

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

Enter the number of messages to simulate: 20  
Enter packet loss probability [enter 0.0 for no loss]:0.2  
Enter packet corruption probability [0.0 for no corruption]:0.2  
Enter average time between messages from sender's layer5 [ > 0.0]:10  
Enter TRACE:2

EVENT time: 18.705740, type: 1, fromlayer5 entity: 0  
[A] -----  
--> Put packet received from Layer 5 in buffer.  
--> Send packet with: seqnum: 93; acknum: 0; checksum: 2033  
=====

EVENT time: 22.062826, type: 2, fromlayer3 entity: 1  
[B] -----  
--> Receive packet with: seqnum: 93; acknum: 0; checksum: 2033  
--> Compute checksum: 2033  
--> Receive correct packet  
--> Send ACK  
--> Send packet with: seqnum: 243; acknum: 113; checksum: 356  
TOLAYER3: packet being lost  
=====

EVENT time: 33.705742, type: 0, timerinterrupt entity: 0  
[A] -----  
--> Timeout  
--> Send packet with: seqnum: 93; acknum: 0; checksum: 2033  
TOLAYER3: packet being corrupted  
=====

EVENT time: 35.124840, type: 1, fromlayer5 entity: 0  
[A] -----  
--> Put packet received from Layer 5 in buffer.  
--> Send packet with: seqnum: 113; acknum: 0; checksum: 2073  
=====

EVENT time: 35.855766, type: 2, fromlayer3 entity: 1  
[B] -----  
--> Receive packet with: seqnum: 93; acknum: 0; checksum: 2033  
--> Compute checksum: 2026  
--> Receive OUT-OF-ORDER packet  
--> Send Duplicate ACK  
--> Send packet with: seqnum: 243; acknum: 113; checksum: 356  
TOLAYER3: packet being lost  
=====

EVENT time: 37.154984, type: 2, fromlayer3 entity: 1  
[B] -----  
--> Receive packet with: seqnum: 113; acknum: 0; checksum: 2073  
--> Compute checksum: 2073  
--> Receive correct packet

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--> Send ACK
--> Send packet with: seqnum: 263; acknum: 133; checksum: 396
=====

EVENT time: 46.583408,  type: 2, fromlayer3  entity: 0
[A] -----
--> Receive packet with: seqnum: 263; acknum: 133; checksum: 396
--> Compute checksum: 396
--> Receive correct packet
**** Buffer is empty. NO messages to send to Layer 3.
=====

EVENT time: 53.446037,  type: 1, fromlayer5  entity: 0
[A] -----
--> Put packet received from Layer 5 in buffer.
--> Send packet with: seqnum: 133; acknum: 283; checksum: 2396
=====

EVENT time: 57.648678,  type: 2, fromlayer3  entity: 1
[B] -----
--> Receive packet with: seqnum: 133; acknum: 283; checksum: 2396
--> Compute checksum: 2396
--> Receive correct packet
--> Send ACK
--> Send packet with: seqnum: 283; acknum: 153; checksum: 436
=====

EVENT time: 60.378918,  type: 2, fromlayer3  entity: 0
[A] -----
--> Receive packet with: seqnum: 283; acknum: 153; checksum: 436
--> Compute checksum: 436
--> Receive correct packet
**** Buffer is empty. NO messages to send to Layer 3.
=====

EVENT time: 65.220291,  type: 1, fromlayer5  entity: 0
[A] -----
--> Put packet received from Layer 5 in buffer.
--> Send packet with: seqnum: 153; acknum: 303; checksum: 2456
      TOLAYER3: packet being lost
=====

EVENT time: 72.028297,  type: 1, fromlayer5  entity: 0
[A] -----
--> Put packet received from Layer 5 in buffer.
--> Send packet with: seqnum: 173; acknum: 303; checksum: 2496
      TOLAYER3: packet being corrupted
=====

EVENT time: 73.812218,  type: 2, fromlayer3  entity: 1
[B] -----
--> Receive packet with: seqnum: 173; acknum: 999999; checksum: 2496

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--> Compute checksum: 1002192
--> Receive OUT-OF-ORDER packet
--> Send Duplicate ACK
--> Send packet with: seqnum: 283; acknum: 153; checksum: 436
=====

