

1. IP Address: 192.168.86.68 ; Source Port: 55639
2. IP Address: 128.119.245.12 ; Destination Port: 80
3. Sequence Number (raw): 4236649187 ; [Connection establish request (SYN): server port 80] ; TCP Option - SACK permitted
4. Sequence Number (raw): 1068969752 ; [Connection establish acknowledge (SYN+ACK): server port 80] ; Acknowledgment number (raw): 4236649188 ; You add 1 to the SYN seq number
5. Acknowledgment number (raw): 1068969753 ; TCP payload (1385 bytes) ; No, it did not fit all into one single segment because it is spread over multiple segments
6.
 - [Time since first frame in this TCP stream: 0.147682000 seconds]
 - [Time since previous frame in this TCP stream: 0.001944000 seconds]
 - [The RTT to ACK the segment was: 0.024938000 seconds]
 - [The RTT to ACK the segment was: 0.024941000 seconds]
 - 0.0249384 sec
7. 1480 bytes for each data-carrying tcp segment
8.
 - Minimum available buffer space: 8,435,968 bytes (8.44 MB).
 - No, the sender was not throttled because the advertised window size remained large.
9. No retransmissions in the trace. Used tcp.analysis.retransmission to look for it
10.
 - 14,480 bytes among the first 10
 - Among the first ten, the ack number keeps growing meaning that each segment is being recognized individually
11. $255,634.64 \text{ bytes/second} \text{ b/c } 14,480 (\text{total bytes among 10}) / 0.056818 (\text{time between first and last packet sent})$
12. TCP is in slow start because there is a pattern of the transmission time increasing with every burst.
13. The fleets appear roughly every 0.02 - 0.03 seconds. This periodicity corresponds to the Round Trip Time (RTT), which governs how fast TCP can send more data after receiving ACKs.
14. I used the trace file provided, so the answers will be the same