

Relazione terzo assegnamento

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1 Strategia risolutiva utilizzata

1.0.1 Premessa

La consegna dell'esercizio richiedeva di implementare una soluzione ibrida di due protocolli, selective repeat e go-back-n. Tali protocolli richiedono che entrambi i lati di comunicazione (mandante e ricevitore) abbiano ciascuno una propria finestra, rispettivamente di pacchetti trasmessi (mandante) e ricevuti (ricevitore) per verificarne il corretto invio e la corretta ricezione anche non in ordine.

Ogni pacchetto può essere inviato e ricevuto solo se presenta un numero di sequenza che è contenuto all'interno della finestra di invio e di ricezione.

Il numero di sequenza è limitato dalla grandezza delle finestre di invio e ricezione, in particolare il numero massimo di sequenza ha valore pari a due volte la dimensione di una delle due finestre. Raggiunto il massimo numero di sequenza viene riportato al numero di sequenza iniziale.

1.0.2 Strutture utilizzate

Per separare i costrutti utilizzati da i due lati (mandante, ricevitore), sono state utilizzate due strutture "senderSide" e "receiverSide" contenenti i buffer e le variabili utili a descrivere le informazioni necessarie per l'implementazione del protocollo selective repeat/go-back-n.

Tali costrutti vengono inizializzati al momento della chiamata delle funzioni A_init() e B_init().

Per fare in modo che i messaggi non vengano persi al momento della chiamata della funzione A_output(), abbiamo utilizzato un buffer "msgBuffer" nel quale vengono inseriti i messaggi al momento della chiamata della funzione stessa.

Al momento dell'invio del pacchetto il messaggio verrà dunque preso da tale buffer utilizzando la variabile "nextMsg" (che memorizza l'indice del primo messaggio del buffer non ancora inviato) ed inserito come pacchetto nel buffer di pacchetti inviati "packetBuffer".

Tale "packetBuffer" permette inoltre di verificare la corretta ricezione dei pacchetti precedentemente inviati, tramite la finestra di invio dei messaggi e i numeri di sequenza.

Per permettere la ricezione di pacchetti fuori ordine tramite la funzione `B_input()`, è stato necessario utilizzare un buffer di pacchetti ricevuti "arrived_packets" anche a lato ricevitore.

1.0.3 Descrizione delle routine

A_init():

provvede all'inizializzazione dei costrutti della struttura `senderSide`.

B_init():

provvede all'inizializzazione dei costrutti della struttura `receiverSide`.

A_output(message):

prende come argomento il messaggio che si vuole inviare e lo aggiunge al buffer di messaggi. Successivamente, solo se il prossimo numero di sequenza da assegnare è all'interno della finestra, prende dal buffer il primo messaggio non ancora inviato e crea un nuovo pacchetto inizializzandone il sequence number, il payload e il valore di checksum. Una volta creato il pacchetto esso viene inserito nel buffer di messaggi inviati e vengono richiamate le funzioni `tolayer3()` e `starttimer()`.

Considerando il fatto che, nel progetto è presente un singolo timer, si è scelto di poter utilizzare la funzione `starttimer()` solo se il pacchetto da inviare presenta il numero di sequenza corrispondente al numero della base della finestra.

Come da specifiche, se il buffer dei messaggi raggiunge una dimensione uguale a cinquanta elementi ancora da inviare, il processo termina.

A_input(packet):

prende come argomento il pacchetto ricevuto e viene chiamata dal livello 3 al momento della ricezione. Procede al controllo di checksum e verifica che tale pacchetto abbia il "numero di acknowledge" con valore all'interno della finestra di invio dei pacchetti. Se tutti i controlli sono andati a buon fine, accetta l'acknowledge per il pacchetto ricevuto, altrimenti lo scarta.

Nel caso in cui vengano superati i controlli precedentemente descritti e il numero di acknowledge del pacchetto sia successivo del numero di sequenza corrispondente alla base della finestra, significa che sono stati correttamente ricevuti tutti

i pacchetti con numero di sequenza che va dalla base della finestra al numero di acknowledge del pacchetto ricevuto.

Ogni volta in cui viene ricevuto un acknowledge per un pacchetto base (o un acknowledge comulativo) la finestra viene fatta scorrere di tante posizioni quanti pacchetti sono stati correttamente ricevuti.

Dopo che la finestra viene fatta scorrere, viene controllato il "msgBuffer" per verificare se ci sono messaggi presenti ma non ancora inviati. In tal caso vengono preparati e successivamente inviati tanti pacchetti quante posizioni libere presenta la finestra.

A_timerinterrupt():

viene richiamata al momento in cui il countdown timer scade. Procede al ri-invio di tutti i pacchetti presenti nella finestra che non hanno ancora ricevuto l'acknowledge, dopodichè chiama la funzione starttimer() per fare ripartire il countdown timer.

B_input(packet):

prende come argomento il pacchetto ricevuto e viene chiamata dal livello 3 al momento della ricezione dello stesso. Effettua il controllo sul checksum del pacchetto e nel caso in cui esso sia corrotto, spedisce un ack per l'ultimo pacchetto del quale è stato inviato l'acknowledge (ack duplicato).

Nel caso in cui il pacchetto non sia corrotto, è stato necessario effettuare più controlli riguardo al numero di sequenza poichè, essendo limitato, potrebbe ritornare al numero di sequenza iniziale prima di aver ricevuto correttamente tutti i numeri di sequenza precedenti.

Quando viene ricevuto un pacchetto con numero di sequenza successivo rispetto a quello atteso, tale pacchetto viene salvato nel buffer dei pacchetti ricevuti "arrived_packets" e spedisce un ack per l'ultimo pacchetto del quale è stato inviato l'acknowledge (ack duplicato).

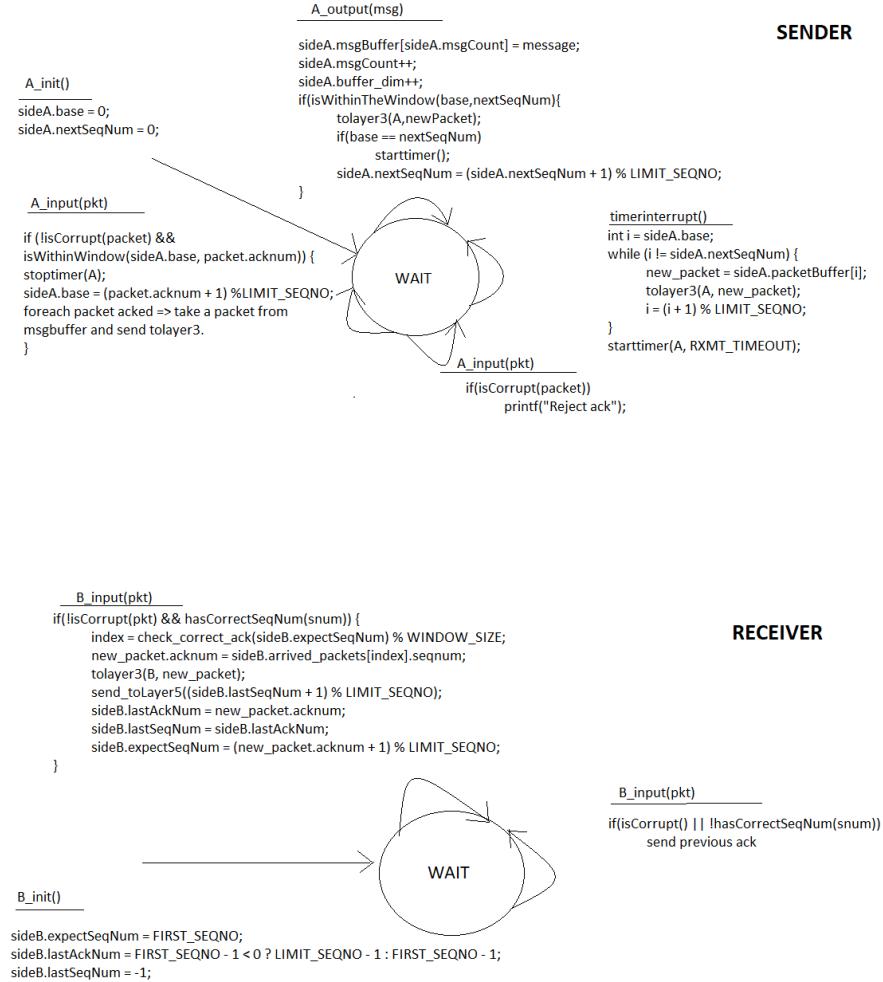
Nel caso in cui venga ricevuto un pacchetto con il numero di sequenza atteso, si calcola il numero di acknowledge corretto da inviare tramite la funzione "check_correct_ack()".

Tale funzione, partendo dal numero di sequenza atteso, procede alla ricerca dei numeri di sequenza successivi nel buffer dei pacchetti ricevuti fino a quando non trova più un numero di sequenza successivo.

Calcolato il numero di acknowledge da inviare, viene creato il pacchetto e spedito al mandante tramite la funzione "tolayer3()". Ogni volta che un pacchetto di acknowledge viene inviato, la funzione "send_toLayer5()" viene richiamata. Tale funzione manda al layer5 solo il messaggio per i pacchetti non ancora inviati allo stesso livello, ma dei quali è stato inviato l'acknowledge al mandante.

1.0.4 Modello a stati finiti

Descrizione del comportamento dei lati mandante e ricevitore attraverso una macchina a stati finiti.



1.0.5 Test comportamentali

Caso 1:

La probabilità di corruzione e di perdita dei pacchetti è nulla.

```

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

Enter number of messages to simulate: 22
Enter packet loss probability [enter 0.0 for no loss]:0.0
Enter packet corruption probability [0.0 for no corruption]:0.0
Enter average time between messages from sender's layer5 [> 0.0]:10
Enter window size [>0]:8
Enter retransmission timeout [> 0.0]:20
Enter trace level:2
Enter random seed: [>0]:2233

EVENT time: 9.181188, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
DATA:aaaaaaaaaaaaaaaaaaaa
A: Sending new DATA to B...
SEQ, ACK: 0, 0
PAYLOAD:aaaaaaaaaaaaaaaaaaaa

EVENT time: 11.710562, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
DATA:bbbbbbbbbbbbbbbbbbb
A: Sending new DATA to B...
SEQ, ACK: 1, 0
PAYLOAD:bbbbbbbbbbbbbbbbbbb

EVENT time: 14.562120, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 0, 0
PAYLOAD:aaaaaaaaaaaaaaaaaaaa
EXPECTED SNUM: 0
B: Sending ACK to A...
SEQ, ACK: 0, 0

EVENT time: 17.071139, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 1, 0
PAYLOAD:bbbbbbbbbbbbbbbbbbb
EXPECTED SNUM: 1
B: Sending ACK to A...
SEQ, ACK: 0, 1

EVENT time: 23.490646, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
SEQ, ACK: 0, 0
A: Accepting ACK from B...

EVENT time: 29.176305, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
DATA:cccccccccccccccccc
A: Sending new DATA to B...
SEQ, ACK: 2, 0
PAYLOAD:cccccccccccccccccc

EVENT time: 31.216773, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
DATA:dddddddddBBBBBBBBBB
A: Sending new DATA to B...
SEQ, ACK: 3, 0
PAYLOAD:dddddddddBBBBBBBBBB

```

```
EVENT time: 31.881375, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 1
A: Accepting ACK from B...

EVENT time: 34.024934, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 2, 0
    PAYLOAD: ccccccccccccccccccc
    EXPECTED SNUM: 2
B: Sending ACK to A...
    SEQ, ACK: 0, 2

EVENT time: 40.173559, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 2
A: Accepting ACK from B...

EVENT time: 42.254982, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 3, 0
    PAYLOAD: ddddddddddcccccccc
    EXPECTED SNUM: 3
B: Sending ACK to A...
    SEQ, ACK: 0, 3

EVENT time: 44.601947, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 3
A: Accepting ACK from B...

EVENT time: 46.134831, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: eeeeeeeeeeeeeeee
A: Sending new DATA to B...
    SEQ, ACK: 4, 0
    PAYLOAD: eeeeeeeeeeeeeeee

EVENT time: 50.192419, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 4, 0
    PAYLOAD: eeeeeeeeeeeeeeee
    EXPECTED SNUM: 4
B: Sending ACK to A...
    SEQ, ACK: 0, 4

EVENT time: 54.393658, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 4
A: Accepting ACK from B...

EVENT time: 55.994751, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: ffffffffffffffff
A: Sending new DATA to B...
    SEQ, ACK: 5, 0
    PAYLOAD: ffffffffffffffff
```

```
EVENT time: 58.933073, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
  DATA: ggggggggggggggggggggggg
A: Sending new DATA to B...
  SEQ, ACK: 6, 0
  PAYLOAD: ggggggggggggggggggggggg

EVENT time: 62.311747, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
  SEQ, ACK: 5, 0
  PAYLOAD: fffffffffffffffffff
  EXPECTED SNUM: 5
B: Sending ACK to A...
  SEQ, ACK: 0, 5

EVENT time: 67.851985, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
  SEQ, ACK: 6, 0
  PAYLOAD: ggggggggggggggggggggg
  EXPECTED SNUM: 6
B: Sending ACK to A...
  SEQ, ACK: 0, 6

EVENT time: 70.002075, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
  SEQ, ACK: 0, 5
A: Accepting ACK from B...

EVENT time: 73.939360, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
  SEQ, ACK: 0, 6
A: Accepting ACK from B...

EVENT time: 76.968902, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
  DATA: hhhhhhhhhhhhhhhhhhh
A: Sending new DATA to B...
  SEQ, ACK: 7, 0
  PAYLOAD: hhhhhhhhhhhhhhhhhhh

EVENT time: 78.770104, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
  DATA: iiiiiiiiiiiiiiii
A: Sending new DATA to B...
  SEQ, ACK: 8, 0
  PAYLOAD: iiiiiiiiiiiiiiii

EVENT time: 80.980621, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
  SEQ, ACK: 7, 0
  PAYLOAD: hhhhhhhhhhhhhhhhhhh
  EXPECTED SNUM: 7
B: Sending ACK to A...
  SEQ, ACK: 0, 7
```

```
EVENT time: 86.709281, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 8, 0
    PAYLOAD: iiiiiiiiiiiiiiii
    EXPECTED SNUM: 8
B: Sending ACK to A...
    SEQ, ACK: 0, 8

EVENT time: 86.738395, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 7
A: Accepting ACK from B...

EVENT time: 91.162450, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: jjjjjjjjjjjjjjjjjj
A: Sending new DATA to B...
    SEQ, ACK: 9, 0
    PAYLOAD: jjjjjjjjjjjjjjjjjj

EVENT time: 91.267861, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 8
A: Accepting ACK from B...

EVENT time: 94.589068, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: kkkkkkkkkkkkkkkkk
A: Sending new DATA to B...
    SEQ, ACK: 10, 0
    PAYLOAD: kkkkkkkkkkkkkkkkk

EVENT time: 95.806452, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 9, 0
    PAYLOAD: jjjjjjjjjjjjjjjj
    EXPECTED SNUM: 9
B: Sending ACK to A...
    SEQ, ACK: 0, 9

EVENT time: 102.116153, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: lllllllllllllllllll
A: Sending new DATA to B...
    SEQ, ACK: 11, 0
    PAYLOAD: lllllllllllllllllll

EVENT time: 103.165258, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 10, 0
    PAYLOAD: kkkkkkkkkkkkkkkkk
    EXPECTED SNUM: 10
B: Sending ACK to A...
    SEQ, ACK: 0, 10
```

```
EVENT time: 104.945585, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 11, 0
    PAYLOAD: lllllllllllllllllllllllll
    EXPECTED SNUM: 11
B: Sending ACK to A...
    SEQ, ACK: 0, 11

EVENT time: 105.312601, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 9
A: Accepting ACK from B...

EVENT time: 110.404035, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 10
A: Accepting ACK from B...

EVENT time: 112.691397, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 11
A: Accepting ACK from B...

EVENT time: 112.803125, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: mmmmmmmmmmmmmmmmmmmmmmm
A: Sending new DATA to B...
    SEQ, ACK: 12, 0
    PAYLOAD: mmmmmmmmmmmmmmmmmmmmmmm

EVENT time: 114.538133, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 12, 0
    PAYLOAD: mmmmmmmmmmmmmmmmmmmmm
    EXPECTED SNUM: 12
B: Sending ACK to A...
    SEQ, ACK: 0, 12

EVENT time: 116.520280, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: nnnnnnnnnnnnnnnnnnn
A: Sending new DATA to B...
    SEQ, ACK: 13, 0
    PAYLOAD: nnnnnnnnnnnnnnnnnnn

EVENT time: 122.121769, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 13, 0
    PAYLOAD: nnnnnnnnnnnnnnnnnnn
    EXPECTED SNUM: 13
B: Sending ACK to A...
    SEQ, ACK: 0, 13

EVENT time: 123.795984, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 12
A: Accepting ACK from B...
```

```

EVENT time: 124.891018, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 13
A: Accepting ACK from B...

EVENT time: 129.616382, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: ooooooooooooooooooooooo
A: Sending new DATA to B...
    SEQ, ACK: 14, 0
    PAYLOAD: ooooooooooooooooooooooo

EVENT time: 130.294504, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: ppppppppppppppppppppp
A: Sending new DATA to B...
    SEQ, ACK: 15, 0
    PAYLOAD: ppppppppppppppppppp

EVENT time: 132.239387, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 14, 0
    PAYLOAD: ooooooooooooooooooooooo
    EXPECTED SNUM: 14
B: Sending ACK to A...
    SEQ, ACK: 0, 14

EVENT time: 136.725455, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 15, 0
    PAYLOAD: ppppppppppppppppppp
    EXPECTED SNUM: 15
B: Sending ACK to A...
    SEQ, ACK: 0, 15

EVENT time: 141.049532, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 14
A: Accepting ACK from B...

EVENT time: 149.752495, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: qqqqqqqqqqqqqqqqqqq
A: Sending new DATA to B...
    SEQ, ACK: 0, 0
    PAYLOAD: qqqqqqqqqqqqqqqqqqq

EVENT time: 151.012452, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 15
A: Accepting ACK from B...

EVENT time: 156.404035, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 0, 0
    PAYLOAD: qqqqqqqqqqqqqqqqq
    EXPECTED SNUM: 0
B: Sending ACK to A...
    SEQ, ACK: 0, 0