EVENT time: 77.390305,  type: 1, fromlayer5  entity: 0
[A] -----
--> Put packet received from Layer 5 in buffer.
--> Send packet with: seqnum: 193; acknum: 303; checksum: 2536
    TOLAYER3: packet being corrupted
=====

EVENT time: 77.970802,  type: 2, fromlayer3  entity: 0
[A] -----
--> Receive packet with: seqnum: 283; acknum: 153; checksum: 436
--> Compute checksum: 436
--> Receive correct packet
--> Receive the same packet again
=====

EVENT time: 78.458374,  type: 1, fromlayer5  entity: 0
[A] -----
--> Put packet received from Layer 5 in buffer.
--> Send packet with: seqnum: 213; acknum: 303; checksum: 2576
    TOLAYER3: packet being lost
=====

EVENT time: 80.220291,  type: 0, timerinterrupt  entity: 0
[A] -----
--> Timeout
--> Send packet with: seqnum: 153; acknum: 303; checksum: 2456
--> Send packet with: seqnum: 173; acknum: 303; checksum: 2496
    TOLAYER3: packet being lost
--> Send packet with: seqnum: 193; acknum: 303; checksum: 2536
--> Send packet with: seqnum: 213; acknum: 303; checksum: 2576
    TOLAYER3: packet being lost
=====

EVENT time: 83.228271,  type: 2, fromlayer3  entity: 1
[B] -----
--> Receive packet with: seqnum: 193; acknum: 303; checksum: 2536
--> Compute checksum: 2524
--> Receive OUT-OF-ORDER packet
--> Send Duplicate ACK
--> Send packet with: seqnum: 283; acknum: 153; checksum: 436
    TOLAYER3: packet being lost
=====

EVENT time: 84.286736,  type: 2, fromlayer3  entity: 1
[B] -----
--> Receive packet with: seqnum: 153; acknum: 303; checksum: 2456

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--> Compute checksum: 2456
--> Receive correct packet
--> Send ACK
--> Send packet with: seqnum: 303; acknum: 173; checksum: 476
      TOLAYER3: packet being corrupted
=====

EVENT time: 89.560837,  type: 2, fromlayer3  entity: 1
[B] -----
--> Receive packet with: seqnum: 193; acknum: 303; checksum: 2536
--> Compute checksum: 2536
--> Receive OUT-OF-ORDER packet
--> Send Duplicate ACK
--> Send packet with: seqnum: 303; acknum: 173; checksum: 476
=====

EVENT time: 90.536674,  type: 2, fromlayer3  entity: 0
[A] -----
--> Receive packet with: seqnum: 303; acknum: 173; checksum: 476
--> Compute checksum: 566
--> Receive CORRUPTED packet
=====

EVENT time: 95.220291,  type: 0, timerinterrupt  entity: 0
[A] -----
--> Timeout
--> Send packet with: seqnum: 153; acknum: 303; checksum: 2456
--> Send packet with: seqnum: 173; acknum: 303; checksum: 2496
--> Send packet with: seqnum: 193; acknum: 303; checksum: 2536
      TOLAYER3: packet being lost
--> Send packet with: seqnum: 213; acknum: 303; checksum: 2576
=====

EVENT time: 95.355957,  type: 2, fromlayer3  entity: 0
[A] -----
--> Receive packet with: seqnum: 303; acknum: 173; checksum: 476
--> Compute checksum: 476
--> Receive correct packet
=====

EVENT time: 97.923370,  type: 1, fromlayer5  entity: 0
[A] -----
--> Put packet received from Layer 5 in buffer.
--> Send packet with: seqnum: 233; acknum: 323; checksum: 2636
      TOLAYER3: packet being lost
=====

EVENT time: 100.751297,  type: 1, fromlayer5  entity: 0
[A] -----
--> Put packet received from Layer 5 in buffer.
--> Send packet with: seqnum: 253; acknum: 323; checksum: 2676
      TOLAYER3: packet being lost

