

TCP SEQ NUMBERS ETC.

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```
relay1 -> in1sun1  TCP D=38662 S=9      Ack=399593749 Seq=2756727981 Len=0      Win=24820
in1sun1 -> relay1  TCP D=9      S=38662 Ack=2756727981 Seq=399613205 Len=1024 Win=24820
in1sun1 -> relay1  TCP D=9      S=38662 Ack=2756727981 Seq=399614229 Len=1024 Win=24820
in1sun1 -> relay1  TCP D=9      S=38662 Ack=2756727981 Seq=399615253 Len=1024 Win=24820
in1sun1 -> relay1  TCP D=9      S=38662 Ack=2756727981 Seq=399616277 Len=1024 Win=24820
relay1 -> in1sun1  TCP D=38662 S=9      Ack=399595797 Seq=2756727981 Len=0      Win=24820
```

FIGURE 1. Partial capture of TCP exchange

We consider the capture in Figure 1. This is a greedy data transfer to port 9 (Discard Protocol: defined by RFC863 – the receive buffer is always empty). The RTT observed at the moment of the capture is 158 ms.

- (1) Do you think this capture was done at the sender or at the receiver of the data?
- (2) Draw a temporal diagram for the capture above.
- (3) What is a amount of unacknowledged data at the moment the 5th packer leaves?
- (4) What is the instantaneous throughput?
- (5) What would be the maximum attainable throughput with this RTT and these hosts?