```

```
EVENT time: 163.759880, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
DATA: rrrrrrrrrrrrrrrrrrrrrrr
A: Sending new DATA to B...
SEQ, ACK: 1, 0
PAYLOAD: rrrrrrrrrrrrrrrrrrrrr

EVENT time: 165.401227, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
SEQ, ACK: 0, 0
A: Accepting ACK from B...

EVENT time: 165.979125, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 1, 0
PAYLOAD: rrrrrrrrrrrrrrrrrrrrr
EXPECTED SNUM: 1
B: Sending ACK to A...
SEQ, ACK: 0, 1

EVENT time: 170.553087, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
SEQ, ACK: 0, 1
A: Accepting ACK from B...

EVENT time: 179.742424, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
DATA: sssssssssssssssssss
A: Sending new DATA to B...
SEQ, ACK: 2, 0
PAYLOAD: sssssssssssssssss

EVENT time: 184.223762, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
DATA: ttttttttttttttttt
A: Sending new DATA to B...
SEQ, ACK: 3, 0
PAYLOAD: tttttttttttttttt

EVENT time: 189.463363, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 2, 0
PAYLOAD: sssssssssssssssss
EXPECTED SNUM: 2
B: Sending ACK to A...
SEQ, ACK: 0, 2

EVENT time: 195.227515, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
DATA: uuuuuuuuuuuuuuuuuuu
A: Sending new DATA to B...
SEQ, ACK: 4, 0
PAYLOAD: uuuuuuuuuuuuuuuuu

EVENT time: 195.442793, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
SEQ, ACK: 0, 2
A: Accepting ACK from B...
```

```
EVENT time: 198.917600, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 3, 0
    PAYLOAD: tttttttttttttttttt
    EXPECTED SNUM: 3
B: Sending ACK to A...
    SEQ, ACK: 0, 3

EVENT time: 200.884426, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: vvvvvvvvvvvvvvvvvv
A: Sending new DATA to B...
    SEQ, ACK: 5, 0
    PAYLOAD: vvvvvvvvvvvvvvvvvv

EVENT time: 200.936064, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 4, 0
    PAYLOAD: uuuuuuuuuuuuuuuuuuuuuuuuu
    EXPECTED SNUM: 4
B: Sending ACK to A...
    SEQ, ACK: 0, 4

EVENT time: 206.975433, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 3
A: Accepting ACK from B...

EVENT time: 208.511582, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 5, 0
    PAYLOAD: vvvvvvvvvvvvvvvvvv
    EXPECTED SNUM: 5
B: Sending ACK to A...
    SEQ, ACK: 0, 5

EVENT time: 209.288888, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 4
A: Accepting ACK from B...

EVENT time: 212.449690, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 5
A: Accepting ACK from B...

EVENT time: 213.113193, type: 1, fromlayer5 entity: 0
Simulator terminated at time 213.113193151646

STATISTICS:
Messages arrived to A: 22
Packets sent from A: 22
Packets retransmitted: 0
Correct acks: 22
Corrupted packets: 0
```

Caso 2:

La probabilità di corruzione e perdita del pacchetto è 0.2. Quando c'è corruzione e non viene ricevuto il pacchetto entro lo scadere del timer, viene ri-trasmessa l'intera finestra, come si può notare nella seconda figura sottostante.

```
----- * ARQ Network Simulator Version 1.1 * -----  
  
Enter number of messages to simulate: 55  
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 window size [>0]:8  
Enter retransmission timeout [> 0.0]:20  
Enter trace level:2  
Enter random seed: [>0]:2233  
  
EVENT time: 9.181188, type: 1, fromlayer5 entity: 0  
A: Receiving MSG from layer 5...  
    DATA:aaaaaaaaaaaaaaaaaaaa  
A: Sending new DATA to B...  
    SEQ, ACK: 0, 0  
    PAYLOAD:aaaaaaaaaaaaaaaaaaaa  
    TOLAYER3: packet being corrupted  
  
EVENT time: 11.710562, type: 1, fromlayer5 entity: 0  
A: Receiving MSG from layer 5...  
    DATA:bbbbbbbbbbbbbbbbbb  
A: Sending new DATA to B...  
    SEQ, ACK: 1, 0  
    PAYLOAD:bbbbbbbbbbbbbbbbbb  
  
EVENT time: 14.562120, type: 2, fromlayer3 entity: 1  
B: Receiving DATA from A...  
    SEQ, ACK: 0, 0  
    PAYLOAD:????????????????  
    EXPECTED SNUM: 0  
B: Resending previous ACK to A...  
    SEQ, ACK: 0, 15  
  
EVENT time: 17.071139, type: 2, fromlayer3 entity: 1  
B: Receiving DATA from A...  
    SEQ, ACK: 1, 0  
    PAYLOAD:bbbbbbbbbbbbbbbbbb  
    EXPECTED SNUM: 0  
B: Resending previous ACK to A...  
    SEQ, ACK: 0, 15  
  
EVENT time: 23.490646, type: 2, fromlayer3 entity: 0  
A: Receiving ACK from B...  
    SEQ, ACK: 0, 15  
A: Rejecting ACK from B... (pending ACK 0)  
  
EVENT time: 29.176305, type: 1, fromlayer5 entity: 0  
A: Receiving MSG from layer 5...  
    DATA:cccccccccccccccc  
A: Sending new DATA to B...  
    SEQ, ACK: 2, 0  
    PAYLOAD:cccccccccccccccc
```

```

EVENT time: 29.181188, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
    SEQ, ACK: 0, 0
    PAYLOAD:aaaaaaaaaaaaaaaaaaaaaa
    TOlayer3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 1, 0
    PAYLOAD:bbbbbbbbbbbbbbbbbbb
A: Resending DATA to B...
    SEQ, ACK: 2, 0
    PAYLOAD:cccccccccccccccccc

EVENT time: 31.216773, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA:dddddddddBBBBBBBBBBB
A: Sending new DATA to B...
    SEQ, ACK: 3, 0
    PAYLOAD:dddddddddBBBBBBBBBBB

EVENT time: 31.881375, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 15
A: Rejecting ACK from B... (pending ACK 0)

EVENT time: 34.024934, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 2, 0
    PAYLOAD:cccccccccccccccccc
    EXPECTED SNUM: 0
B: Resending previous ACK to A...
    SEQ, ACK: 0, 15

EVENT time: 38.082522, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 15
A: Rejecting ACK from B... (pending ACK 0)

EVENT time: 42.254982, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 1, 0
    PAYLOAD:bbbbbbbbBBBBBBBBBBB
    EXPECTED SNUM: 0
B: Resending previous ACK to A...
    SEQ, ACK: 0, 15

EVENT time: 46.134831, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA:eeeeeeeeeeeeeeeeee
A: Sending new DATA to B...
    SEQ, ACK: 4, 0
    PAYLOAD:eeeeeeeeeeeeeeeeee

EVENT time: 46.456221, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 15
A: Rejecting ACK from B... (pending ACK 0)

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EVENT time: 48.403607, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 2, 0
    PAYLOAD: cccccccccccccccccccc
    EXPECTED SNUM: 0
B: Resending previous ACK to A...
    SEQ, ACK: 0, 15
    TOLAYER3: packet being corrupted

EVENT time: 49.181188, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
    SEQ, ACK: 0, 0
    PAYLOAD:aaaaaaaaaaaaaaaaaaaa
A: Resending DATA to B...
    SEQ, ACK: 1, 0
    PAYLOAD:bbbbbbbbbbbbbbbbbbbb
A: Resending DATA to B...
    SEQ, ACK: 2, 0
    PAYLOAD:cccccccccccccccccc
A: Resending DATA to B...
    SEQ, ACK: 3, 0
    PAYLOAD:dddddddddBBBBBBBBBB
A: Resending DATA to B...
    SEQ, ACK: 4, 0
    PAYLOAD:eeeeeeeeeeeeeeeeee

EVENT time: 50.750572, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 3, 0
    PAYLOAD: dddDDDDDDDDDDDDDDDD
    EXPECTED SNUM: 0
B: Resending previous ACK to A...
    SEQ, ACK: 0, 15
    TOLAYER3: packet being lost

EVENT time: 53.943846, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 15
A: packet ACK corrupted.
A: Rejecting ACK from B... (pending ACK 0)

EVENT time: 55.994751, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: ffffffffffffff
A: Sending new DATA to B...
    SEQ, ACK: 5, 0
    PAYLOAD: ffffffffffffff

EVENT time: 57.067568, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 4, 0
    PAYLOAD:eeeeeeeeeeeeeeeeee
    EXPECTED SNUM: 0
B: Resending previous ACK to A...
    SEQ, ACK: 0, 15

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EVENT time: 58.933073, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
  DATA: ggggggggggggggggggg
A: Sending new DATA to B...
  SEQ, ACK: 6, 0
  PAYLOAD: ggggggggggggggggg
    TOLAYER3: packet being lost

EVENT time: 61.711570, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
  SEQ, ACK: 0, 15
A: Rejecting ACK from B... (pending ACK 0)

EVENT time: 64.757897, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
  SEQ, ACK: 0, 0
  PAYLOAD: aaaaaaaaaaaaaaaaaaa
  EXPECTED SNUM: 0
B: Sending ACK to A...
  SEQ, ACK: 0, 4

EVENT time: 68.695181, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
  SEQ, ACK: 1, 0
  PAYLOAD: bbbbbbbbbbbbbbbbbb
  EXPECTED SNUM: 5
B: Resending previous ACK to A...
  SEQ, ACK: 0, 4
    TOLAYER3: packet being corrupted

EVENT time: 69.181188, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
  SEQ, ACK: 0, 0
  PAYLOAD: aaaaaaaaaaaaaaaaaaa
A: Resending DATA to B...
  SEQ, ACK: 1, 0
  PAYLOAD: bbbbbbbbbbbbbbbbbb
A: Resending DATA to B...
  SEQ, ACK: 2, 0
  PAYLOAD: cccccccccccccccccc
A: Resending DATA to B...
  SEQ, ACK: 3, 0
  PAYLOAD: ddddddddddcccccccc
A: Resending DATA to B...
  SEQ, ACK: 4, 0
  PAYLOAD: eeeeeeeeeeeeeeeeeee
A: Resending DATA to B...
  SEQ, ACK: 5, 0
  PAYLOAD: ffffffffffffffffff
A: Resending DATA to B...
  SEQ, ACK: 6, 0
  PAYLOAD: gggggggggggggggggg

EVENT time: 72.116703, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
  SEQ, ACK: 0, 4
A: Accepting ACK from B...

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EVENT time: 72.706900, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 2, 0
    PAYLOAD: cccccccccccccccccc
    EXPECTED SNUM: 5
B: Resending previous ACK to A...
    SEQ, ACK: 0, 4
        TOLAYER3: packet being corrupted

EVENT time: 76.968902, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: hhhhhhhhhhhhhhhhhhh
A: Sending new DATA to B...
    SEQ, ACK: 7, 0
    PAYLOAD: hhhhhhhhhhhhhhhhh

EVENT time: 78.435560, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 3, 0
    PAYLOAD: ddddddddddBBBBBBBB
    EXPECTED SNUM: 5
B: Resending previous ACK to A...
    SEQ, ACK: 0, 4

EVENT time: 78.770104, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: iiiiiiiiiiiiiiii
A: Sending new DATA to B...
    SEQ, ACK: 8, 0
    PAYLOAD: iiiiiiiiiiiiiiii
        TOLAYER3: packet being corrupted

EVENT time: 81.622852, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 999999
A: packet ACK corrupted.
A: Rejecting ACK from B... (pending ACK 5)

EVENT time: 84.193335, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 4, 0
    PAYLOAD: eeeeeeeeeeeeeeeeeee
    EXPECTED SNUM: 5
B: Resending previous ACK to A...
    SEQ, ACK: 0, 4

EVENT time: 84.245857, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 4
A: packet ACK corrupted.
A: Rejecting ACK from B... (pending ACK 5)

EVENT time: 88.722800, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 5, 0
    PAYLOAD: ffffffffffffff
    EXPECTED SNUM: 5
B: Sending ACK to A...          18
    SEQ, ACK: 0, 5
        TOLAYER3: packet being lost
```

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EVENT time: 90.503128, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 0, 0
    PAYLOAD:aaaaaaaaaaaaaaaaaaaa
    EXPECTED SNUM: 6
B: Resending previous ACK to A...
    SEQ, ACK: 0, 5

EVENT time: 91.162450, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: jjjjjjjjjjjjjjjjjjjjj
A: Sending new DATA to B...
    SEQ, ACK: 9, 0
    PAYLOAD: jjjjjjjjjjjjjjjjjjj

EVENT time: 92.116703, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
    SEQ, ACK: 5, 0
    PAYLOAD: ffffffffffffffff
A: Resending DATA to B...
    SEQ, ACK: 6, 0
    PAYLOAD: ggggggggggggggggggg
        TOLAYER3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 7, 0
    PAYLOAD: hhhhhhhhhhhhhhhhhh
A: Resending DATA to B...
    SEQ, ACK: 8, 0
    PAYLOAD: iiiiiiiiiiiiiiiii
        TOLAYER3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 9, 0
    PAYLOAD: jjjjjjjjjjjjjjjjjj

EVENT time: 93.056001, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 4
A: Rejecting ACK from B... (pending ACK 5)

EVENT time: 94.589068, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: kkkkkkkkkkkkkkkkk
A: Sending new DATA to B...
    SEQ, ACK: 10, 0
    PAYLOAD: kkkkkkkkkkkkkkkkk

EVENT time: 95.594562, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 1, 0
    PAYLOAD: bbbbbbbbbbbbbbbbbb
    EXPECTED SNUM: 6
B: Resending previous ACK to A...
    SEQ, ACK: 0, 5
        TOLAYER3: packet being lost

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EVENT time: 97.881924, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 2, 0
    PAYLOAD: ccccccccccccccccccc
    EXPECTED SNUM: 6
B: Resending previous ACK to A...
    SEQ, ACK: 0, 5

EVENT time: 99.616932, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 3, 0
    PAYLOAD: ddddddddddcccccccc
    EXPECTED SNUM: 6
B: Resending previous ACK to A...
    SEQ, ACK: 0, 5

EVENT time: 99.707541, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 4
A: Rejecting ACK from B... (pending ACK 5)

EVENT time: 102.116153, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: 111111111111111111
A: Sending new DATA to B...
    SEQ, ACK: 11, 0
    PAYLOAD: 111111111111111111

EVENT time: 108.704733, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 5
A: Accepting ACK from B...

EVENT time: 108.874783, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 4, 0
    PAYLOAD: eeeeeeeeeeeeeeee
    EXPECTED SNUM: 6
B: Resending previous ACK to A...
    SEQ, ACK: 0, 5
        TOLAYER3: packet being corrupted

EVENT time: 110.723197, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 5
A: Rejecting ACK from B... (pending ACK 6)

EVENT time: 112.803125, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: mmmmmmmmmmmmmmmmmmm
A: Sending new DATA to B...
    SEQ, ACK: 12, 0
    PAYLOAD: mmmmmmmmmmmmmmmmm

EVENT time: 114.476272, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 5, 0
    PAYLOAD: ffffffffffffffff
    EXPECTED SNUM: 6
B: Resending previous ACK to A...
    SEQ, ACK: 0, 5

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EVENT time: 128.704733, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
    SEQ, ACK: 6, 0
    PAYLOAD: ggggggggggggggggggg
        TOLAYER3: packet being corrupted
A: Resending DATA to B...
    SEQ, ACK: 7, 0
    PAYLOAD: hhhhhhhhhhhhhhhhhhh
A: Resending DATA to B...
    SEQ, ACK: 8, 0
    PAYLOAD: iiiiiiiiiiiiiiii
        TOLAYER3: packet being corrupted
A: Resending DATA to B...
    SEQ, ACK: 9, 0
    PAYLOAD: jjjjjjjjjjjjjjjjjj
A: Resending DATA to B...
    SEQ, ACK: 10, 0
    PAYLOAD: kkkkkkkkkkkkkkkkk
A: Resending DATA to B...
    SEQ, ACK: 11, 0
    PAYLOAD: lllllllllllllllllll
A: Resending DATA to B...
    SEQ, ACK: 12, 0
    PAYLOAD: mmmmmmmmmmmmmmmmm
        TOLAYER3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 13, 0
    PAYLOAD: nnnnnnnnnnnnnnnnnnn

EVENT time: 129.092715, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 5
A: Rejecting ACK from B... (pending ACK 6)

EVENT time: 129.616382, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: ooooooooooooooooooooo

EVENT time: 130.020295, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 8, 0
    PAYLOAD: ?iiiiiiiiiiiiiiii
    EXPECTED SNUM: 8
B: Resending previous ACK to A...
    SEQ, ACK: 0, 7
        TOLAYER3: packet being corrupted

EVENT time: 130.294504, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: ppppppppppppppppppp

EVENT time: 132.239540, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 9, 0
    PAYLOAD: jjjjjjjjjjjjjjjjjj
    EXPECTED SNUM: 8
B: Resending previous ACK to A...
    SEQ, ACK: 0, 7

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EVENT time: 134.158330, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 6
A: Accepting ACK from B...
A: Sending new DATA to B...
    SEQ, ACK: 14, 0
    PAYLOAD: oooooooooooooooooooooooo

EVENT time: 136.813501, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 5, 0
    PAYLOAD: ffffffffffffff
    EXPECTED SNUM: 8
B: Resending previous ACK to A...
    SEQ, ACK: 0, 7
        TOLAYER3: packet being lost

EVENT time: 139.602985, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 7
A: Accepting ACK from B...
A: Sending new DATA to B...
    SEQ, ACK: 15, 0
    PAYLOAD: ppppppppppppppppppppppp

EVENT time: 146.534440, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 7, 0
    PAYLOAD: hhhhhhhhhhhhhhhhhhhhh
    EXPECTED SNUM: 8
B: Resending previous ACK to A...
    SEQ, ACK: 0, 7

EVENT time: 148.838313, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 7
A: packet ACK corrupted.
A: Rejecting ACK from B... (pending ACK 8)

EVENT time: 149.752495, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: qqqqqqqqqqqqqqqqqqq

EVENT time: 152.335032, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 7
A: Rejecting ACK from B... (pending ACK 8)

EVENT time: 155.988678, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 9, 0
    PAYLOAD: jjjjjjjjjjjjjjjjjjjjjj
    EXPECTED SNUM: 8
B: Resending previous ACK to A...
    SEQ, ACK: 0, 7