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EVENT time: 102.925453,  type: 1, fromlayer5  entity: 0
[A] -----
--> Put packet received from Layer 5 in buffer.
--> Send packet with: seqnum: 273; acknum: 323; checksum: 2716
    TOLAYER3: packet being lost
=====

EVENT time: 104.616371,  type: 2, fromlayer3  entity: 1
[B] -----
--> Receive packet with: seqnum: 153; acknum: 303; checksum: 2456
--> Compute checksum: 2456
--> Receive OUT-OF-ORDER packet
--> Send Duplicate ACK
--> Send packet with: seqnum: 303; acknum: 173; checksum: 476
    TOLAYER3: packet being lost
=====

EVENT time: 107.141602,  type: 1, fromlayer5  entity: 0
[A] -----
--> Put packet received from Layer 5 in buffer.
--> Send packet with: seqnum: 293; acknum: 323; checksum: 2756
    TOLAYER3: packet being lost
=====

EVENT time: 110.355957,  type: 0, timerinterrupt  entity: 0
[A] -----
--> Timeout
--> Send packet with: seqnum: 173; acknum: 303; checksum: 2496
--> Send packet with: seqnum: 193; acknum: 303; checksum: 2536
--> Send packet with: seqnum: 213; acknum: 303; checksum: 2576
    TOLAYER3: packet being lost
--> Send packet with: seqnum: 233; acknum: 323; checksum: 2636
--> Send packet with: seqnum: 253; acknum: 323; checksum: 2676
    TOLAYER3: packet being corrupted
--> Send packet with: seqnum: 273; acknum: 323; checksum: 2716
    TOLAYER3: packet being lost
--> Send packet with: seqnum: 293; acknum: 323; checksum: 2756
=====

EVENT time: 113.849136,  type: 2, fromlayer3  entity: 1
[B] -----
--> Receive packet with: seqnum: 173; acknum: 303; checksum: 2496
--> Compute checksum: 2496
--> Receive correct packet
--> Send ACK
--> Send packet with: seqnum: 323; acknum: 193; checksum: 516
=====

EVENT time: 118.241600,  type: 2, fromlayer3  entity: 0
[A] -----

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--> Receive packet with: seqnum: 323; acknum: 193; checksum: 516
--> Compute checksum: 516
--> Receive correct packet
=====

EVENT time: 122.125916,  type: 1, fromlayer5  entity: 0
[A] -----
--> Put packet received from Layer 5 in buffer.
--> Send packet with: seqnum: 313; acknum: 343; checksum: 2816
=====

EVENT time: 123.240555,  type: 2, fromlayer3  entity: 1
[B] -----
--> Receive packet with: seqnum: 213; acknum: 303; checksum: 2576
--> Compute checksum: 2576
--> Receive OUT-OF-ORDER packet
--> Send Duplicate ACK
--> Send packet with: seqnum: 323; acknum: 193; checksum: 516
=====

EVENT time: 125.985794,  type: 2, fromlayer3  entity: 0
[A] -----
--> Receive packet with: seqnum: 323; acknum: 193; checksum: 516
--> Compute checksum: 516
--> Receive correct packet
--> Receive the same packet again
=====

EVENT time: 126.257599,  type: 2, fromlayer3  entity: 1
[B] -----
--> Receive packet with: seqnum: 173; acknum: 303; checksum: 2496
--> Compute checksum: 2496
--> Receive OUT-OF-ORDER packet
--> Send Duplicate ACK
--> Send packet with: seqnum: 323; acknum: 193; checksum: 516
=====

EVENT time: 128.166458,  type: 1, fromlayer5  entity: 0
[A] -----
--> Put packet received from Layer 5 in buffer.
--> Send packet with: seqnum: 333; acknum: 343; checksum: 2856
      TOLAYER3: packet being lost
=====

EVENT time: 131.011658,  type: 2, fromlayer3  entity: 1
[B] -----
--> Receive packet with: seqnum: 193; acknum: 303; checksum: 2536
--> Compute checksum: 2536
--> Receive correct packet
--> Send ACK
--> Send packet with: seqnum: 343; acknum: 213; checksum: 556
=====

