

No data loss:

Message Sent:  
0123456789abcdef

Not Quite TCP Packet Receiver!

Prob of Loss [0..1]:   Packet Loss  ACK Loss

ID	Sequence	ACK	Length	Data	Dest. Host	Port	Status
0	1	1	18	0123456789	0.0.0.0/0.0.0.0	12345	Recieved
1	1	11	8		/127.0.0.1	57020	Delayed
2	11	1	15	abcdef	0.0.0.0/0.0.0.0	12345	Recieved
3	1	18	8		/127.0.0.1	57020	Sent

0123456789abcdef

- The sender breaks up the line into two packets.
- ID=1 is an ACK that is delayed and not sent.
- ID=2 is the cumulative ACK.

## Data and ACK loss:

ID	Sequence	ACK	Length	Data	Dest. Host	Port	Status
0	1	1	18	0123456789	0.0.0.0/0.0.0.0	12345	Lost
1	11	1	15	abcdef	0.0.0.0/0.0.0.0	12345	Lost
2	1	1	18	0123456789	0.0.0.0/0.0.0.0	12345	Lost
3	11	1	15	abcdef	0.0.0.0/0.0.0.0	12345	Out of Order
4	1	1	8		/127.0.0.1	60506	Lost
5	1	1	18	0123456789	0.0.0.0/0.0.0.0	12345	Recieved
6	1	18	8		/127.0.0.1	60506	Sent
7	11	1	15	abcdef	0.0.0.0/0.0.0.0	12345	Duplicate
8	1	18	8		/127.0.0.1	60506	Sent

0123456789abcdef

Message Sent:  
0123456789abcdef

- The first two packets are lost. The sender times out and sends them again.
- ID=2, the first message is lost again.
- ID=3, the second message arrives, but is considered out of order.
- ID=4, the ACK is lost.
- ID=5, the first message is received so both are delivered to the app.
- ID=6, the ACK acknowledges both messages
- ID=7, the sender had resent both, but the receiver had gotten that one already.
- ID=8, send the acknowledgement