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EVENT time: 159.602985, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
    SEQ, ACK: 8, 0
    PAYLOAD: iiiiiiiiiiiiiiii
A: Resending DATA to B...
    SEQ, ACK: 9, 0
    PAYLOAD: jjjjjjjjjjjjjjjjjj
A: Resending DATA to B...
    SEQ, ACK: 10, 0
    PAYLOAD: kkkkkkkkkkkkkkkkk
A: Resending DATA to B...
    SEQ, ACK: 11, 0
    PAYLOAD: lllllllllllllllllll
        TOLAYER3: packet being corrupted
A: Resending DATA to B...
    SEQ, ACK: 12, 0
    PAYLOAD: mmmmmmmmmmmmmmmmm
        TOLAYER3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 13, 0
    PAYLOAD: nnnnnnnnnnnnnnnnn
        TOLAYER3: packet being corrupted
A: Resending DATA to B...
    SEQ, ACK: 14, 0
    PAYLOAD: oooooooooooooooo
        TOLAYER3: packet being corrupted
A: Resending DATA to B...
    SEQ, ACK: 15, 0
    PAYLOAD: ppppppppppppppppp
        TOLAYER3: packet being lost

EVENT time: 161.074862, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 7
A: Rejecting ACK from B... (pending ACK 8)

EVENT time: 161.968108, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 10, 0
    PAYLOAD: kkkkkkkkkkkkkkkkk
    EXPECTED SNUM: 8
B: Resending previous ACK to A...
    SEQ, ACK: 0, 7

EVENT time: 163.194952, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 7
A: Rejecting ACK from B... (pending ACK 8)

EVENT time: 163.759880, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: rrrrrrrrrrrrrrrrr

EVENT time: 169.296335, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 7
A: Rejecting ACK from B... (pending ACK 8)

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```

EVENT time: 169.543626, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 11, 0
    PAYLOAD: 111111111111111111111111
    EXPECTED SNUM: 8
B: Resending previous ACK to A...
    SEQ, ACK: 0, 7
        TOLAYER3: packet being lost

EVENT time: 172.704428, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 12, 0
    PAYLOAD: mmmmmmmmmmmmmmmmmmmmmmm
    EXPECTED SNUM: 8
B: Resending previous ACK to A...
    SEQ, ACK: 0, 7
        TOLAYER3: packet being corrupted

EVENT time: 179.602985, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
    SEQ, ACK: 8, 0
    PAYLOAD: iiiiiiiiiiiiiiii
        TOLAYER3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 9, 0
    PAYLOAD: jjjjjjjjjjjjjjjjjjjj
A: Resending DATA to B...
    SEQ, ACK: 10, 0
    PAYLOAD: kkkkkkkkkkkkkkkkkkk
A: Resending DATA to B...
    SEQ, ACK: 11, 0
    PAYLOAD: 111111111111111111111111
A: Resending DATA to B...
    SEQ, ACK: 12, 0
    PAYLOAD: mmmmmmmmmmmmmmmmmmm
A: Resending DATA to B...
    SEQ, ACK: 13, 0
    PAYLOAD: nnnnnnnnnnnnnnnnnn
        TOLAYER3: packet being corrupted
A: Resending DATA to B...
    SEQ, ACK: 14, 0
    PAYLOAD: ooooooooooooooooooooooo
A: Resending DATA to B...
    SEQ, ACK: 15, 0
    PAYLOAD: ppppppppppppppppppp

EVENT time: 179.742424, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: sssssssssssssssssssssss

EVENT time: 180.429090, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 999999
A: packet ACK corrupted.
A: Rejecting ACK from B... (pending ACK 8)

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EVENT time: 181.142399, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 13, 0
    PAYLOAD: nnnnnnnnnnnnnnnnnnnn
    EXPECTED SNUM: 8
B: Resending previous ACK to A...
    SEQ, ACK: 0, 7

EVENT time: 184.223762, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: tttttttttttttttt

EVENT time: 185.130222, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 7
A: Rejecting ACK from B... (pending ACK 8)

EVENT time: 190.392010, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 6, 999999
    PAYLOAD: ggggggggggggggggggg
    EXPECTED SNUM: 8
B: Resending previous ACK to A...
    SEQ, ACK: 0, 7
        TOLAYER3: packet being lost

EVENT time: 194.677297, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 7, 0
    PAYLOAD: hhhhhhhhhhhhhhhhh
    EXPECTED SNUM: 8
B: Resending previous ACK to A...
    SEQ, ACK: 0, 7

EVENT time: 195.227515, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: uuuuuuuuuuuuuuuuuuu

EVENT time: 195.987945, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 8, 0
    PAYLOAD: ?iiiiiiiiiiiiii
    EXPECTED SNUM: 8
B: Resending previous ACK to A...
    SEQ, ACK: 0, 7

EVENT time: 198.590075, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 9, 0
    PAYLOAD: jjjjjjjjjjjjjjjjjj
    EXPECTED SNUM: 8
B: Resending previous ACK to A...
    SEQ, ACK: 0, 7
        TOLAYER3: packet being lost
```

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EVENT time: 199.602985, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
SEQ, ACK: 8, 0
PAYLOAD: iiiiiiiiiiiiiiii
A: Resending DATA to B...
SEQ, ACK: 9, 0
PAYLOAD: jjjjjjjjjjjjjjjjjj
    TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 10, 0
PAYLOAD: kkkkkkkkkkkkkkkkkkk
A: Resending DATA to B...
SEQ, ACK: 11, 0
PAYLOAD: lllllllllllllllllll
    TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 12, 0
PAYLOAD: mmmmmmmmmmmmmmmmm
    TOLAYER3: packet being corrupted
A: Resending DATA to B...
SEQ, ACK: 13, 0
PAYLOAD: nnnnnnnnnnnnnnnnnn
    TOLAYER3: packet being corrupted
A: Resending DATA to B...
SEQ, ACK: 14, 0
PAYLOAD: oooooooooooooooo
A: Resending DATA to B...
SEQ, ACK: 15, 0
PAYLOAD: ppppppppppppppppp

EVENT time: 200.884426, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
DATA: vvvvvvvvvvvvvvvvvv

EVENT time: 202.373119, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
SEQ, ACK: 0, 7
A: Rejecting ACK from B... (pending ACK 8)

EVENT time: 208.307169, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 10, 0
PAYLOAD: kkkkkkkkkkkkkkkkk
EXPECTED SNUM: 8
B: Resending previous ACK to A...
SEQ, ACK: 0, 7
    TOLAYER3: packet being lost

EVENT time: 210.173742, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 11, 0
PAYLOAD: lllllllllllllllllll
EXPECTED SNUM: 8
B: Resending previous ACK to A...
SEQ, ACK: 0, 7

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EVENT time: 219.602985, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
    SEQ, ACK: 8, 0
    PAYLOAD: iiiiiiiiiiiiiiii
A: Resending DATA to B...
    SEQ, ACK: 9, 0
    PAYLOAD: jjjjjjjjjjjjjjjjjj
        TOLAYER3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 10, 0
    PAYLOAD: kkkkkkkkkkkkkkkkkkk
A: Resending DATA to B...
    SEQ, ACK: 11, 0
    PAYLOAD: lllllllllllllllllll
A: Resending DATA to B...
    SEQ, ACK: 12, 0
    PAYLOAD: mmmmmmmmmmmmmmmmm
A: Resending DATA to B...
    SEQ, ACK: 13, 0
    PAYLOAD: nnnnnnnnnnnnnnnnn
        TOLAYER3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 14, 0
    PAYLOAD: oooooooooooooooo
        TOLAYER3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 15, 0
    PAYLOAD: ppppppppppppppppp
        TOLAYER3: packet being corrupted

EVENT time: 222.198309, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 7
A: Rejecting ACK from B... (pending ACK 8)

EVENT time: 225.182501, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 7
A: Rejecting ACK from B... (pending ACK 8)

EVENT time: 225.314493, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 8, 0
    PAYLOAD: iiiiiiiiiiiiiiii
    EXPECTED SNUM: 8
B: Sending ACK to A...
    SEQ, ACK: 0, 15
        TOLAYER3: packet being corrupted

EVENT time: 230.471297, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 9, 0
    PAYLOAD: jjjjjjjjjjjjjjjj
    EXPECTED SNUM: 0
B: Resending previous ACK to A...
    SEQ, ACK: 0, 15
        TOLAYER3: packet being lost

```

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EVENT time: 232.038331, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: xxxxxxxxxxxxxxxxxxxxxxx

EVENT time: 234.619037, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 15
A: packet ACK corrupted.
A: Rejecting ACK from B... (pending ACK 8)

EVENT time: 237.011322, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 10, 0
    PAYLOAD: kkkkkkkkkkkkkkkkkkk
    EXPECTED SNUM: 0
B: Resending previous ACK to A...
    SEQ, ACK: 0, 15

EVENT time: 238.976409, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: yyyyyyyyyyyyyyyyyyyy

EVENT time: 239.602985, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
    SEQ, ACK: 8, 0
    PAYLOAD: iiiiiiiiiiiiiiii
        TOLAYER3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 9, 0
    PAYLOAD: jjjjjjjjjjjjjjjjjj
A: Resending DATA to B...
    SEQ, ACK: 10, 0
    PAYLOAD: kkkkkkkkkkkkkkkkk
        TOLAYER3: packet being corrupted
A: Resending DATA to B...
    SEQ, ACK: 11, 0
    PAYLOAD: lllllllllllllllllll
        TOLAYER3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 12, 0
    PAYLOAD: mmmmmmmmmmmmmmmmm
        TOLAYER3: packet being corrupted
A: Resending DATA to B...
    SEQ, ACK: 13, 0
    PAYLOAD: nnnnnnnnnnnnnnnnn
A: Resending DATA to B...
    SEQ, ACK: 14, 0
    PAYLOAD: oooooooooooooooo
A: Resending DATA to B...
    SEQ, ACK: 15, 0
    PAYLOAD: ppppppppppppppppp

EVENT time: 242.662526, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 11, 0
    PAYLOAD: ?1111111111111111
    EXPECTED SNUM: 0
B: Resending previous ACK to A...
    SEQ, ACK: 0, 15

```

```

EVENT time: 246.408704, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 15
A: Accepting ACK from B...
A: Sending new DATA to B...
    SEQ, ACK: 0, 0
    PAYLOAD: qqqqqqqqqqqqqqqqqqqqqqqq
        TOLAYER3: packet being lost
A: Sending new DATA to B...
    SEQ, ACK: 1, 0
    PAYLOAD: rrrrrrrrrrrrrrrrrrrrrr
A: Sending new DATA to B...
    SEQ, ACK: 2, 0
    PAYLOAD: sssssssssssssssssssss
        TOLAYER3: packet being lost
A: Sending new DATA to B...
    SEQ, ACK: 3, 0
    PAYLOAD: tttttttttttttttttt
        TOLAYER3: packet being lost
A: Sending new DATA to B...
    SEQ, ACK: 4, 0
    PAYLOAD: uuuuuuuuuuuuuuuuuuuuu
        TOLAYER3: packet being corrupted
A: Sending new DATA to B...
    SEQ, ACK: 5, 0
    PAYLOAD: vvvvvvvvvvvvvvvvvvvv
A: Sending new DATA to B...
    SEQ, ACK: 6, 0
    PAYLOAD: wwwwwwwwwwwwwwwwwww
A: Sending new DATA to B...
    SEQ, ACK: 7, 0
    PAYLOAD: xxxxxxxxxxxxxxxxxx

EVENT time: 247.850642, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 13, 0
    PAYLOAD: ?nnnnnnnnnnnnnnnnnnnnn
    EXPECTED SNUM: 0
B: Resending previous ACK to A...
    SEQ, ACK: 0, 15
        TOLAYER3: packet being corrupted

EVENT time: 248.886959, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 15
A: Rejecting ACK from B... (pending ACK 0)

EVENT time: 249.195898, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 14, 0
    PAYLOAD: ?ooooooooooooooooooooo
    EXPECTED SNUM: 0
B: Resending previous ACK to A...
    SEQ, ACK: 0, 15

EVENT time: 253.799860, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: zzzzzzzzzzzzzzzzzz

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EVENT time: 255.556902, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 15
A: packet ACK corrupted.
A: Rejecting ACK from B... (pending ACK 0)

EVENT time: 256.468184, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 9, 0
    PAYLOAD: jjjjjjjjjjjjjjjjjj
    EXPECTED SNUM: 0
B: Resending previous ACK to A...
    SEQ, ACK: 0, 15
    TOLAYER3: packet being lost

EVENT time: 257.676931, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 10, 0
    PAYLOAD: kkkkkkkkkkkkkkkkk
    EXPECTED SNUM: 0
B: Resending previous ACK to A...
    SEQ, ACK: 0, 15

EVENT time: 258.153813, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 15
A: Rejecting ACK from B... (pending ACK 0)

EVENT time: 261.053499, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA:aaaaaaaaaaaaaaaaaaaa

EVENT time: 263.923948, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 15
A: Rejecting ACK from B... (pending ACK 0)

EVENT time: 266.369518, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 11, 0
    PAYLOAD: lllllllllllllllllll
    EXPECTED SNUM: 0
B: Resending previous ACK to A...
    SEQ, ACK: 0, 15
    TOLAYER3: packet being corrupted
```

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EVENT time: 266.408704, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
    SEQ, ACK: 0, 0
    PAYLOAD: qqqqqqqqqqqqqqqqqqqqq
        TOLAYER3: packet being corrupted
A: Resending DATA to B...
    SEQ, ACK: 1, 0
    PAYLOAD: rrrrrrrrrrrrrrrrrrrrrr
A: Resending DATA to B...
    SEQ, ACK: 2, 0
    PAYLOAD: sssssssssssssssssss
        TOLAYER3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 3, 0
    PAYLOAD: tttttttttttttttttt
        TOLAYER3: packet being corrupted
A: Resending DATA to B...
    SEQ, ACK: 4, 0
    PAYLOAD: uuuuuuuuuuuuuuuuuuu
A: Resending DATA to B...
    SEQ, ACK: 5, 0
    PAYLOAD: vvvvvvvvvvvvvvvvvv
A: Resending DATA to B...
    SEQ, ACK: 6, 0
    PAYLOAD: wwwwwwwwwwwwwwwwww
A: Resending DATA to B...
    SEQ, ACK: 7, 0
    PAYLOAD: xxxxxxxxxxxxxxxxxx
        TOLAYER3: packet being lost

EVENT time: 272.493423, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 12, 0
    PAYLOAD: mmmmmmmmmmmmmmmmmmm
    EXPECTED SNUM: 0
B: Resending previous ACK to A...
    SEQ, ACK: 0, 15

EVENT time: 273.555101, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: bbbbbbbbbbbbbbbbbb

EVENT time: 274.250191, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 15
A: packet ACK corrupted.
A: Rejecting ACK from B... (pending ACK 0)

EVENT time: 279.036195, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 15
A: Rejecting ACK from B... (pending ACK 0)

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EVENT time: 280.242805, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 13, 0
PAYLOAD: ?nnnnnnnnnnnnnnnnnn
EXPECTED SNUM: 0
B: Resending previous ACK to A...
SEQ, ACK: 0, 15

EVENT time: 282.487869, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
DATA: cccccccccccccccccccc

EVENT time: 284.200415, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 14, 0
PAYLOAD: ooooooooooooooooooooooo
EXPECTED SNUM: 0
B: Resending previous ACK to A...
SEQ, ACK: 0, 15

EVENT time: 285.729545, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
DATA: dddddddddd dddd dddd

EVENT time: 286.408704, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
SEQ, ACK: 0, 0
PAYLOAD: qqqqqqqqqqqqqqqqqqq
TOlayer3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 1, 0
PAYLOAD: rrrrrrrrrrrrrrrrrrr
TOlayer3: packet being corrupted
A: Resending DATA to B...
SEQ, ACK: 2, 0
PAYLOAD: sssssssssssssssss
A: Resending DATA to B...
SEQ, ACK: 3, 0
PAYLOAD: ttttttttttttttttt
TOlayer3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 4, 0
PAYLOAD: uuuuuuuuuuuuuuuuu
TOlayer3: packet being corrupted
A: Resending DATA to B...
SEQ, ACK: 5, 0
PAYLOAD: vvvvvvvvvvvvvvvvv
A: Resending DATA to B...
SEQ, ACK: 6, 0
PAYLOAD: wwwwwwwwwwwwwww
A: Resending DATA to B...
SEQ, ACK: 7, 0
PAYLOAD: xxxxxxxxxxxxxxxxxx

EVENT time: 286.452223, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
DATA: eeeeeeeeeeeeeeee

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EVENT time: 287.584857, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 15
A: Rejecting ACK from B... (pending ACK 0)

EVENT time: 291.564440, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 15, 0
    PAYLOAD: ppppppppppppppppppp
    EXPECTED SNUM: 0
B: Resending previous ACK to A...
    SEQ, ACK: 0, 15

EVENT time: 295.676412, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 8, 0
    PAYLOAD: iiiiiiiiiiiiiiiii
    EXPECTED SNUM: 0
B: Resending previous ACK to A...
    SEQ, ACK: 0, 15
        TOLAYER3: packet being lost

EVENT time: 296.296396, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 15
A: Rejecting ACK from B... (pending ACK 0)

EVENT time: 299.465712, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 15
A: Rejecting ACK from B... (pending ACK 0)

EVENT time: 302.876064, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: ffffffffffffffff

EVENT time: 304.919706, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 10, 0
    PAYLOAD: kkkkkkkkkkkkkkkkkkk
    EXPECTED SNUM: 0
B: Resending previous ACK to A...
    SEQ, ACK: 0, 15
        TOLAYER3: packet being lost
```

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EVENT time: 306.408704, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
    SEQ, ACK: 0, 0
    PAYLOAD: qqqqqqqqqqqqqqqqqqqqqqqqq
A: Resending DATA to B...
    SEQ, ACK: 1, 0
    PAYLOAD: rrrrrrrrrrrrrrrrrrrrrrrr
A: Resending DATA to B...
    SEQ, ACK: 2, 0
    PAYLOAD: sssssssssssssssssss
        TOLAYER3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 3, 0
    PAYLOAD: tttttttttttttttttt
A: Resending DATA to B...
    SEQ, ACK: 4, 0
    PAYLOAD: uuuuuuuuuuuuuuuuuuuuuuuuu
        TOLAYER3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 5, 0
    PAYLOAD: vvvvvvvvvvvvvvvvvvvvvvvv
        TOLAYER3: packet being corrupted
A: Resending DATA to B...
    SEQ, ACK: 6, 0
    PAYLOAD: wwwwwwwwwwwwwwwwwwwwwww
A: Resending DATA to B...
    SEQ, ACK: 7, 0
    PAYLOAD: xxxxxxxxxxxxxxxxxxxxx
        TOLAYER3: packet being corrupted