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EVENT time: 133.241608,  type: 0, timerinterrupt  entity: 0
[A] -----
--> Timeout
--> Send packet with: seqnum: 193; acknum: 303; checksum: 2536
    TOLAYER3: packet being corrupted
--> Send packet with: seqnum: 213; acknum: 303; checksum: 2576
    TOLAYER3: packet being corrupted
--> Send packet with: seqnum: 233; acknum: 323; checksum: 2636
--> Send packet with: seqnum: 253; acknum: 323; checksum: 2676
    TOLAYER3: packet being corrupted
--> Send packet with: seqnum: 273; acknum: 323; checksum: 2716
--> Send packet with: seqnum: 293; acknum: 323; checksum: 2756
    TOLAYER3: packet being corrupted
--> Send packet with: seqnum: 313; acknum: 343; checksum: 2816
    TOLAYER3: packet being corrupted
--> Send packet with: seqnum: 333; acknum: 343; checksum: 2856
=====
```

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EVENT time: 134.387085,  type: 1, fromlayer5  entity: 0
[A] -----
--> Put packet received from Layer 5 in buffer.
**** cwnd = 8 is full. NO messages sending to Layer 3.
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EVENT time: 135.745773,  type: 2, fromlayer3  entity: 0
[A] -----
--> Receive packet with: seqnum: 323; acknum: 193; checksum: 516
--> Compute checksum: 516
--> Receive correct packet
--> Receive the same packet again
=====
```

```
EVENT time: 136.950333,  type: 1, fromlayer5  entity: 0
[A] -----
--> Put packet received from Layer 5 in buffer.
**** cwnd = 8 is full. NO messages sending to Layer 3.
=====
```

```
EVENT time: 136.995758,  type: 2, fromlayer3  entity: 1
[B] -----
--> Receive packet with: seqnum: 233; acknum: 323; checksum: 2636
--> Compute checksum: 2636
--> Receive OUT-OF-ORDER packet
--> Send Duplicate ACK
--> Send packet with: seqnum: 343; acknum: 213; checksum: 556
    TOLAYER3: packet being lost
=====
```

```
EVENT time: 144.777496,  type: 2, fromlayer3  entity: 0
[A] -----
--> Receive packet with: seqnum: 343; acknum: 213; checksum: 556
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--> Compute checksum: 556
--> Receive correct packet
--> Send packet with: seqnum: 353; acknum: 363; checksum: 2916
      TOLAYER3: packet being lost
=====

EVENT time: 144.857697,  type: 2, fromlayer3  entity: 1
[B] -----
--> Receive packet with: seqnum: 999999; acknum: 323; checksum: 2676
--> Compute checksum: 1002422
--> Receive OUT-OF-ORDER packet
--> Send Duplicate ACK
--> Send packet with: seqnum: 343; acknum: 213; checksum: 556
=====

EVENT time: 148.770462,  type: 2, fromlayer3  entity: 0
[A] -----
--> Receive packet with: seqnum: 343; acknum: 213; checksum: 556
--> Compute checksum: 556
--> Receive correct packet
--> Receive the same packet again
=====

EVENT time: 152.815552,  type: 2, fromlayer3  entity: 1
[B] -----
--> Receive packet with: seqnum: 293; acknum: 323; checksum: 2756
--> Compute checksum: 2756
--> Receive OUT-OF-ORDER packet
--> Send Duplicate ACK
--> Send packet with: seqnum: 343; acknum: 213; checksum: 556
=====

EVENT time: 153.074020,  type: 1, fromlayer5  entity: 0
[A] -----
--> Put packet received from Layer 5 in buffer.
**** cwnd = 8 is full. NO messages sending to Layer 3.
=====

EVENT time: 157.353989,  type: 2, fromlayer3  entity: 0
[A] -----
--> Receive packet with: seqnum: 343; acknum: 213; checksum: 556
--> Compute checksum: 556
--> Receive correct packet
--> Receive the same packet again
=====

EVENT time: 159.777496,  type: 0, timerinterrupt  entity: 0
[A] -----
--> Timeout
--> Send packet with: seqnum: 213; acknum: 303; checksum: 2576
--> Send packet with: seqnum: 233; acknum: 323; checksum: 2636
--> Send packet with: seqnum: 253; acknum: 323; checksum: 2676

