window, already sent: yyyyyyyyyyyyyyyyyyyy ack# = 24 seq# = 24
 - Message in window, already sent: zzzzzzzzzzzzzzzzzzzz ack# = 25 seq# = 25

EVENT time: 412.516144, type: 2, fromlayer3 entity: 1
- B side received packet: yyyyyyyyyyyyyyyyyyyy ack# = 24 seq# = 24
- Out-of-order packet received (seq# 24).
 Expecting seq# 20. Buffering for later...
- B side sending ACK for packet 24: ACK ack# = 24 seq# = 24
 TOLAYER3: packet being lost.

EVENT time: 417.890076, type: 2, fromlayer3 entity: 1
- B side received packet: zzzzzzzzzzzzzzzzzzzz ack# = 25 seq# = 25
- Out-of-order packet received (seq# 25).
 Expecting seq# 20. Buffering for later...
- B side sending ACK for packet 25: ACK ack# = 25 seq# = 25
 TOLAYER3: packet being corrupted
```







```
- TIMEOUT (packet 21) - timer restarted
packet 21 resent: vvvvvvvvvvvvvvvvvvvvvv ack# = 21 seq# = 21

EVENT time: 445.697327, type: 0, timerinterrupt entity: 0
- TIMEOUT (packet 24) - timer restarted
packet 24 resent: yyyyyyyyyyyyyyyyyyyyyyy ack# = 24 seq# = 24
 TOLAYER3: packet being corrupted

EVENT time: 445.697327, type: 0, timerinterrupt entity: 0
- TIMEOUT (packet 25) - timer restarted
packet 25 resent: zzzzzzzzzzzzzzzzzzzzz ack# = 25 seq# = 25
 TOLAYER3: packet being corrupted

EVENT time: 450.144012, type: 2, fromlayer3 entity: 1
- B side received packet: uuuuuuuuuuuuuuuuuuuuu ack# = 20 seq# = 20
- Previously ACKed packet received. Re-ACKing...
- B side sending ACK for packet 20: ACK ack# = 20 seq# = 20

EVENT time: 450.423462, type: 2, fromlayer3 entity: 0
- A side received from lower layer: ACK ack# = 18 seq# = 18
- A side received valid packet.
- New ACK received (packet 18) - STOPPED TIMER
** 20 MESSAGES HAVE BEEN SENT SUCCESSFULLY **
- Updating sending window...
- Making sure all packets in the sending
 window have been sent.
 - Message in window, already sent: uuuuuuuuuuuuuuuuuuuuu ack# = 20 seq# = 20
 - Message in window, already sent: vvvvvvvvvvvvvvvvvvvvvv ack# = 21 seq# = 21
 - Message in window, already sent: wwwwwwwwwwwwwwwwwwwwww ack# = 22 seq# = 22
 - Message in window, already sent: xxxxxxxxxxxxxxxxxxxxxxxx ack# = 23 seq# = 23
 - Message in window, already sent: yyyyyyyyyyyyyyyyyyyyyyy ack# = 24 seq# = 24
 - Message in window, already sent: zzzzzzzzzzzzzzzzzzzzz ack# = 25 seq# = 25
 - Sending NEW buffered message: aaaaaaaaaaaaaaaaaaaaaa ack# = 26 seq# = 26
- Started timer for packet 26
 - Sending NEW buffered message: bbbbbbbbbbbbbbbbbbbbbb ack# = 27 seq# = 27
- Started timer for packet 27
 TOLAYER3: packet being corrupted

EVENT time: 450.966705, type: 1, fromlayer5 entity: 0
- A side received message from upper layer: rrrrrrrrrrrrrrrrrrrr
- Too many packets in-flight. Buffering to send later...

EVENT time: 458.316711, type: 2, fromlayer3 entity: 1
```

- B side received packet: vvvvvvvvvvvvvvvvvvvv ack# = 21 seq# = 21

- In-order packet received (seq# 21)!

Sending all buffered packets in the window.

- B side sending packet to upper layer (seq# 21).
- B side sending packet to upper layer (seq# 22).
- B side sending packet to upper layer (seq# 23).
- B side sending packet to upper layer (seq# 24).
- B side sending packet to upper layer (seq# 25).

- Updating receiver buffer window.

Now expecting packet 26

- B side sending ACK for packet 21: ACK ack# = 21 seq# = 21

EVENT time: 458.786407, type: 2, fromlayer3 entity: 0

- A side received from lower layer: ACK ack# = 20 seq# = 20

- A side received valid packet.

- New ACK received (packet 20) - STOPPED TIMER

\*\* 21 MESSAGES HAVE BEEN SENT SUCCESSFULLY \*\*

- Updating sending window...

- Making sure all packets in the sending window have been sent.

- Message in window, already sent: vvvvvvvvvvvvvvvvvvvv ack# = 21 seq# = 21
- Message in window, already sent: wwwwwwwwwwwwwwwwwwwww ack# = 22 seq# = 22
- Message in window, already sent: xxxxxxxxxxxxxxxxxxxxxx ack# = 23 seq# = 23
- Message in window, already sent: yyyyyyyyyyyyyyyyyyyy ack# = 24 seq# = 24
- Message in window, already sent: zzzzzzzzzzzzzzzzzzzz ack# = 25 seq# = 25
- Message in window, already sent: aaaaaaaaaaaaaaaaaaaaaa ack# = 26 seq# = 26
- Message in window, already sent: bbbbbbbbbbbbbbbbbbbb ack# = 27 seq# = 27
- Sending NEW buffered message: cccccccccccccccccccc ack# = 28 seq# = 28

- Started timer for packet 28

TOLAYER3: packet being lost.

EVENT time: 458.897980, type: 1, fromlayer5 entity: 0

- A side received message from upper layer: ssssssssssssssssssss

- Too many packets in-flight. Buffering to send later...

EVENT time: 462.707520, type: 2, fromlayer3 entity: 0