EVENT time: 311.714621, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 12, 0
    PAYLOAD: ?mmmmmmmmmmmmmmmmmmmmmm
    EXPECTED SNUM: 0
B: Resending previous ACK to A...
    SEQ, ACK: 0, 15
        TOLAYER3: packet being lost

EVENT time: 316.611591, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 13, 0
    PAYLOAD: ?nnnnnnnnnnnnnnnnnnnnnnn
    EXPECTED SNUM: 0
B: Resending previous ACK to A...
    SEQ, ACK: 0, 15

EVENT time: 319.307382, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 14, 0
    PAYLOAD: oooooooooooooooooooooo
    EXPECTED SNUM: 0
B: Resending previous ACK to A...
    SEQ, ACK: 0, 15
        TOLAYER3: packet being corrupted

```

```
EVENT time: 319.884732, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
SEQ, ACK: 0, 15
A: Rejecting ACK from B... (pending ACK 0)

EVENT time: 322.422559, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
DATA: ggggggggggggggggggggggggg

EVENT time: 326.408704, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
SEQ, ACK: 0, 0
PAYLOAD: qqqqqqqqqqqqqqqqqqqqqqq
A: Resending DATA to B...
SEQ, ACK: 1, 0
PAYLOAD: rrrrrrrrrrrrrrrrrrrrrrr
A: Resending DATA to B...
SEQ, ACK: 2, 0
PAYLOAD: sssssssssssssssssssss
A: Resending DATA to B...
SEQ, ACK: 3, 0
PAYLOAD: tttttttttttttttttt
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 4, 0
PAYLOAD: uuuuuuuuuuuuuuuuuuu
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 5, 0
PAYLOAD: vvvvvvvvvvvvvvvvvvvv
A: Resending DATA to B...
SEQ, ACK: 6, 0
PAYLOAD: wwwwwwwwwwwwwwwwwww
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 7, 0
PAYLOAD: xxxxxxxxxxxxxxxxxx
TOLAYER3: packet being lost

EVENT time: 327.661306, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 15, 0
PAYLOAD: ppppppppppppppppppp
EXPECTED SNUM: 0
B: Resending previous ACK to A...
SEQ, ACK: 0, 15

EVENT time: 329.033265, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
SEQ, ACK: 0, 15
A: packet ACK corrupted.
A: Rejecting ACK from B... (pending ACK 0)

EVENT time: 332.181433, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
SEQ, ACK: 0, 15
A: Rejecting ACK from B... (pending ACK 0)
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EVENT time: 333.913480, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 8, 0
    PAYLOAD: iiiiiiiiiiiiiiii
    EXPECTED SNUM: 0
B: Resending previous ACK to A...
    SEQ, ACK: 0, 15
        TOLAYER3: packet being corrupted

EVENT time: 336.670797, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 15
A: packet ACK corrupted.
A: Rejecting ACK from B... (pending ACK 0)

EVENT time: 337.110508, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: hhhhhhhhhhhhhhhhhhhhh

EVENT time: 339.312113, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: iiiiiiiiiiiiiiii

EVENT time: 342.044923, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 10, 0
    PAYLOAD: kkkkkkkkkkkkkkkkkkkkkkkk
    EXPECTED SNUM: 0
B: Resending previous ACK to A...
    SEQ, ACK: 0, 15

EVENT time: 346.236763, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: jjjjjjjjjjjjjjjjjjjjjjjj

EVENT time: 346.408704, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
    SEQ, ACK: 0, 0
    PAYLOAD: qqqqqqqqqqqqqqqqqqqqqqqqq
A: Resending DATA to B...
    SEQ, ACK: 1, 0
    PAYLOAD: rrrrrrrrrrrrrrrrrrrrrrrrr
A: Resending DATA to B...
    SEQ, ACK: 2, 0
    PAYLOAD: sssssssssssssssssss
A: Resending DATA to B...
    SEQ, ACK: 3, 0
    PAYLOAD: ttttttttttttttttt
        TOLAYER3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 4, 0
    PAYLOAD: uuuuuuuuuuuuuuuuuuu
A: Resending DATA to B...
    SEQ, ACK: 5, 0
    PAYLOAD: vvvvvvvvvvvvvvvvvvvv
A: Resending DATA to B...
    SEQ, ACK: 6, 0
    PAYLOAD: wwwwwwwwwwwwwwwwwwwww
A: Resending DATA to B...            38
    SEQ, ACK: 7, 0
    PAYLOAD: xxxxxxxxxxxxxxxxxxxxx

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EVENT time: 347.519242, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 15
A: Rejecting ACK from B... (pending ACK 0)

EVENT time: 349.014801, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 11, 0
    PAYLOAD: 11111111111111111111
    EXPECTED SNUM: 0
B: Resending previous ACK to A...
    SEQ, ACK: 0, 15

EVENT time: 350.655232, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: kkkkkkkkkkkkkkkkkkkkkkkkk

EVENT time: 351.114841, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: 11111111111111111111

EVENT time: 353.682424, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 12, 0
    PAYLOAD: mmmmmmmmmmmmmmmmmmmmmmm
    EXPECTED SNUM: 0
B: Resending previous ACK to A...
    SEQ, ACK: 0, 15
        TOLAYER3: packet being lost

EVENT time: 354.933470, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 15, 0
    PAYLOAD: ?pppppppppppppppppppp
    EXPECTED SNUM: 0
B: Resending previous ACK to A...
    SEQ, ACK: 0, 15
        TOLAYER3: packet being lost

EVENT time: 357.522538, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 15
A: Rejecting ACK from B... (pending ACK 0)

EVENT time: 359.007538, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 9, 0
    PAYLOAD: jjjjjjjjjjjjjjjjjjjjjjjj
    EXPECTED SNUM: 0
B: Resending previous ACK to A...
    SEQ, ACK: 0, 15

EVENT time: 360.371197, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 10, 0
    PAYLOAD: ?kkkkkkkkkkkkkkkkkkkkkk
    EXPECTED SNUM: 0
B: Resending previous ACK to A...
    SEQ, ACK: 0, 15
        TOLAYER3: packet being corrupted

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EVENT time: 361.475265, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: mmmmmmmmmmmmmmmmmmmmmmmmmmm

EVENT time: 361.511612, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 15
A: Rejecting ACK from B... (pending ACK 0)

EVENT time: 363.431745, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 12, 0
    PAYLOAD: ?mmmmmmmmmmmmmmmmmmmmmmmm
    EXPECTED SNUM: 0
B: Resending previous ACK to A...
    SEQ, ACK: 0, 15

EVENT time: 366.408704, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
    SEQ, ACK: 0, 0
    PAYLOAD: qqqqqqqqqqqqqqqqqqqq
        TOLAYER3: packet being corrupted
A: Resending DATA to B...
    SEQ, ACK: 1, 0
    PAYLOAD: rrrrrrrrrrrrrrrrrrr
A: Resending DATA to B...
    SEQ, ACK: 2, 0
    PAYLOAD: sssssssssssssssss
A: Resending DATA to B...
    SEQ, ACK: 3, 0
    PAYLOAD: tttttttttttttttt
        TOLAYER3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 4, 0
    PAYLOAD: uuuuuuuuuuuuuuuuuuu
A: Resending DATA to B...
    SEQ, ACK: 5, 0
    PAYLOAD: vvvvvvvvvvvvvvvvvv
A: Resending DATA to B...
    SEQ, ACK: 6, 0
    PAYLOAD: wwwwwwwwwwwwwwwww
A: Resending DATA to B...
    SEQ, ACK: 7, 0
    PAYLOAD: xxxxxxxxxxxxxxxxxx

EVENT time: 370.284890, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 13, 0
    PAYLOAD: nnnnnnnnnnnnnnnnnnn
    EXPECTED SNUM: 0
B: Resending previous ACK to A...
    SEQ, ACK: 0, 15
        TOLAYER3: packet being corrupted

EVENT time: 371.298196, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 15
A: packet ACK corrupted.
A: Rejecting ACK from B... (pending ACK 0)

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EVENT time: 386.408704, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
SEQ, ACK: 0, 0
PAYLOAD: qqqqqqqqqqqqqqqqqqqqqqqqq
A: Resending DATA to B...
SEQ, ACK: 1, 0
PAYLOAD: rrrrrrrrrrrrrrrrrrrrrrrrr
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 2, 0
PAYLOAD: sssssssssssssssssss
TOLAYER3: packet being corrupted
A: Resending DATA to B...
SEQ, ACK: 3, 0
PAYLOAD: ttttttttttttttttt
A: Resending DATA to B...
SEQ, ACK: 4, 0
PAYLOAD: uuuuuuuuuuuuuuuuu
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 5, 0
PAYLOAD: vvvvvvvvvvvvvvvvv
A: Resending DATA to B...
SEQ, ACK: 6, 0
PAYLOAD: wwwwwwwwwwwwwwwww
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 7, 0
PAYLOAD: xxxxxxxxxxxxxxxxxx

EVENT time: 388.681875, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 1, 0
PAYLOAD: rrrrrrrrrrrrrrrrrrr
EXPECTED SNUM: 0
B: Resending previous ACK to A...
SEQ, ACK: 0, 15
TOLAYER3: packet being lost

EVENT time: 391.438765, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
SEQ, ACK: 0, 15
A: Rejecting ACK from B... (pending ACK 0)

EVENT time: 392.478408, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
DATA: ppppppppppppppppppp

EVENT time: 395.090182, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
DATA: qqqqqqqqqqqqqqqqqqq

EVENT time: 396.155217, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 4, 999999
PAYLOAD: uuuuuuuuuuuuuuuuu
EXPECTED SNUM: 0
B: Resending previous ACK to A...
SEQ, ACK: 0, 15
TOLAYER3: packet being lost

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EVENT time: 396.334910, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 15
A: Rejecting ACK from B... (pending ACK 0)

EVENT time: 403.214087, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 5, 0
    PAYLOAD: vvvvvvvvvvvvvvvvvvvv
    EXPECTED SNUM: 0
B: Resending previous ACK to A...
    SEQ, ACK: 0, 15

EVENT time: 405.235572, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 15
A: Rejecting ACK from B... (pending ACK 0)

EVENT time: 406.408704, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
    SEQ, ACK: 0, 0
    PAYLOAD: qqqqqqqqqqqqqqqqqqqqqq
A: Resending DATA to B...
    SEQ, ACK: 1, 0
    PAYLOAD: rrrrrrrrrrrrrrrrrrrr
        TOLAYER3: packet being corrupted
A: Resending DATA to B...
    SEQ, ACK: 2, 0
    PAYLOAD: sssssssssssssssss
A: Resending DATA to B...
    SEQ, ACK: 3, 0
    PAYLOAD: tttttttttttttttt
        TOLAYER3: packet being corrupted
A: Resending DATA to B...
    SEQ, ACK: 4, 0
    PAYLOAD: uuuuuuuuuuuuuuuuu
A: Resending DATA to B...
    SEQ, ACK: 5, 0
    PAYLOAD: vvvvvvvvvvvvvvvvvv
        TOLAYER3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 6, 0
    PAYLOAD: wwwwwwwWWWWWWWWWWWW
A: Resending DATA to B...
    SEQ, ACK: 7, 0
    PAYLOAD: xxxxxxxxxxxxxxxxxx
        TOLAYER3: packet being lost

EVENT time: 408.216193, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: rrrrrrrrrrrrrrrrrr

EVENT time: 409.179235, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 6, 0
    PAYLOAD: wwwwwWWWWWWWWWWWWWW
    EXPECTED SNUM: 0
B: Resending previous ACK to A...
    SEQ, ACK: 0, 15

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EVENT time: 414.951842, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 7, 0
    PAYLOAD: xxxxxxxxxxxxxxxxxxxx
    EXPECTED SNUM: 0
B: Resending previous ACK to A...
    SEQ, ACK: 0, 15

EVENT time: 417.181799, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 999999, 0
    PAYLOAD: qqqqqqqqqqqqqqqqqqqq
    EXPECTED SNUM: 0
B: Resending previous ACK to A...
    SEQ, ACK: 0, 15

EVENT time: 418.295083, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 15
A: Rejecting ACK from B... (pending ACK 0)

EVENT time: 421.380566, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 1, 0
    PAYLOAD: rrrrrrrrrrrrrrrrrrr
    EXPECTED SNUM: 0
B: Resending previous ACK to A...
    SEQ, ACK: 0, 15

EVENT time: 423.140416, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 15
A: Rejecting ACK from B... (pending ACK 0)

EVENT time: 426.408704, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
    SEQ, ACK: 0, 0
    PAYLOAD: qqqqqqqqqqqqqqqqqq
A: Resending DATA to B...
    SEQ, ACK: 1, 0
    PAYLOAD: rrrrrrrrrrrrrrrrr
A: Resending DATA to B...
    SEQ, ACK: 2, 0
    PAYLOAD: sssssssssssssssss
A: Resending DATA to B...
    SEQ, ACK: 3, 0
    PAYLOAD: tttttttttttttttt
A: Resending DATA to B...
    SEQ, ACK: 4, 0
    PAYLOAD: uuuuuuuuuuuuuuuuu
    TOLAYER3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 5, 0
    PAYLOAD: vvvvvvvvvvvvvvvv
    TOLAYER3: packet being corrupted
A: Resending DATA to B...
    SEQ, ACK: 6, 0
    PAYLOAD: wwwwwwwwwwwwwwwww
A: Resending DATA to B...
    SEQ, ACK: 7, 0
    PAYLOAD: xxxxxxxxxxxxxxxxxxxx
    TOLAYER3: packet being corrupted

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EVENT time: 427.209204, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 3, 0
    PAYLOAD: ??????????????
    EXPECTED SNUM: 0
B: Resending previous ACK to A...
    SEQ, ACK: 0, 15

EVENT time: 429.294809, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 15
A: Rejecting ACK from B... (pending ACK 0)

EVENT time: 429.757988, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: ??????????????

EVENT time: 431.964721, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 4, 0
    PAYLOAD: uuuuuuuuuuuuuuuuuuu
    EXPECTED SNUM: 0
B: Resending previous ACK to A...
    SEQ, ACK: 0, 15
    TOLAYER3: packet being lost

EVENT time: 437.869564, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 15
A: Rejecting ACK from B... (pending ACK 0)

EVENT time: 439.039521, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 5, 0
    PAYLOAD: vvvvvvvvvvvvvvvvvv
    EXPECTED SNUM: 0
B: Resending previous ACK to A...
    SEQ, ACK: 0, 15

EVENT time: 440.957030, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 15
A: Rejecting ACK from B... (pending ACK 0)

EVENT time: 441.809137, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: uuuuuuuuuuuuuuuuuuu
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EVENT time: 446.408704, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
    SEQ, ACK: 0, 0
    PAYLOAD: qqqqqqqqqqqqqqqqqqqqqqqqq
A: Resending DATA to B...
    SEQ, ACK: 1, 0
    PAYLOAD: rrrrrrrrrrrrrrrrrrrrrr
A: Resending DATA to B...
    SEQ, ACK: 2, 0
    PAYLOAD: sssssssssssssssssss
        TOLAYER3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 3, 0
    PAYLOAD: tttttttttttttttttt
A: Resending DATA to B...
    SEQ, ACK: 4, 0
    PAYLOAD: uuuuuuuuuuuuuuuuuuu
        TOLAYER3: packet being corrupted
A: Resending DATA to B...
    SEQ, ACK: 5, 0
    PAYLOAD: vvvvvvvvvvvvvvvvvvvv
A: Resending DATA to B...
    SEQ, ACK: 6, 0
    PAYLOAD: wwwwwwwwwwwwwwwwwww
A: Resending DATA to B...
    SEQ, ACK: 7, 0
    PAYLOAD: xxxxxxxxxxxxxxxxxx
        TOLAYER3: packet being lost

EVENT time: 448.985961, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 6, 0
    PAYLOAD: wwwwwwwwwwwwwwwww
    EXPECTED SNUM: 0
B: Resending previous ACK to A...
    SEQ, ACK: 0, 15
        TOLAYER3: packet being corrupted

EVENT time: 450.611225, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 15
A: Rejecting ACK from B... (pending ACK 0)

EVENT time: 450.684713, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 1, 0
    PAYLOAD: ?rrrrrrrrrrrrrrrrrr
    EXPECTED SNUM: 0
B: Resending previous ACK to A...
    SEQ, ACK: 0, 15
        TOLAYER3: packet being corrupted

EVENT time: 454.224281, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 2, 0
    PAYLOAD: sssssssssssssssss
    EXPECTED SNUM: 0
B: Resending previous ACK to A...
    SEQ, ACK: 0, 15

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EVENT time: 454.903653, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 15
A: packet ACK corrupted.
A: Rejecting ACK from B... (pending ACK 0)

EVENT time: 459.634999, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: vvvvvvvvvvvvvvvvvvvv

EVENT time: 461.602435, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 15
A: packet ACK corrupted.
A: Rejecting ACK from B... (pending ACK 0)

EVENT time: 463.366771, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 4, 0
    PAYLOAD: ?uuuuuuuuuuuuuuuuuuuuuuuuuu
    EXPECTED SNUM: 0
B: Resending previous ACK to A...
    SEQ, ACK: 0, 15

EVENT time: 466.408704, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
    SEQ, ACK: 0, 0
    PAYLOAD: qqqqqqqqqqqqqqqqqqqqqqqqq
A: Resending DATA to B...
    SEQ, ACK: 1, 0
    PAYLOAD: rrrrrrrrrrrrrrrrrrrrrrrrrrr
        TOLAYER3: packet being corrupted
A: Resending DATA to B...
    SEQ, ACK: 2, 0
    PAYLOAD: sssssssssssssssssssssssss
A: Resending DATA to B...
    SEQ, ACK: 3, 0
    PAYLOAD: tttttttttttttttttt
        TOLAYER3: packet being corrupted
A: Resending DATA to B...
    SEQ, ACK: 4, 0
    PAYLOAD: uuuuuuuuuuuuuuuuuuuuuuuuu
        TOLAYER3: packet being corrupted
A: Resending DATA to B...
    SEQ, ACK: 5, 0
    PAYLOAD: vvvvvvvvvvvvvvvvvvvvvvvv
A: Resending DATA to B...
    SEQ, ACK: 6, 0
    PAYLOAD: wwwwwwwwwwwwwwwwwwwwwww
A: Resending DATA to B...
    SEQ, ACK: 7, 0
    PAYLOAD: xxxxxxxxxxxxxxxxxx
        TOLAYER3: packet being lost