```



```
--> Send packet with: seqnum: 273; acknum: 323; checksum: 2716
      TOLAYER3: packet being corrupted
--> Send packet with: seqnum: 293; acknum: 323; checksum: 2756
--> Send packet with: seqnum: 313; acknum: 343; checksum: 2816
--> Send packet with: seqnum: 333; acknum: 343; checksum: 2856
--> Send packet with: seqnum: 353; acknum: 363; checksum: 2916
=====
```

```
EVENT time: 162.663528,  type: 2, fromlayer3  entity: 1
[B] -----
--> Receive packet with: seqnum: 313; acknum: 343; checksum: 2816
--> Compute checksum: 2816
--> Receive OUT-OF-ORDER packet
--> Send Duplicate ACK
--> Send packet with: seqnum: 343; acknum: 213; checksum: 556
=====
```

```
EVENT time: 164.177628,  type: 2, fromlayer3  entity: 1
[B] -----
--> Receive packet with: seqnum: 193; acknum: 303; checksum: 2536
--> Compute checksum: 2524
--> Receive OUT-OF-ORDER packet
--> Send Duplicate ACK
--> Send packet with: seqnum: 343; acknum: 213; checksum: 556
      TOLAYER3: packet being corrupted
=====
```

```
EVENT time: 165.275650,  type: 2, fromlayer3  entity: 1
[B] -----
--> Receive packet with: seqnum: 213; acknum: 303; checksum: 2576
--> Compute checksum: 2563
--> Receive CORRUPTED packet
--> Send Duplicate ACK
--> Send packet with: seqnum: 343; acknum: 213; checksum: 556
=====
```

```
EVENT time: 166.771271,  type: 2, fromlayer3  entity: 0
[A] -----
--> Receive packet with: seqnum: 343; acknum: 213; checksum: 556
--> Compute checksum: 556
--> Receive correct packet
--> Receive the same packet again
=====
```

```
EVENT time: 167.425034,  type: 2, fromlayer3  entity: 1
[B] -----
--> Receive packet with: seqnum: 233; acknum: 323; checksum: 2636
--> Compute checksum: 2636
--> Receive OUT-OF-ORDER packet
--> Send Duplicate ACK
--> Send packet with: seqnum: 343; acknum: 213; checksum: 556
=====
```

```

EVENT time: 168.509171,  type: 1, fromlayer5  entity: 0
[A] -----
--> Put packet received from Layer 5 in buffer.
**** cwnd = 8 is full. NO messages sending to Layer 3.
=====

EVENT time: 169.008896,  type: 2, fromlayer3  entity: 1
[B] -----
--> Receive packet with: seqnum: 253; acknum: 323; checksum: 2676
--> Compute checksum: 2661
--> Receive OUT-OF-ORDER packet
--> Send Duplicate ACK
--> Send packet with: seqnum: 343; acknum: 213; checksum: 556
    TOLAYER3: packet being lost
=====

EVENT time: 174.052719,  type: 2, fromlayer3  entity: 0
[A] -----
--> Receive packet with: seqnum: 343; acknum: 213; checksum: 556
--> Compute checksum: 646
--> Receive CORRUPTED packet
=====

EVENT time: 174.256027,  type: 2, fromlayer3  entity: 1
[B] -----
--> Receive packet with: seqnum: 273; acknum: 323; checksum: 2716
--> Compute checksum: 2716
--> Receive OUT-OF-ORDER packet
--> Send Duplicate ACK
--> Send packet with: seqnum: 343; acknum: 213; checksum: 556
    TOLAYER3: packet being corrupted
=====

EVENT time: 174.777496,  type: 0, timerinterrupt  entity: 0
[A] -----
--> Timeout
--> Send packet with: seqnum: 213; acknum: 303; checksum: 2576
--> Send packet with: seqnum: 233; acknum: 323; checksum: 2636
--> Send packet with: seqnum: 253; acknum: 323; checksum: 2676
    TOLAYER3: packet being lost
--> Send packet with: seqnum: 273; acknum: 323; checksum: 2716
    TOLAYER3: packet being corrupted
--> Send packet with: seqnum: 293; acknum: 323; checksum: 2756
--> Send packet with: seqnum: 313; acknum: 343; checksum: 2816
--> Send packet with: seqnum: 333; acknum: 343; checksum: 2856
    TOLAYER3: packet being corrupted
--> Send packet with: seqnum: 353; acknum: 363; checksum: 2916
    TOLAYER3: packet being corrupted
=====

EVENT time: 180.558105,  type: 2, fromlayer3  entity: 0