EVENT time: 468.156743, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 15
A: Rejecting ACK from B... (pending ACK 0)
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EVENT time: 468.725242, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: wwwwwwwwwwwwwwwwwww

EVENT time: 472.689718, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 5, 0
    PAYLOAD: vvvvvvvvvvvvvvvvvv
    EXPECTED SNUM: 0
B: Resending previous ACK to A...
    SEQ, ACK: 0, 15
        TOLAYER3: packet being corrupted

EVENT time: 473.705252, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: xxxxxxxxxxxxxxxxxx

EVENT time: 474.928190, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 6, 0
    PAYLOAD: wwwwwwwwwwwwwwwww
    EXPECTED SNUM: 0
B: Resending previous ACK to A...
    SEQ, ACK: 0, 15

EVENT time: 476.754021, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 15
A: Rejecting ACK from B... (pending ACK 0)

EVENT time: 477.079592, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 7, 0
    PAYLOAD: xxxxxxxxxxxxxxxxxx
    EXPECTED SNUM: 0
B: Resending previous ACK to A...
    SEQ, ACK: 0, 15
        TOLAYER3: packet being lost

EVENT time: 479.288125, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 0, 0
    PAYLOAD: qqqqqqqqqqqqqqqqqqqqq
    EXPECTED SNUM: 0
B: Sending ACK to A...
    SEQ, ACK: 0, 2
        TOLAYER3: packet being lost

EVENT time: 480.036775, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 15
A: packet ACK corrupted.
A: Rejecting ACK from B... (pending ACK 0)

EVENT time: 485.864040, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 15
A: Rejecting ACK from B... (pending ACK 0)
```

```

EVENT time: 486.408704, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
    SEQ, ACK: 0, 0
    PAYLOAD: qqqqqqqqqqqqqqqqqqqqqqq
A: Resending DATA to B...
    SEQ, ACK: 1, 0
    PAYLOAD: rrrrrrrrrrrrrrrrrrr
A: Resending DATA to B...
    SEQ, ACK: 2, 0
    PAYLOAD: sssssssssssssssssss
A: Resending DATA to B...
    SEQ, ACK: 3, 0
    PAYLOAD: ttttttttttttttttt
A: Resending DATA to B...
    SEQ, ACK: 4, 0
    PAYLOAD: uuuuuuuuuuuuuuuuuuu
A: Resending DATA to B...
    SEQ, ACK: 5, 0
    PAYLOAD: vvvvvvvvvvvvvvvvvv
A: Resending DATA to B...
    SEQ, ACK: 6, 0
    PAYLOAD: wwwwwwwwwwwwwwwwwww
A: Resending DATA to B...
    SEQ, ACK: 7, 0
    PAYLOAD: xxxxxxxxxxxxxxxxxx

EVENT time: 486.811731, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 1, 0
    PAYLOAD: rrrrrrrrrrrrrrrrrrr
    EXPECTED SNUM: 3
B: Resending previous ACK to A...
    SEQ, ACK: 0, 2

EVENT time: 488.193793, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 2
A: Accepting ACK from B...
A: Sending new DATA to B...
    SEQ, ACK: 8, 0
    PAYLOAD: yyyyyyyyyyyyyyyyyyyy
A: Sending new DATA to B...
    SEQ, ACK: 9, 0
    PAYLOAD: zzzzzzzzzzzzzzzzzz
        TOLAYER3: packet being corrupted
A: Sending new DATA to B...
    SEQ, ACK: 10, 0
    PAYLOAD:aaaaaaaaaaaaaaaaaaaa
        TOLAYER3: packet being lost

EVENT time: 492.281869, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: yyyyyyyyyyyyyyyyyyyyy

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EVENT time: 496.275857, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 3, 0
    PAYLOAD: tttttttttttttttttt
    EXPECTED SNUM: 3
B: Sending ACK to A...
    SEQ, ACK: 0, 7

EVENT time: 503.454482, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 5, 999999
    PAYLOAD: vvvvvvvvvvvvvvvvvv
    EXPECTED SNUM: 8
B: Resending previous ACK to A...
    SEQ, ACK: 0, 7

EVENT time: 505.194494, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 7
A: Accepting ACK from B...
A: Sending new DATA to B...
    SEQ, ACK: 11, 0
    PAYLOAD: bbbbbbbbbbbbbbbbbbb
A: Sending new DATA to B...
    SEQ, ACK: 12, 0
    PAYLOAD: cccccccccccccccccccc
        TOLAYER3: packet being corrupted
A: Sending new DATA to B...
    SEQ, ACK: 13, 0
    PAYLOAD: dddddddddd dddd dddd
A: Sending new DATA to B...
    SEQ, ACK: 14, 0
    PAYLOAD: eeeeeeeeeeeeeeeeeee
A: Sending new DATA to B...
    SEQ, ACK: 15, 0
    PAYLOAD: ffffffffffffff ffffff
        TOLAYER3: packet being corrupted

EVENT time: 508.121830, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 6, 0
    PAYLOAD: wwwwwwwwwwwwwwwww
    EXPECTED SNUM: 8
B: Resending previous ACK to A...
    SEQ, ACK: 0, 7

EVENT time: 510.593585, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: zzzzzzzzzzzzzzzz

EVENT time: 513.388226, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 7, 0
    PAYLOAD: ?xxxxxxxxxxxxxx
    EXPECTED SNUM: 8
B: Resending previous ACK to A...
    SEQ, ACK: 0, 7
        TOLAYER3: packet being lost
```

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EVENT time: 515.108249, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 7
A: Rejecting ACK from B... (pending ACK 8)

EVENT time: 515.305887, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 0, 0
    PAYLOAD: qqqqqqqqqqqqqqqqqqqqqqqq
    EXPECTED SNUM: 8
B: Resending previous ACK to A...
    SEQ, ACK: 0, 7

EVENT time: 520.049989, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 7
A: Rejecting ACK from B... (pending ACK 8)

EVENT time: 522.864650, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 1, 0
    PAYLOAD: rrrrrrrrrrrrrrrrrrrrrrrr
    EXPECTED SNUM: 8
B: Resending previous ACK to A...
    SEQ, ACK: 0, 7
        TOlayer3: packet being corrupted

EVENT time: 525.194494, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
    SEQ, ACK: 8, 0
    PAYLOAD: yyyyyyyyyyyyyyyyyyyy
A: Resending DATA to B...
    SEQ, ACK: 9, 0
    PAYLOAD: zzzzzzzzzzzzzzzz
        TOlayer3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 10, 0
    PAYLOAD: aaaaaaaaaaaaaaaaaaa
        TOlayer3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 11, 0
    PAYLOAD: bbbbbbbbbbbbbbbbbbb
A: Resending DATA to B...
    SEQ, ACK: 12, 0
    PAYLOAD: cccccccccccccccccc
A: Resending DATA to B...
    SEQ, ACK: 13, 0
    PAYLOAD: ddddddddddcccccccc
A: Resending DATA to B...
    SEQ, ACK: 14, 0
    PAYLOAD: eeeeeeeeeeeeeeeeeee
A: Resending DATA to B...
    SEQ, ACK: 15, 0
    PAYLOAD: ffffffffffffffff

EVENT time: 527.173406, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 7
A: Rejecting ACK from B... (pending ACK 8)

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EVENT time: 530.508744, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA:aaaaaaaaaaaaaaaaaaaaaa

EVENT time: 531.259499, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 2, 0
    PAYLOAD: sssssssssssssssssss
    EXPECTED SNUM: 8
B: Resending previous ACK to A...
    SEQ, ACK: 0, 7
        TOLAYER3: packet being lost

EVENT time: 532.737419, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 5, 0
    PAYLOAD: vvvvvvvvvvvvvvvvvvvv
    EXPECTED SNUM: 8
B: Resending previous ACK to A...
    SEQ, ACK: 0, 7
        TOLAYER3: packet being lost

EVENT time: 534.088076, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 7
A: packet ACK corrupted.
A: Rejecting ACK from B... (pending ACK 8)

EVENT time: 539.606769, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 0, 0
    PAYLOAD: qqqqqqqqqqqqqqqqqqqq
    EXPECTED SNUM: 8
B: Resending previous ACK to A...
    SEQ, ACK: 0, 7
        TOLAYER3: packet being corrupted

EVENT time: 540.901486, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 1, 0
    PAYLOAD: rrrrrrrrrrrrrrrrrrrrrr
    EXPECTED SNUM: 8
B: Resending previous ACK to A...
    SEQ, ACK: 0, 7

EVENT time: 540.929777, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 7
A: packet ACK corrupted.
A: Rejecting ACK from B... (pending ACK 8)

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EVENT time: 545.194494, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
    SEQ, ACK: 8, 0
    PAYLOAD: yyyyyyyyyyyyyyyyyyyyy
A: Resending DATA to B...
    SEQ, ACK: 9, 0
    PAYLOAD: zzzzzzzzzzzzzzzzz
A: Resending DATA to B...
    SEQ, ACK: 10, 0
    PAYLOAD: aaaaaaaaaaaaaaaaaaa
A: Resending DATA to B...
    SEQ, ACK: 11, 0
    PAYLOAD: bbbbbbbbbbbbbbbbbbbb
        TOLAYER3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 12, 0
    PAYLOAD: ccccccccccccccccccc
A: Resending DATA to B...
    SEQ, ACK: 13, 0
    PAYLOAD: ddddddddddBBBBBBBBB
        TOLAYER3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 14, 0
    PAYLOAD: eeeeeeeeeeeeeeeeeeee
A: Resending DATA to B...
    SEQ, ACK: 15, 0
    PAYLOAD: fffffffffffffffffff

EVENT time: 546.895962, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: bbbbbbbbbbbbbbffff

EVENT time: 547.257759, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 2, 0
    PAYLOAD: sssssssssssssssssss
    EXPECTED SNUM: 8
B: Resending previous ACK to A...
    SEQ, ACK: 0, 7

EVENT time: 548.740959, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 7
A: Rejecting ACK from B... (pending ACK 8)

EVENT time: 552.095950, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 7
A: Rejecting ACK from B... (pending ACK 8)

EVENT time: 556.134373, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 4, 0
    PAYLOAD: uuuuuuuuuuuuuuuuuuu
    EXPECTED SNUM: 8
B: Resending previous ACK to A...
    SEQ, ACK: 0, 7
        TOLAYER3: packet being corrupted

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```
EVENT time: 557.962584, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: cccccccccccccccccccc

EVENT time: 559.498428, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 5, 0
    PAYLOAD: vvvvvvvvvvvvvvvvvv
    EXPECTED SNUM: 8
B: Resending previous ACK to A...
    SEQ, ACK: 0, 7

EVENT time: 561.131535, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 6, 0
    PAYLOAD: wwwwwwwwwwwwwwwwwww
    EXPECTED SNUM: 8
B: Resending previous ACK to A...
    SEQ, ACK: 0, 7
    TOLAYER3: packet being corrupted

EVENT time: 565.194494, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
    SEQ, ACK: 8, 0
    PAYLOAD: yyyyyyyyyyyyyyyyyyyy
A: Resending DATA to B...
    SEQ, ACK: 9, 0
    PAYLOAD: zzzzzzzzzzzzzzzz
    TOLAYER3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 10, 0
    PAYLOAD: aaaaaaaaaaaaaaaaaaa
A: Resending DATA to B...
    SEQ, ACK: 11, 0
    PAYLOAD: bbbbbbbbbbbbbbbbbbb
A: Resending DATA to B...
    SEQ, ACK: 12, 0
    PAYLOAD: cccccccccccccccccc
A: Resending DATA to B...
    SEQ, ACK: 13, 0
    PAYLOAD: ddddddddddcccccccc
A: Resending DATA to B...
    SEQ, ACK: 14, 0
    PAYLOAD: eeeeeeeeeeeeeeee
A: Resending DATA to B...
    SEQ, ACK: 15, 0
    PAYLOAD: ffffffffffffffff

EVENT time: 565.398816, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 999999
A: packet ACK corrupted.
A: Rejecting ACK from B... (pending ACK 8)
```

```
EVENT time: 567.680898, type: 1, fromlayer5 entity: 0
Simulator terminated at time 567.680898464919

STATISTICS:
Messages arrived to A: 55
Packets sent from A: 220
Packets retransmitted: 188
Correct acks: 24
Corrupted packets: 40
```

Caso 3:

La probabilità di corruzione e perdita del pacchetto è 0.5. Quando c'è corruzione e non viene ricevuto il pacchetto entro lo scadere del timer, viene ri-trasmessa l'intera finestra, come si può notare nella seconda figura sottostante. Tuttavia, dato che la grandezza del buffer è limitata a 50 elementi e la probabilità di perdita e corruzione è molto alta, non c'è stato un caso nel nostro test in cui abbiamo riscontrato 20 pacchetti correttamente ackati, ma ciò non significa che non sia possibile ottenerli poiché tutto dipende da quali pacchetti vengono corrotti e/o perduti. Nel caso sottostante si può notare comunque il corretto funzionamento del protocollo. Il totale dei pacchetti ackati è 11, al riempirsi del buffer il programma termina mostrando un messaggio.

```

Enter number of messages to simulate: 70
Enter packet loss probability [enter 0.0 for no loss]:0.5
Enter packet corruption probability [0.0 for no corruption]:0.5
Enter average time between messages from sender's layer5 [> 0.0]:10
Enter window size [>0]:8
Enter retransmission timeout [> 0.0]:20
Enter trace level:2
Enter random seed: [>0]:2233

EVENT time: 9.181188, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
DATA:aaaaaaaaaaaaaaaaaaaa
A: Sending new DATA to B...
SEQ, ACK: 0, 0
PAYLOAD:aaaaaaaaaaaaaaaaaaaa
TOLAYER3: packet being corrupted

EVENT time: 11.710562, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
DATA:bbbbbbbbbbbbbbbbbbb
A: Sending new DATA to B...
SEQ, ACK: 1, 0
PAYLOAD:bbbbbbbbbbbbbbbbbbb

EVENT time: 14.562120, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 0, 0
PAYLOAD: ?aaaaaaaaaaaaaaaa
EXPECTED SNUM: 0
B: Resending previous ACK to A...
SEQ, ACK: 0, 15

EVENT time: 17.071139, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 1, 0
PAYLOAD: bbbbbbbbbbbbbb
EXPECTED SNUM: 0
B: Resending previous ACK to A...
SEQ, ACK: 0, 15

EVENT time: 23.490646, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
SEQ, ACK: 0, 15
A: Rejecting ACK from B... (pending ACK 0)

EVENT time: 29.176305, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
DATA:cccccccccccccccccc
A: Sending new DATA to B...
SEQ, ACK: 2, 0
PAYLOAD:cccccccccccccccccc
TOLAYER3: packet being corrupted

EVENT time: 29.181188, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
SEQ, ACK: 0, 0
PAYLOAD:aaaaaaaaaaaaaaaaaa
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 1, 0
PAYLOAD:bbbbbbbbbbbbbbbbbb
TOLAYER3: packet being lost

```

```

EVENT time: 29.181188, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
SEQ, ACK: 0, 0
PAYLOAD:aaaaaaaaaaaaaaaaaaaaaa
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 1, 0
PAYLOAD:bbbbbbbbbbbbbbbbbbbbbb
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 2, 0
PAYLOAD:cccccccccccccccccc
TOLAYER3: packet being corrupted

EVENT time: 31.216773, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
DATA:ddddddddddddd
A: Sending new DATA to B...
SEQ, ACK: 3, 0
PAYLOAD:ddddddddddddd
TOLAYER3: packet being lost

EVENT time: 31.881375, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
SEQ, ACK: 0, 15
A: Rejecting ACK from B... (pending ACK 0)

EVENT time: 34.024934, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 2, 0
PAYLOAD:?cccccccccccccccc
EXPECTED SNUM: 0
B: Resending previous ACK to A...
SEQ, ACK: 0, 15
TOLAYER3: packet being lost

EVENT time: 42.254982, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 2, 99999
PAYLOAD:cccccccccccccccc
EXPECTED SNUM: 0
B: Resending previous ACK to A...
SEQ, ACK: 0, 15

EVENT time: 46.134831, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
DATA:eeeeeeeeeeeeeeeeee
A: Sending new DATA to B...
SEQ, ACK: 4, 0
PAYLOAD:eeeeeeeeeeeeeeeeee

EVENT time: 48.403607, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
SEQ, ACK: 0, 15
A: Rejecting ACK from B... (pending ACK 0)

```

```
EVENT time: 48.481796, type: 2, fromlayer3 entity: 1
  B: Receiving DATA from A...
    SEQ, ACK: 4, 0
    PAYLOAD: eeeeeeeeeeeeeeeeeeee
    EXPECTED SNUM: 0
  B: Resending previous ACK to A...
    SEQ, ACK: 0, 15
      TOLAYER3: packet being corrupted

EVENT time: 49.181188, type: 0, timerinterrupt entity: 0
  A: Resending DATA to B...
    SEQ, ACK: 0, 0
    PAYLOAD: aaaaaaaaaaaaaaaaaaaa
    TOLAYER3: packet being lost
  A: Resending DATA to B...
    SEQ, ACK: 1, 0
    PAYLOAD: bbbbbbbbbbbbbbbbbbbb
    TOLAYER3: packet being corrupted
  A: Resending DATA to B...
    SEQ, ACK: 2, 0
    PAYLOAD: ccccccccccccccccccc
    TOLAYER3: packet being corrupted
  A: Resending DATA to B...
    SEQ, ACK: 3, 0
    PAYLOAD: ddddddddddcccccccccc
    TOLAYER3: packet being corrupted
  A: Resending DATA to B...
    SEQ, ACK: 4, 0
    PAYLOAD: eeeeeeeeeeeeeeeeeeee

EVENT time: 52.539384, type: 2, fromlayer3 entity: 0
  A: Receiving ACK from B...
    SEQ, ACK: 0, 15
  A: packet ACK corrupted.
  A: Rejecting ACK from B... (pending ACK 0)

EVENT time: 53.382427, type: 2, fromlayer3 entity: 1
  B: Receiving DATA from A...
    SEQ, ACK: 1, 0
    PAYLOAD: ?bbbbbbbbbbbbbbbbbbb
    EXPECTED SNUM: 0
  B: Resending previous ACK to A...
    SEQ, ACK: 0, 15
      TOLAYER3: packet being lost

EVENT time: 55.994751, type: 1, fromlayer5 entity: 0
  A: Receiving MSG from layer 5...
    DATA: ffffffffffffffff
  A: Sending new DATA to B...
    SEQ, ACK: 5, 0
    PAYLOAD: ffffffffffffffff
      TOLAYER3: packet being lost

EVENT time: 58.933073, type: 1, fromlayer5 entity: 0
  A: Receiving MSG from layer 5...
    DATA: ggggggggggggggggggg
  A: Sending new DATA to B...      58
    SEQ, ACK: 6, 0
    PAYLOAD: ggggggggggggggggg
      TOLAYER3: packet being corrupted
```

```

EVENT time: 59.699423, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 2, 0
    PAYLOAD: ?cccccccccccccccccc
    EXPECTED SNUM: 0
B: Resending previous ACK to A...
    SEQ, ACK: 0, 15
        TOLAYER3: packet being lost

EVENT time: 65.239662, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 3, 999999
    PAYLOAD: ddddddddddBBBBBBBB
    EXPECTED SNUM: 0
B: Resending previous ACK to A...
    SEQ, ACK: 0, 15

EVENT time: 69.181188, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
    SEQ, ACK: 0, 0
    PAYLOAD:aaaaaaaaaaaaaaaaaaaa
        TOLAYER3: packet being corrupted
A: Resending DATA to B...
    SEQ, ACK: 1, 0
    PAYLOAD:bbbbbbbbBBBBBBBBBB
        TOLAYER3: packet being corrupted
A: Resending DATA to B...
    SEQ, ACK: 2, 0
    PAYLOAD:cccccccccccccccccc
        TOLAYER3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 3, 0
    PAYLOAD: ddddddddddBBBBBBBB
        TOLAYER3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 4, 0
    PAYLOAD:eeeeeeeeeeeeeeeeee
        TOLAYER3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 5, 0
    PAYLOAD: ffffffffffffff
        TOLAYER3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 6, 0
    PAYLOAD: ggggggggggggggggggg
        TOLAYER3: packet being corrupted

EVENT time: 69.251381, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 15
A: Rejecting ACK from B... (pending ACK 0)

EVENT time: 72.929991, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 4, 0
    PAYLOAD:eeeeeeeeeeeeeeeeee
    EXPECTED SNUM: 0
B: Resending previous ACK to A...
    SEQ, ACK: 0, 15

```

```

EVENT time: 76.867275, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 6, 0
PAYLOAD: ?gggggggggggggggggg
EXPECTED SNUM: 0
B: Resending previous ACK to A...
SEQ, ACK: 0, 15

EVENT time: 76.968902, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
DATA: hhhhhhhhhhhhhhhhhhh
A: Sending new DATA to B...
SEQ, ACK: 7, 0
PAYLOAD: hhhhhhhhhhhhhhhhhhh
TOLAYER3: packet being corrupted

EVENT time: 77.573992, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
SEQ, ACK: 0, 15
A: Rejecting ACK from B... (pending ACK 0)

EVENT time: 78.770104, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
DATA: iiiiiiiiiiiiiiiiii

EVENT time: 82.595935, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 0, 0
PAYLOAD: ?aaaaaaaaaaaaaaaaaa
EXPECTED SNUM: 0
B: Resending previous ACK to A...
SEQ, ACK: 0, 15

EVENT time: 84.932798, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
SEQ, ACK: 0, 15
A: Rejecting ACK from B... (pending ACK 0)

EVENT time: 86.713126, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
SEQ, ACK: 0, 15
A: Rejecting ACK from B... (pending ACK 0)

EVENT time: 88.353710, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 1, 0
PAYLOAD: ?bbbbbbbbbbbbbbbbbb
EXPECTED SNUM: 0
B: Resending previous ACK to A...
SEQ, ACK: 0, 15
TOLAYER3: packet being corrupted

```

```

EVENT time: 89.181188, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
    SEQ, ACK: 0, 0
    PAYLOAD:aaaaaaaaaaaaaaaaaaaa
        TOLAYER3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 1, 0
    PAYLOAD:bbbbbbbbbbbbbbbbbbbb
        TOLAYER3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 2, 0
    PAYLOAD:cccccccccccccccccc
A: Resending DATA to B...
    SEQ, ACK: 3, 0
    PAYLOAD:ddddddddddddd
        TOLAYER3: packet being corrupted
A: Resending DATA to B...
    SEQ, ACK: 4, 0
    PAYLOAD:eeeeeeeeeeeeeeeeee
A: Resending DATA to B...
    SEQ, ACK: 5, 0
    PAYLOAD:ffffffffffff
        TOLAYER3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 6, 0
    PAYLOAD:gggggggggggggggggg
A: Resending DATA to B...
    SEQ, ACK: 7, 0
    PAYLOAD:hhhhhhhhhhhhhhhhhh
        TOLAYER3: packet being lost

EVENT time: 91.162450, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: jjjjjjjjjjjjjjjjjj

EVENT time: 92.883175, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 6, 0
    PAYLOAD: ?gggggggggggggggggg
    EXPECTED SNUM: 0
B: Resending previous ACK to A...
    SEQ, ACK: 0, 15

EVENT time: 93.445143, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 999999
A: packet ACK corrupted.
A: Rejecting ACK from B... (pending ACK 0)

EVENT time: 94.540178, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 15
A: Rejecting ACK from B... (pending ACK 0)

EVENT time: 94.589068, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: kkkkkkkkkkkkkkkkk

```

EVENT time: 102.116153, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
DATA: 11111111111111111111111111111111

EVENT time: 102.389325, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 7, 0
PAYLOAD: ?hhhhhhhhhhhhhhhhhhhh
EXPECTED SNUM: 0
B: Resending previous ACK to A...
SEQ, ACK: 0, 15
TOLAYER3: packet being corrupted

EVENT time: 104.676687, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 2, 0
PAYLOAD: ccccccccccccccccccccc
EXPECTED SNUM: 0
B: Resending previous ACK to A...
SEQ, ACK: 0, 15
TOLAYER3: packet being lost

EVENT time: 105.012329, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
SEQ, ACK: 0, 15
A: packet ACK corrupted.
A: Rejecting ACK from B... (pending ACK 0)

EVENT time: 106.411695, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 3, 0
PAYLOAD: ?ddddddddd dddd dddd
EXPECTED SNUM: 0
B: Resending previous ACK to A...
SEQ, ACK: 0, 15
TOLAYER3: packet being lost

```

EVENT time: 109.181188, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
SEQ, ACK: 0, 0
PAYLOAD:aaaaaaaaaaaaaaaaaaaa
A: Resending DATA to B...
SEQ, ACK: 1, 0
PAYLOAD:bbbbbbbbbbbbbbbbbbb
A: Resending DATA to B...
SEQ, ACK: 2, 0
PAYLOAD:cccccccccccccccccc
    TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 3, 0
PAYLOAD:ddddddddddddd
    TOLAYER3: packet being corrupted
A: Resending DATA to B...
SEQ, ACK: 4, 0
PAYLOAD:eeeeeeeeeeeeeeeeee
    TOLAYER3: packet being corrupted
A: Resending DATA to B...
SEQ, ACK: 5, 0
PAYLOAD:ffffffffffff
    TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 6, 0
PAYLOAD:gggggggggggggggggg
A: Resending DATA to B...
SEQ, ACK: 7, 0
PAYLOAD:hhhhhhhhhhhhhhhhh

EVENT time: 112.803125, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
DATA: mmmmmmmmmmmmmmmmmmm

EVENT time: 115.669546, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 4, 0
PAYLOAD:eeeeeeeeeeeeeeeeee
EXPECTED SNUM: 0
B: Resending previous ACK to A...
SEQ, ACK: 0, 15
    TOLAYER3: packet being corrupted

EVENT time: 116.520280, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
DATA: nnnnnnnnnnnnnnnnnnn

EVENT time: 120.243507, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
SEQ, ACK: 0, 15
A: packet ACK corrupted.
A: Rejecting ACK from B... (pending ACK 0)

EVENT time: 121.271035, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 6, 0
PAYLOAD:gggggggggggggggggg
EXPECTED SNUM: 0
B: Resending previous ACK to A...
SEQ, ACK: 0, 15
    TOLAYER3: packet being lost

```

```

EVENT time: 125.757103, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 0, 0
PAYLOAD:aaaaaaaaaaaaaaaaaaaa
EXPECTED SNUM: 0
B: Sending ACK to A...
SEQ, ACK: 0, 2

EVENT time: 129.181188, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
SEQ, ACK: 0, 0
PAYLOAD:aaaaaaaaaaaaaaaaaaaa
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 1, 0
PAYLOAD:bbbbbbbbbbbbbbbbbbbb
A: Resending DATA to B...
SEQ, ACK: 2, 0
PAYLOAD:cccccccccccccccccc
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 3, 0
PAYLOAD:dddddddddBBBBBBBBBB
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 4, 0
PAYLOAD:eeeeeeeeeeeeeeeeee
A: Resending DATA to B...
SEQ, ACK: 5, 0
PAYLOAD:ffffffffffffffffff
TOLAYER3: packet being corrupted
A: Resending DATA to B...
SEQ, ACK: 6, 0
PAYLOAD:gggggggggggggggggg
TOLAYER3: packet being corrupted
A: Resending DATA to B...
SEQ, ACK: 7, 0
PAYLOAD:hhhhhhhhhhhhhhhhh

EVENT time: 129.616382, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
DATA:oooooooooooooooooooo

EVENT time: 130.294504, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
DATA:pppppppppppppppppp

EVENT time: 134.567248, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 1, 0
PAYLOAD:bbbbbbbbbbbbbbbbbb
EXPECTED SNUM: 3
B: Resending previous ACK to A...
SEQ, ACK: 0, 2
TOLAYER3: packet being lost

```

```

EVENT time: 135.478042, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 2
A: Accepting ACK from B...
A: Sending new DATA to B...
    SEQ, ACK: 8, 0
    PAYLOAD: iiiiiiiiiiiiiiii
        TOLAYER3: packet being corrupted
A: Sending new DATA to B...
    SEQ, ACK: 9, 0
    PAYLOAD: jjjjjjjjjjjjjjjjjj
        TOLAYER3: packet being lost
A: Sending new DATA to B...
    SEQ, ACK: 10, 0
    PAYLOAD: kkkkkkkkkkkkkkkkk

EVENT time: 144.530168, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 3, 0
    PAYLOAD: ?ddddddddd
    EXPECTED SNUM: 3
B: Resending previous ACK to A...
    SEQ, ACK: 0, 2
        TOLAYER3: packet being lost

EVENT time: 149.752495, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: qqqqqqqqqqqqqqqqqqq

EVENT time: 151.181707, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 4, 0
    PAYLOAD: ?eeeeeeeeeeeeeeee
    EXPECTED SNUM: 3
B: Resending previous ACK to A...
    SEQ, ACK: 0, 2

EVENT time: 155.478042, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
    SEQ, ACK: 3, 0
    PAYLOAD: dddddddddd
        TOLAYER3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 4, 0
    PAYLOAD: eeeeeeeeeeeeeeee
        TOLAYER3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 5, 0
    PAYLOAD: ffffffffffffff
        TOLAYER3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 6, 0
    PAYLOAD: ggggggggggggggggg
A: Resending DATA to B...
    SEQ, ACK: 7, 0
    PAYLOAD: hhhhhhhhhhhhhhhh
        TOLAYER3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 8, 0
    PAYLOAD: iiiiiiiiiiiiiiii
        TOLAYER3: packet being lost
A: Resending DATA to B...          65
    SEQ, ACK: 9, 0

```

```
EVENT time: 155.478042, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
SEQ, ACK: 3, 0
PAYLOAD: ddddddddddBBBBBBBB
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 4, 0
PAYLOAD: eeeeeeeeeeeeeeee
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 5, 0
PAYLOAD: ffffffffffffff
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 6, 0
PAYLOAD: ggggggggggggggggg
A: Resending DATA to B...
SEQ, ACK: 7, 0
PAYLOAD: hhhhhhhhhhhhhhhh
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 8, 0
PAYLOAD: iiiiiiiiiiiiiii
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 9, 0
PAYLOAD: jjjjjjjjjjjjjjjjj
TOLAYER3: packet being corrupted
A: Resending DATA to B...
SEQ, ACK: 10, 0
PAYLOAD: kkkkkkkkkkkkkkkkkk
TOLAYER3: packet being lost

EVENT time: 159.179937, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
SEQ, ACK: 0, 2
A: Rejecting ACK from B... (pending ACK 3)

EVENT time: 160.178900, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 6, 0
PAYLOAD: ggggggggggggggggg
EXPECTED SNUM: 3
B: Resending previous ACK to A...
SEQ, ACK: 0, 2
TOLAYER3: packet being lost

EVENT time: 162.398144, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 7, 0
PAYLOAD: hhhhhhhhhhhhhhhh
EXPECTED SNUM: 3
B: Resending previous ACK to A...
SEQ, ACK: 0, 2
TOLAYER3: packet being lost

EVENT time: 163.759880, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5..66
DATA: rrrrrrrrrrrrrrrrr
```

```
EVENT time: 171.852382, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 1, 0
    PAYLOAD: bbbbbbbbbbbbbbbbbbbb
    EXPECTED SNUM: 3
B: Resending previous ACK to A...
    SEQ, ACK: 0, 2
        TOLAYER3: packet being corrupted

EVENT time: 175.478042, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
    SEQ, ACK: 3, 0
    PAYLOAD: dddddddddd dddd dddd dddd
        TOLAYER3: packet being corrupted
A: Resending DATA to B...
    SEQ, ACK: 4, 0
    PAYLOAD: eeeeeeeeeeeeeeeeeee
        TOLAYER3: packet being corrupted
A: Resending DATA to B...
    SEQ, ACK: 5, 0
    PAYLOAD: ffffffff ffffffff
        TOLAYER3: packet being corrupted
A: Resending DATA to B...
    SEQ, ACK: 6, 0
    PAYLOAD: ggggggggggggggggggggggggg
        TOLAYER3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 7, 0
    PAYLOAD: hhhhhhhhhhhhhhhhhhh
A: Resending DATA to B...
    SEQ, ACK: 8, 0
    PAYLOAD: iiiiiiiiiiiiiii
        TOLAYER3: packet being corrupted
A: Resending DATA to B...
    SEQ, ACK: 9, 0
    PAYLOAD: jjjjjjjjjjjjjjjjjj
        TOLAYER3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 10, 0
    PAYLOAD: kkkkkkkkkkkkkkkkkkk
        TOLAYER3: packet being lost

EVENT time: 177.297037, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 2
A: packet ACK corrupted.
A: Rejecting ACK from B... (pending ACK 3)

EVENT time: 177.831812, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 4, 0
    PAYLOAD: eeeeeeeeeeeeeeeeeee
    EXPECTED SNUM: 3
B: Resending previous ACK to A...
    SEQ, ACK: 0, 2
        TOLAYER3: packet being corrupted
```

EVENT time: 195.478042, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
SEQ, ACK: 3, 0
PAYLOAD: ddddddddddBBBBBBBB
TOLAYER3: packet being corrupted
A: Resending DATA to B...
SEQ, ACK: 4, 0
PAYLOAD: eeeeeeeeeeeeeeeeeeee
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 5, 0
PAYLOAD: ffffffffBBBBBBBBBB
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 6, 0
PAYLOAD: ggggggggggggggggggg
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 7, 0
PAYLOAD: hhhhhhhhhhhhhhhhhh
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 8, 0
PAYLOAD: iiiiiiiiiiiiiiiii
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 9, 0
PAYLOAD: jjjjjjjjjjjjjjjjjj
TOLAYER3: packet being corrupted
A: Resending DATA to B...
SEQ, ACK: 10, 0
PAYLOAD: kkkkkkkkkkkkkkkkk

EVENT time: 195.483627, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 7, 0
PAYLOAD: hhhhhhhhhhhhhhhhhh
EXPECTED SNUM: 3
B: Resending previous ACK to A...
SEQ, ACK: 0, 2
TOLAYER3: packet being lost

EVENT time: 197.797082, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 8, 0
PAYLOAD: ?iiiiiiiiiiiiiiii
EXPECTED SNUM: 3
B: Resending previous ACK to A...
SEQ, ACK: 0, 2
TOLAYER3: packet being corrupted

EVENT time: 200.884426, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
DATA: VVVVVVVVVVVVVVVVVVV

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EVENT time: 200.957884, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 10, 0
    PAYLOAD: kkkkkkkkkkkkkkkkkkk
    EXPECTED SNUM: 3
B: Resending previous ACK to A...
    SEQ, ACK: 0, 2
        TOLAYER3: packet being lost

EVENT time: 201.244911, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 2
A: packet ACK corrupted.
A: Rejecting ACK from B... (pending ACK 3)

EVENT time: 206.023499, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 6, 0
    PAYLOAD: ggggggggggggggggggg
    EXPECTED SNUM: 3
B: Resending previous ACK to A...
    SEQ, ACK: 0, 2

EVENT time: 213.113193, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: wwwwwwwwwwwwwwwww

EVENT time: 214.461470, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 9, 999999
    PAYLOAD: jjjjjjjjjjjjjjjjjjjj
    EXPECTED SNUM: 3
B: Resending previous ACK to A...
    SEQ, ACK: 0, 2

EVENT time: 214.763329, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 2
A: Rejecting ACK from B... (pending ACK 3)

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EVENT time: 215.478042, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
SEQ, ACK: 3, 0
PAYLOAD: ddddddddddBBBBBBBBBB
A: Resending DATA to B...
SEQ, ACK: 4, 0
PAYLOAD: eeeeeeeeeeeeeeeeeeee
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 5, 0
PAYLOAD: fffffffffffffFFFFFFF
A: Resending DATA to B...
SEQ, ACK: 6, 0
PAYLOAD: ggggggggggggggggggggg
A: Resending DATA to B...
SEQ, ACK: 7, 0
PAYLOAD: hhhhhhhhhhhhhhhhhhhh
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 8, 0
PAYLOAD: iiiiiiiiiiiiiiii
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 9, 0
PAYLOAD: jjjjjjjjjjjjjjjjjj
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 10, 0
PAYLOAD: kkkkkkkkkkkkkkkkk
TOLAYER3: packet being corrupted

EVENT time: 216.883419, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
SEQ, ACK: 0, 2
A: Rejecting ACK from B... (pending ACK 3)

EVENT time: 223.711081, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 3, 0
PAYLOAD: ?dddddBBBBBBBBBBBBBB
EXPECTED SNUM: 3
B: Resending previous ACK to A...
SEQ, ACK: 0, 2
TOLAYER3: packet being corrupted