```

```
[A] -----
--> Receive packet with: seqnum: 343; acknum: 213; checksum: 556
--> Compute checksum: 556
--> Receive correct packet
--> Receive the same packet again
=====
```

EVENT time: 181.963730, type: 2, fromlayer3 entity: 0

```
[A] -----
--> Receive packet with: seqnum: 343; acknum: 213; checksum: 556
--> Compute checksum: 556
--> Receive correct packet
--> Receive the same packet again
=====
```

EVENT time: 182.714462, type: 1, fromlayer5 entity: 0

```
[A] -----
--> Put packet received from Layer 5 in buffer.
**** cwnd = 8 is full. NO messages sending to Layer 3.
=====
```

EVENT time: 183.199768, type: 2, fromlayer3 entity: 1

```
[B] -----
--> Receive packet with: seqnum: 293; acknum: 323; checksum: 2756
--> Compute checksum: 2739
--> Receive OUT-OF-ORDER packet
--> Send Duplicate ACK
--> Send packet with: seqnum: 343; acknum: 213; checksum: 556
      TOLAYER3: packet being lost
=====
```

EVENT time: 184.544174, type: 1, fromlayer5 entity: 0

```
[A] -----
--> Put packet received from Layer 5 in buffer.
**** cwnd = 8 is full. NO messages sending to Layer 3.
=====
```

EVENT time: 189.777496, type: 0, timerinterrupt entity: 0

```
[A] -----
--> Timeout
--> Send packet with: seqnum: 213; acknum: 303; checksum: 2576
      TOLAYER3: packet being lost
--> Send packet with: seqnum: 233; acknum: 323; checksum: 2636
--> Send packet with: seqnum: 253; acknum: 323; checksum: 2676
--> Send packet with: seqnum: 273; acknum: 323; checksum: 2716
      TOLAYER3: packet being lost
--> Send packet with: seqnum: 293; acknum: 323; checksum: 2756
      TOLAYER3: packet being corrupted
--> Send packet with: seqnum: 313; acknum: 343; checksum: 2816
      TOLAYER3: packet being lost
--> Send packet with: seqnum: 333; acknum: 343; checksum: 2856
--> Send packet with: seqnum: 353; acknum: 363; checksum: 2916
```

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=====
EVENT time: 191.677872,  type: 2, fromlayer3  entity: 0
[A] -----
--> Receive packet with: seqnum: 343; acknum: 213; checksum: 556
--> Compute checksum: 646
--> Receive CORRUPTED packet
=====

EVENT time: 192.522217,  type: 2, fromlayer3  entity: 1
[B] -----
--> Receive packet with: seqnum: 313; acknum: 343; checksum: 2816
--> Compute checksum: 2798
--> Receive OUT-OF-ORDER packet
--> Send Duplicate ACK
--> Send packet with: seqnum: 343; acknum: 213; checksum: 556
      TOLAYER3: packet being lost
=====

EVENT time: 195.518600,  type: 2, fromlayer3  entity: 1
[B] -----
--> Receive packet with: seqnum: 333; acknum: 343; checksum: 2856
--> Compute checksum: 2856
--> Receive OUT-OF-ORDER packet
--> Send Duplicate ACK
--> Send packet with: seqnum: 343; acknum: 213; checksum: 556
      TOLAYER3: packet being corrupted
=====

EVENT time: 202.312576,  type: 1, fromlayer5  entity: 0
[A] -----
--> Put packet received from Layer 5 in buffer.
**** cwnd = 8 is full. NO messages sending to Layer 3.
=====

EVENT time: 202.692856,  type: 2, fromlayer3  entity: 0
  Simulator terminated at time 202.692856
  after sending 20 msgs from layer5
base: 6; nextseg: 14; receiver: 5

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