EVENT time: 227.996368, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 999999, 0
PAYLOAD: eeeeeeeeeeeeeeeeeeee
EXPECTED SNUM: 3
B: Resending previous ACK to A...
SEQ, ACK: 0, 2
TOLAYER3: packet being lost

EVENT time: 228.899197, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
SEQ, ACK: 0, 2
A: packet ACK corrupted.
A: Rejecting ACK from B... (pending ACK 3)

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EVENT time: 229.307016, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 5, 0
PAYLOAD: ?fffffffffffff
EXPECTED SNUM: 3
B: Resending previous ACK to A...
SEQ, ACK: 0, 2
TOLAYER3: packet being lost

EVENT time: 231.909146, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 7, 0
PAYLOAD: hhhhhhhhhhhhhhhhh
EXPECTED SNUM: 3
B: Resending previous ACK to A...
SEQ, ACK: 0, 2
TOLAYER3: packet being lost

EVENT time: 232.038331, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
DATA: xxxxxxxxxxxxxxxxxxxx

EVENT time: 235.478042, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
SEQ, ACK: 3, 0
PAYLOAD: dddddddddd
TOLAYER3: packet being corrupted
A: Resending DATA to B...
SEQ, ACK: 4, 0
PAYLOAD: eeeeeeeeeeeeeeee
TOLAYER3: packet being corrupted
A: Resending DATA to B...
SEQ, ACK: 5, 0
PAYLOAD: ffffffff
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 6, 0
PAYLOAD: ggggggggggggggggg
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 7, 0
PAYLOAD: hhhhhhhhhhhhhhh
TOLAYER3: packet being corrupted
A: Resending DATA to B...
SEQ, ACK: 8, 0
PAYLOAD: iiiiiiiiiiiiii
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 9, 0
PAYLOAD: jjjjjjjjjjjjjjjj
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 10, 0
PAYLOAD: kkkkkkkkkkkkkkkkk

EVENT time: 238.976409, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
DATA: yyyyyyyyyyyyyyyyyy

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EVENT time: 241.626240, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 8, 0
PAYLOAD: ?iiiiiiiiiiiiiiii
EXPECTED SNUM: 3
B: Resending previous ACK to A...
SEQ, ACK: 0, 2
TOLAYER3: packet being lost

EVENT time: 250.861568, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 3, 0
PAYLOAD: ?dddddddddccccccccc
EXPECTED SNUM: 3
B: Resending previous ACK to A...
SEQ, ACK: 0, 2
TOLAYER3: packet being lost

EVENT time: 253.799860, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
DATA: zzzzzzzzzzzzzzzzzzz

EVENT time: 254.358287, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 9, 0
PAYLOAD: ?jjjjjjjjjjjjjjjjjj
EXPECTED SNUM: 3
B: Resending previous ACK to A...
SEQ, ACK: 0, 2
TOLAYER3: packet being lost

EVENT time: 255.478042, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
SEQ, ACK: 3, 0
PAYLOAD: ddddddccccccccc
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 4, 0
PAYLOAD: eeeeeeeeeeeeeeee
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 5, 0
PAYLOAD: ffffffffffffffff
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 6, 0
PAYLOAD: ggggggggggggggggg
A: Resending DATA to B...
SEQ, ACK: 7, 0
PAYLOAD: hhhhhhhhhhhhhhhh
A: Resending DATA to B...
SEQ, ACK: 8, 0
PAYLOAD: iiii
A: Resending DATA to B...
SEQ, ACK: 9, 0
PAYLOAD: jjjjjjjjjjjjjjjj
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 10, 0
PAYLOAD: kkkkkkkkkkkkkkkkk
TOLAYER3: packet being lost

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EVENT time: 256.361644, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 10, 0
PAYLOAD: kkkkkkkkkkkkkkkkkkk
EXPECTED SNUM: 3
B: Resending previous ACK to A...
SEQ, ACK: 0, 2
TOLAYER3: packet being corrupted

EVENT time: 261.053499, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
DATA:aaaaaaaaaaaaaaaaaaaaaa

EVENT time: 264.111026, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
SEQ, ACK: 999999, 2
A: packet ACK corrupted.
A: Rejecting ACK from B... (pending ACK 3)

EVENT time: 264.988311, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 3, 0
PAYLOAD: dddddddddd dddd dddd
EXPECTED SNUM: 3
B: Sending ACK to A...
SEQ, ACK: 0, 4
TOLAYER3: packet being lost

EVENT time: 270.145116, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 5, 0
PAYLOAD: ffffffffffffff ffffff
EXPECTED SNUM: 5
B: Sending ACK to A...
SEQ, ACK: 0, 7

EVENT time: 273.555101, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
DATA: bbbbbbbbbb bbbb bbbb

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EVENT time: 274.102725, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 7
A: Accepting ACK from B...
A: Sending new DATA to B...
    SEQ, ACK: 11, 0
    PAYLOAD: 111111111111111111
        TOLAYER3: packet being lost
A: Sending new DATA to B...
    SEQ, ACK: 12, 0
    PAYLOAD: mmmmmmmmmmmmmmmmmmm
        TOLAYER3: packet being lost
A: Sending new DATA to B...
    SEQ, ACK: 13, 0
    PAYLOAD: nnnnnnnnnnnnnnnnnn
        TOLAYER3: packet being corrupted
A: Sending new DATA to B...
    SEQ, ACK: 14, 0
    PAYLOAD: oooooooooooooooo
        TOLAYER3: packet being corrupted
A: Sending new DATA to B...
    SEQ, ACK: 15, 0
    PAYLOAD: pppppppppppppppppp
        TOLAYER3: packet being corrupted

EVENT time: 276.685141, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 6, 0
    PAYLOAD: ggggggggggggggggggg
    EXPECTED SNUM: 8
B: Resending previous ACK to A...
    SEQ, ACK: 0, 7
        TOLAYER3: packet being lost

EVENT time: 282.336344, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 10, 0
    PAYLOAD: ?kkkkkkkkkkkkkkkkk
    EXPECTED SNUM: 8
B: Resending previous ACK to A...
    SEQ, ACK: 0, 7
        TOLAYER3: packet being lost

EVENT time: 282.487869, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: cccccccccccccccc

EVENT time: 283.681600, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 3, 0
    PAYLOAD: ?ddddddddd dddd
    EXPECTED SNUM: 8
B: Resending previous ACK to A...
    SEQ, ACK: 0, 7
        TOLAYER3: packet being lost

EVENT time: 285.729545, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: dddddd dddddd dddddd

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EVENT time: 286.452223, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: eeeeeeeeeeeeeeeeeeee

EVENT time: 289.782983, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 4, 0
    PAYLOAD: ?eeeeeeeeeeeeeeeeee
    EXPECTED SNUM: 8
B: Resending previous ACK to A...
    SEQ, ACK: 0, 7

EVENT time: 294.102725, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
    SEQ, ACK: 8, 0
    PAYLOAD: iiiiiiiiiiiiiiiii
A: Resending DATA to B...
    SEQ, ACK: 9, 0
    PAYLOAD: jjjjjjjjjjjjjjjjjj
    TOLAYER3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 10, 0
    PAYLOAD: kkkkkkkkkkkkkkkkkkk
    TOLAYER3: packet being corrupted
A: Resending DATA to B...
    SEQ, ACK: 11, 0
    PAYLOAD: 111111111111111111
    TOLAYER3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 12, 0
    PAYLOAD: mmmmmmmmmmmmmmmmmmm
    TOLAYER3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 13, 0
    PAYLOAD: nnnnnnnnnnnnnnnnnnn
    TOLAYER3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 14, 0
    PAYLOAD: oooooooooooooooooooo
    TOLAYER3: packet being corrupted
A: Resending DATA to B...
    SEQ, ACK: 15, 0
    PAYLOAD: ppppppppppppppppppp
    TOLAYER3: packet being corrupted

EVENT time: 297.507645, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 7, 0
    PAYLOAD: ?hhhhhhhhhhhhhhhhhh
    EXPECTED SNUM: 8
B: Resending previous ACK to A...
    SEQ, ACK: 0, 7
    TOLAYER3: packet being lost
    75

EVENT time: 297.814722, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 7
A: Rejecting ACK from B... (pending ACK 8)

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EVENT time: 302.876064, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
DATA: ffffffffffffffff

EVENT time: 304.779931, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 10, 0
PAYLOAD: kkkkkkkkkkkkkkkkkkk
EXPECTED SNUM: 8
B: Resending previous ACK to A...
SEQ, ACK: 0, 7
TOLAYER3: packet being lost

EVENT time: 305.988678, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 6, 0
PAYLOAD: ggggggggggggggggggg
EXPECTED SNUM: 8
B: Resending previous ACK to A...
SEQ, ACK: 0, 7
TOLAYER3: packet being lost

EVENT time: 314.102725, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
SEQ, ACK: 8, 0
PAYLOAD: iiiiiiiiiiiiiiii
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 9, 0
PAYLOAD: jjjjjjjjjjjjjjjj
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 10, 0
PAYLOAD: kkkkkkkkkkkkkkkkk
A: Resending DATA to B...
SEQ, ACK: 11, 0
PAYLOAD: 1111111111111111
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 12, 0
PAYLOAD: mmmmmmmmmmmmmmmmm
A: Resending DATA to B...
SEQ, ACK: 13, 0
PAYLOAD: nnnnnnnnnnnnnnnnn
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 14, 0
PAYLOAD: oooooooooooooooo
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 15, 0
PAYLOAD: ppppppppppppppppp
TOLAYER3: packet being lost

EVENT time: 314.681265, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 7, 0
PAYLOAD: hhhhhhhhhhhhhhhh 76
EXPECTED SNUM: 8
B: Resending previous ACK to A...
SEQ, ACK: 0, 7
```

EVENT time: 317.120243, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
SEQ, ACK: 0, 7
A: Rejecting ACK from B... (pending ACK 8)

EVENT time: 320.805170, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 8, 0
PAYLOAD: iiiiiiiiiiiiiiiii
EXPECTED SNUM: 8
B: Sending ACK to A...
SEQ, ACK: 0, 8
TOLAYER3: packet being lost

EVENT time: 322.422559, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
DATA: ggggggggggggggggggggggg

EVENT time: 328.169195, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 13, 0
PAYLOAD: ?nnnnnnnnnnnnnnnnnn
EXPECTED SNUM: 9
B: Resending previous ACK to A...
SEQ, ACK: 0, 8
TOLAYER3: packet being corrupted

EVENT time: 331.442610, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
SEQ, ACK: 0, 8
A: packet ACK corrupted.
A: Rejecting ACK from B... (pending ACK 8)

EVENT time: 332.157018, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 14, 0
PAYLOAD: ?oooooooooooooooooooo
EXPECTED SNUM: 9
B: Resending previous ACK to A...
SEQ, ACK: 0, 8

EVENT time: 334.102725, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
SEQ, ACK: 8, 0
PAYLOAD: iiiiiiiiiiiiiiii
TOlayer3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 9, 0
PAYLOAD: jjjjjjjjjjjjjjjjjj
A: Resending DATA to B...
SEQ, ACK: 10, 0
PAYLOAD: kkkkkkkkkkkkkkkkk
A: Resending DATA to B...
SEQ, ACK: 11, 0
PAYLOAD: lllllllllllllllllll
TOlayer3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 12, 0
PAYLOAD: mmmmmmmmmmmmmmmmm
TOlayer3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 13, 0
PAYLOAD: nnnnnnnnnnnnnnnnn
TOlayer3: packet being corrupted
A: Resending DATA to B...
SEQ, ACK: 14, 0
PAYLOAD: ooooooooooooooooooo
TOlayer3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 15, 0
PAYLOAD: ppppppppppppppppp
TOlayer3: packet being lost

EVENT time: 337.110508, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
DATA: hhhhhhhhhhhhhhhhh

EVENT time: 338.238075, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
SEQ, ACK: 0, 8
A: Accepting ACK from B...
A: Sending new DATA to B...
SEQ, ACK: 0, 0
PAYLOAD: qqqqqqqqqqqqqqqqqqq

EVENT time: 339.312113, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
DATA: iiiiiiiiiiiiiiii

EVENT time: 339.852840, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 15, 0
PAYLOAD: ?pppppppppppppppp
EXPECTED SNUM: 9
B: Resending previous ACK to A...
SEQ, ACK: 0, 8
TOlayer3: packet being lost

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EVENT time: 343.964812, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 8, 0
    PAYLOAD: iiiiiiiiiiiiiiii
    EXPECTED SNUM: 9
B: Resending previous ACK to A...
    SEQ, ACK: 0, 8
    TOLAYER3: packet being corrupted

EVENT time: 346.236763, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: jjjjjjjjjjjjjjjjjj

EVENT time: 348.632435, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 8
A: packet ACK corrupted.
A: Rejecting ACK from B... (pending ACK 9)

EVENT time: 350.655232, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: kkkkkkkkkkkkkkkkk

EVENT time: 351.114841, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: lllllllllllllllllll

EVENT time: 353.208106, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 10, 0
    PAYLOAD: ?kkkkkkkkkkkkkkkk
    EXPECTED SNUM: 9
B: Resending previous ACK to A...
    SEQ, ACK: 0, 8
    TOLAYER3: packet being lost
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EVENT time: 358.238075, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
SEQ, ACK: 9, 0
PAYLOAD: jjjjjjjjjjjjjjjjjjjjjjjjjj
TOLAYER3: packet being corrupted
A: Resending DATA to B...
SEQ, ACK: 10, 0
PAYLOAD: kkkkkkkkkkkkkkkkkkkkk
TOLAYER3: packet being corrupted
A: Resending DATA to B...
SEQ, ACK: 11, 0
PAYLOAD: lllllllllllllllllllllllll
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 12, 0
PAYLOAD: mmmmmmmmmmmmmmmmmmm
A: Resending DATA to B...
SEQ, ACK: 13, 0
PAYLOAD: nnnnnnnnnnnnnnnnnnn
TOLAYER3: packet being corrupted
A: Resending DATA to B...
SEQ, ACK: 14, 0
PAYLOAD: ooooooooooooooooooooooo
TOLAYER3: packet being corrupted
A: Resending DATA to B...
SEQ, ACK: 15, 0
PAYLOAD: ppppppppppppppppppp
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 0, 0
PAYLOAD: qqqqqqqqqqqqqqqqqqq
TOLAYER3: packet being corrupted

EVENT time: 360.003021, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 14, 0
PAYLOAD: ?oooooooooooooooooooooo
EXPECTED SNUM: 9
B: Resending previous ACK to A...
SEQ, ACK: 0, 8
TOLAYER3: packet being lost

EVENT time: 361.475265, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
DATA: mmmmmmmmmmmmmmmmmmm

EVENT time: 364.899991, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 999999, 0
PAYLOAD: ppppppppppppppppp
EXPECTED SNUM: 9
B: Resending previous ACK to A...
SEQ, ACK: 0, 8
TOLAYER3: packet being lost

EVENT time: 367.595782, type: 2, fromlayer3 entity: 1

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EVENT time: 367.595782, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 10, 0
PAYLOAD: kkkkkkkkkkkkkkkkk
EXPECTED SNUM: 9
B: Resending previous ACK to A...
SEQ, ACK: 0, 8

EVENT time: 374.448927, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
SEQ, ACK: 0, 8
A: Rejecting ACK from B... (pending ACK 9)

EVENT time: 375.949705, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 12, 0
PAYLOAD: mmmmmmmmmmmmmmmmm
EXPECTED SNUM: 9
B: Resending previous ACK to A...
SEQ, ACK: 0, 8
TOLAYER3: packet being lost

EVENT time: 376.500137, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
DATA: nnnnnnnnnnnnnnnnnn

EVENT time: 378.238075, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
SEQ, ACK: 9, 0
PAYLOAD: jjjjjjjjjjjjjjjj
A: Resending DATA to B...
SEQ, ACK: 10, 0
PAYLOAD: kkkkkkkkkkkkkkkkk
A: Resending DATA to B...
SEQ, ACK: 11, 0
PAYLOAD: lllllllllllllllll
TOLAYER3: packet being corrupted
A: Resending DATA to B...
SEQ, ACK: 12, 0
PAYLOAD: mmmmmmmmmmmmmmmmm
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 13, 0
PAYLOAD: nnnnnnnnnnnnnnnnn
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 14, 0
PAYLOAD: ooooooooooooooooooooo
A: Resending DATA to B...
SEQ, ACK: 15, 0
PAYLOAD: ppppppppppppppppp
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 0, 0
PAYLOAD: qqqqqqqqqqqqqqqqqq
TOLAYER3: packet being lost

EVENT time: 378.933897, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A... 81
SEQ, ACK: 9, 0
PAYLOAD: jjjjjjjjjjjjjjjjjj
EXPECTED SNUM: 9
B: Sending ACK to A...

```

```

EVENT time: 378.933897, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 9, 0
PAYLOAD: jjjjjjjjjjjjjjjjjjjjjj
EXPECTED SNUM: 9
B: Sending ACK to A...
SEQ, ACK: 0, 10
TOLAYER3: packet being corrupted

EVENT time: 384.209723, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
DATA: oooooooooooooooooooooooo

EVENT time: 385.186071, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 10, 0
PAYLOAD: kkkkkkkkkkkkkkkkkkk
EXPECTED SNUM: 11
B: Resending previous ACK to A...
SEQ, ACK: 0, 10
TOLAYER3: packet being lost

EVENT time: 386.407239, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
SEQ, ACK: 0, 10
A: packet ACK corrupted.
A: Rejecting ACK from B... (pending ACK 9)

EVENT time: 392.478408, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
DATA: ppppppppppppppppppp

EVENT time: 393.317515, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 13, 999999
PAYLOAD: nnnnnnnnnnnnnnnnnnn
EXPECTED SNUM: 11
B: Resending previous ACK to A...
SEQ, ACK: 0, 10
TOLAYER3: packet being lost

EVENT time: 395.090182, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
DATA: qqqqqqqqqqqqqqqqqqqqqqq

```



```

EVENT time: 425.678091, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 14, 0
PAYLOAD: ?oooooooooooooooooooo
EXPECTED SNUM: 4
B: Resending previous ACK to A...
SEQ, ACK: 0, 3
TOLAYER3: packet being corrupted

EVENT time: 427.908048, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
SEQ, ACK: 0, 3
A: packet ACK corrupted.
A: Rejecting ACK from B... (pending ACK 9)

EVENT time: 428.738639, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 0, 0
PAYLOAD: ?qqqqqqqqqqqqqqqqqqqqqqq
EXPECTED SNUM: 4
B: Resending previous ACK to A...
SEQ, ACK: 0, 3
TOLAYER3: packet being lost

EVENT time: 429.757988, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
DATA: tttttttttttttttt

EVENT time: 436.710227, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 9, 0
PAYLOAD: jjjjjjjjjjjjjjjjjj
EXPECTED SNUM: 4
B: Resending previous ACK to A...
SEQ, ACK: 0, 3

EVENT time: 438.233741, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 10, 0
PAYLOAD: kkkkkkkkkkkkkkkkk
EXPECTED SNUM: 4
B: Resending previous ACK to A...
SEQ, ACK: 0, 3
TOLAYER3: packet being lost

```



```

EVENT time: 456.672750, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 12, 0
    PAYLOAD: mmmmmmmmmmmmmmmmmmm
    EXPECTED SNUM: 4
B: Resending previous ACK to A...
    SEQ, ACK: 0, 3

EVENT time: 456.955931, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 3
A: Rejecting ACK from B... (pending ACK 9)

EVENT time: 458.238075, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
    SEQ, ACK: 9, 0
    PAYLOAD: jjjjjjjjjjjjjjjjjj
    TOLAYER3: packet being corrupted
A: Resending DATA to B...
    SEQ, ACK: 10, 0
    PAYLOAD: kkkkkkkkkkkkkkkkk
    TOLAYER3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 11, 0
    PAYLOAD: lllllllllllllllllll
    TOLAYER3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 12, 0
    PAYLOAD: mmmmmmmmmmmmmmmmm
    TOLAYER3: packet being corrupted
A: Resending DATA to B...
    SEQ, ACK: 13, 0
    PAYLOAD: nnnnnnnnnnnnnnnnn
    TOLAYER3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 14, 0
    PAYLOAD: oooooooooooooooo
    TOLAYER3: packet being corrupted
A: Resending DATA to B...
    SEQ, ACK: 15, 0
    PAYLOAD: ppppppppppppppppp
    TOLAYER3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 0, 0
    PAYLOAD: qqqqqqqqqqqqqqqqqq
    TOLAYER3: packet being corrupted

EVENT time: 459.634999, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: vvvvvvvvvvvvvvvvvv

EVENT time: 462.637898, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 13, 0
    PAYLOAD: ?nnnnnnnnnnnnnnnnn
    EXPECTED SNUM: 4
B: Resending previous ACK to A
    SEQ, ACK: 0, 3

```

```

EVENT time: 465.667470, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 3
A: Rejecting ACK from B... (pending ACK 9)

EVENT time: 467.905942, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 3
A: Rejecting ACK from B... (pending ACK 9)

EVENT time: 468.410504, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 15, 0
    PAYLOAD: ?pppppppppppppppppp
    EXPECTED SNUM: 4
B: Resending previous ACK to A...
    SEQ, ACK: 0, 3
        TOLAYER3: packet being corrupted

EVENT time: 468.725242, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: wwwwwwwwwwwwwwwww

EVENT time: 470.561907, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
    SEQ, ACK: 0, 3
A: packet ACK corrupted.
A: Rejecting ACK from B... (pending ACK 9)

EVENT time: 473.705252, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: xxxxxxxxxxxxxxxxxx

EVENT time: 475.080447, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 12, 0
    PAYLOAD: ?mmmmmmmmmmmmmmmmmm
    EXPECTED SNUM: 4
B: Resending previous ACK to A...
    SEQ, ACK: 0, 3
        TOLAYER3: packet being corrupted

EVENT time: 477.677358, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 13, 0
    PAYLOAD: nnnnnnnnnnnnnnnnnn
    EXPECTED SNUM: 4
B: Resending previous ACK to A...
    SEQ, ACK: 0, 3
        TOLAYER3: packet being lost

```

```

EVENT time: 478.238075, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
SEQ, ACK: 9, 0
PAYLOAD: jjjjjjjjjjjjjjjjjj
A: Resending DATA to B...
SEQ, ACK: 10, 0
PAYLOAD: kkkkkkkkkkkkkkkkk
TOLAYER3: packet being corrupted
A: Resending DATA to B...
SEQ, ACK: 11, 0
PAYLOAD: lllllllllllllllllll
A: Resending DATA to B...
SEQ, ACK: 12, 0
PAYLOAD: mmmmmmmmmmmmmmmmm
TOLAYER3: packet being corrupted
A: Resending DATA to B...
SEQ, ACK: 13, 0
PAYLOAD: nnnnnnnnnnnnnnnnn
TOLAYER3: packet being corrupted
A: Resending DATA to B...
SEQ, ACK: 14, 0
PAYLOAD: ooooooooooooooooooo
TOLAYER3: packet being corrupted
A: Resending DATA to B...
SEQ, ACK: 15, 0
PAYLOAD: ppppppppppppppppp
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 0, 0
PAYLOAD: qqqqqqqqqqqqqqqqqq

EVENT time: 478.249763, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
SEQ, ACK: 0, 3
A: packet ACK corrupted.
A: Rejecting ACK from B... (pending ACK 9)

EVENT time: 483.447493, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 14, 999999
PAYLOAD: ooooooooooooooooooooo
EXPECTED SNUM: 4
B: Resending previous ACK to A...
SEQ, ACK: 0, 3
TOLAYER3: packet being corrupted

EVENT time: 491.328166, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 0, 0
PAYLOAD: ?qqqqqqqqqqqqqqqqqq
EXPECTED SNUM: 4
B: Resending previous ACK to A...
SEQ, ACK: 0, 3
TOLAYER3: packet being lost

EVENT time: 492.281869, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
DATA: yyyyyyyyyyyyyyyyyyy

```

```

EVENT time: 492.596026, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
SEQ, ACK: 0, 3
A: packet ACK corrupted.
A: Rejecting ACK from B... (pending ACK 9)

EVENT time: 497.156804, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 10, 0
PAYLOAD: ?kkkkkkkkkkkkkkkkkkkkk
EXPECTED SNUM: 4
B: Resending previous ACK to A...
SEQ, ACK: 0, 3
TOLAYER3: packet being lost

EVENT time: 498.238075, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
SEQ, ACK: 9, 0
PAYLOAD: jjjjjjjjjjjjjjjjjj
A: Resending DATA to B...
SEQ, ACK: 10, 0
PAYLOAD: kkkkkkkkkkkkkkkkk
TOLAYER3: packet being corrupted
A: Resending DATA to B...
SEQ, ACK: 11, 0
PAYLOAD: lllllllllllllllllll
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 12, 0
PAYLOAD: mmmmmmmmmmmmmmmmm
A: Resending DATA to B...
SEQ, ACK: 13, 0
PAYLOAD: nnnnnnnnnnnnnnnn
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 14, 0
PAYLOAD: oooooooooooooooo
A: Resending DATA to B...
SEQ, ACK: 15, 0
PAYLOAD: ppppppppppppppppp
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 2038004089, 2038004089
PAYLOAD: qqqqqqqqqqqqqqqqq
TOLAYER3: packet being lost

EVENT time: 501.912320, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 11, 0
PAYLOAD: lllllllllllllllllll
EXPECTED SNUM: 4
B: Resending previous ACK to A...
SEQ, ACK: 0, 3

EVENT time: 505.060488, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
SEQ, ACK: 0, 3
A: Rejecting ACK from B... (pending ACK 9)

```

```

EVENT time: 508.987121, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 13, 0
PAYLOAD: ?nnnnnnnnnnnnnnnnnnnnn
EXPECTED SNUM: 4
B: Resending previous ACK to A...
SEQ, ACK: 0, 3
TOLAYER3: packet being lost

EVENT time: 510.593585, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
DATA: zzzzzzzzzzzzzzzzzzzzzz

EVENT time: 518.238075, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
SEQ, ACK: 9, 0
PAYLOAD: jjjjjjjjjjjjjjjjjjjjj
TOLAYER3: packet being corrupted
A: Resending DATA to B...
SEQ, ACK: 10, 0
PAYLOAD: kkkkkkkkkkkkkkkkkkkk
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 11, 0
PAYLOAD: 11111111111111111111
A: Resending DATA to B...
SEQ, ACK: 12, 0
PAYLOAD: mmmmmmmmmmmmmmmmmmmmm
A: Resending DATA to B...
SEQ, ACK: 13, 0
PAYLOAD: nnnnnnnnnnnnnnnnnnnn
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 14, 0
PAYLOAD: oooooooooooooooooooooo
TOLAYER3: packet being corrupted
A: Resending DATA to B...
SEQ, ACK: 15, 0
PAYLOAD: pppppppppppppppppppp
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 2038004089, 2038004089
PAYLOAD: zzzzzzzzzzzzzzzzzzzz
TOLAYER3: packet being corrupted

EVENT time: 518.933561, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 15, 0
PAYLOAD: pppppppppppppppppppp
EXPECTED SNUM: 4
B: Resending previous ACK to A...
SEQ, ACK: 0, 3
TOLAYER3: packet being lost

```

```

EVENT time: 523.719565, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 0, 0
PAYLOAD: qqqqqqqqqqqqqqqqqqq
EXPECTED SNUM: 4
B: Resending previous ACK to A...
SEQ, ACK: 0, 3
TOLAYER3: packet being corrupted

EVENT time: 525.418317, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 9, 0
PAYLOAD: ?jjjjjjjjjjjjjjjjjj
EXPECTED SNUM: 4
B: Resending previous ACK to A...
SEQ, ACK: 0, 3
TOLAYER3: packet being lost

EVENT time: 528.957884, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 12, 0
PAYLOAD: ?mmmmmmmmmmmmmmmmmm
EXPECTED SNUM: 4
B: Resending previous ACK to A...
SEQ, ACK: 0, 3
TOLAYER3: packet being corrupted

EVENT time: 530.508744, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
DATA:aaaaaaaaaaaaaaaaaaaaaa

EVENT time: 532.596179, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
SEQ, ACK: 0, 3
A: packet ACK corrupted.
A: Rejecting ACK from B... (pending ACK 9)

EVENT time: 535.960234, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
SEQ, ACK: 0, 3
A: packet ACK corrupted.
A: Rejecting ACK from B... (pending ACK 9)

EVENT time: 538.100375, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 999999, 0
PAYLOAD: ooooooooooooooooooooo
EXPECTED SNUM: 4
B: Resending previous ACK to A...
SEQ, ACK: 0, 3

```

```

EVENT time: 538.238075, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
SEQ, ACK: 9, 0
PAYLOAD: jjjjjjjjjjjjjjjjjj
A: Resending DATA to B...
SEQ, ACK: 10, 0
PAYLOAD: kkkkkkkkkkkkkkkkk
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 11, 0
PAYLOAD: 111111111111111111
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 12, 0
PAYLOAD: mmmmmmmmmmmmmmmmm
A: Resending DATA to B...
SEQ, ACK: 13, 0
PAYLOAD: nnnnnnnnnnnnnnnnn
TOLAYER3: packet being corrupted
A: Resending DATA to B...
SEQ, ACK: 14, 0
PAYLOAD: oooooooooooooooo
TOLAYER3: packet being corrupted
A: Resending DATA to B...
SEQ, ACK: 15, 0
PAYLOAD: ppppppppppppppppp
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 2038004089, 2038004089
PAYLOAD: zzzzzzzzzzzzzzzz
TOLAYER3: packet being lost

EVENT time: 539.733482, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
SEQ, ACK: 0, 3
A: Rejecting ACK from B... (pending ACK 9)

EVENT time: 546.895962, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
DATA: bbbbbbbbbbbbbbbbbb

EVENT time: 547.423322, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 999999, 0
PAYLOAD: qqqqqqqqqqqqqqqqqqq
EXPECTED SNUM: 4
B: Resending previous ACK to A...
SEQ, ACK: 0, 3
TOLAYER3: packet being lost

EVENT time: 549.631855, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 9, 0
PAYLOAD: jjjjjjjjjjjjjjjj
EXPECTED SNUM: 4
B: Resending previous ACK to A...
SEQ, ACK: 0, 3
TOLAYER3: packet being lost

```

```
EVENT time: 557.155461, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 10, 0
    PAYLOAD: ?kkkkkkkkkkkkkkkkkk
    EXPECTED SNUM: 4
B: Resending previous ACK to A...
    SEQ, ACK: 0, 3
        TOLAYER3: packet being lost

EVENT time: 557.962584, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
    DATA: cccccccccccccccccccc

EVENT time: 558.238075, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
    SEQ, ACK: 9, 0
    PAYLOAD: jjjjjjjjjjjjjjjjjj
        TOLAYER3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 10, 0
    PAYLOAD: kkkkkkkkkkkkkkkkk
        TOLAYER3: packet being corrupted
A: Resending DATA to B...
    SEQ, ACK: 11, 0
    PAYLOAD: 111111111111111111
        TOLAYER3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 12, 0
    PAYLOAD: mmmmmmmmmmmmmmmmmmm
        TOLAYER3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 13, 0
    PAYLOAD: nnnnnnnnnnnnnnnnnn
        TOLAYER3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 14, 0
    PAYLOAD: oooooooooooooooo
        TOLAYER3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 15, 0
    PAYLOAD: ppppppppppppppppp
        TOLAYER3: packet being lost
A: Resending DATA to B...
    SEQ, ACK: 2038004089, 2038004089
    PAYLOAD: zzzzzzzzzzzzzzzzzz
        TOLAYER3: packet being lost

EVENT time: 566.619587, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
    SEQ, ACK: 11, 0
    PAYLOAD: 111111111111111111
    EXPECTED SNUM: 4
B: Resending previous ACK to A...
    SEQ, ACK: 0, 3
        TOLAYER3: packet being corrupted

EVENT time: 567.680898, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5.94
    DATA: dddddddddd
```

```

EVENT time: 572.523759, type: 2, fromlayer3 entity: 0
A: Receiving ACK from B...
SEQ, ACK: 0, 3
A: packet ACK corrupted.
A: Rejecting ACK from B... (pending ACK 9)

EVENT time: 573.798212, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 12, 0
PAYLOAD: ?mmmmmmmmmmmmmmmmmm
EXPECTED SNUM: 4
B: Resending previous ACK to A...
SEQ, ACK: 0, 3
TOLAYER3: packet being lost

EVENT time: 575.875118, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
DATA: eeeeeeeeeeeeeeee

EVENT time: 578.238075, type: 0, timerinterrupt entity: 0
A: Resending DATA to B...
SEQ, ACK: 9, 0
PAYLOAD: jjjjjjjjjjjjjjjjjj
TOLAYER3: packet being corrupted
A: Resending DATA to B...
SEQ, ACK: 10, 0
PAYLOAD: kkkkkkkkkkkkkkkkk
A: Resending DATA to B...
SEQ, ACK: 11, 0
PAYLOAD: lllllllllllllllll
A: Resending DATA to B...
SEQ, ACK: 12, 0
PAYLOAD: mmmmmmmmmmmmmmmmm
A: Resending DATA to B...
SEQ, ACK: 13, 0
PAYLOAD: nnnnnnnnnnnnnnnnn
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 14, 0
PAYLOAD: oooooooooooooooo
A: Resending DATA to B...
SEQ, ACK: 15, 0
PAYLOAD: ppppppppppppppppp
TOLAYER3: packet being lost
A: Resending DATA to B...
SEQ, ACK: 2038004089, 2038004089
PAYLOAD: zzzzzzzzzzzzzzzz
TOLAYER3: packet being lost

EVENT time: 578.465560, type: 2, fromlayer3 entity: 1
B: Receiving DATA from A...
SEQ, ACK: 13, 0
PAYLOAD: ?nnnnnnnnnnnnnnnnn
EXPECTED SNUM: 4
B: Resending previous ACK to A...
SEQ, ACK: 0, 3
TOLAYER3: packet being lost

EVENT time: 582.274239, type: 1, fromlayer5 entity: 0
A: Receiving MSG from layer 5...
DATA: ffffffffffffffff

```

```

EVENT time: 582.274239, type: 1, fromlayer5 entity: 0
  A: Receiving MSG from layer 5...
    DATA: fffffffffffffffffff

EVENT time: 583.731956, type: 2, fromlayer3 entity: 1
  B: Receiving DATA from A...
    SEQ, ACK: 14, 999999
    PAYLOAD: oooooooooooooooo
    EXPECTED SNUM: 4
  B: Resending previous ACK to A...
    SEQ, ACK: 0, 3
    TOlayer3: packet being lost

EVENT time: 587.005097, type: 2, fromlayer3 entity: 1
  B: Receiving DATA from A...
    SEQ, ACK: 0, 0
    PAYLOAD: qqqqqqqqqqqqqqqqq
    EXPECTED SNUM: 4
  B: Resending previous ACK to A...
    SEQ, ACK: 0, 3
    TOlayer3: packet being corrupted

EVENT time: 588.922758, type: 2, fromlayer3 entity: 1
  B: Receiving DATA from A...
    SEQ, ACK: 9, 0
    PAYLOAD: jjjjjjjjjjjjjjjjjj
    EXPECTED SNUM: 4
  B: Resending previous ACK to A...
    SEQ, ACK: 0, 3
    TOlayer3: packet being lost

EVENT time: 589.755547, type: 1, fromlayer5 entity: 0
  A: Receiving MSG from layer 5...
    DATA: ggggggggggggggggggg

EVENT time: 590.575274, type: 1, fromlayer5 entity: 0
  A: Receiving MSG from layer 5...
    DATA: hhhhhhhhhhhhhhhhh

=====> THE BUFFER IS FULL, EXIT <=====

```

1.0.6 Utilizzo di un timer statico

Il protocollo selective repeat solitamente necessita di un timer per ogni pacchetto che viene inviato.

In questo caso però, era presente un singolo timer univoco per tutti i pacchetti che vengono trasmessi. L'utilizzo di un singolo timer, ci ha vincolato ad implementare la nostra soluzione in questo modo:

- La funzione ”A_output()” fa partire il timer solo se il numero di sequenza del pacchetto da inviare corrisponde con la base della finestra.
- La funzione ”A_input()” ogni volta che riceve correttamente un ack, interrompe il timer e lo fa ripartire solo se sono presenti altri pacchetti già inviati, ma per i quali non è stato ancora ricevuto l'ack.

Nel caso in cui avessimo avuto a disposizione un timer per ogni pacchetto inviato, avremmo dovuto fare partire il timer corrispondente al pacchetto al momento dell'invio del messaggio ed avremmo dovuto controllare quali timer interrompere al momento della ricezione dell'acknowledge per un pacchetto.