AM.EN.P2CSN20020

1. Pick a TCP request/response pair. Identify the IP address and port number used by the client and server. What are their sequence numbers? Observe the protocol number for TCP.

Client:

IP address: 192.168.0.106
Port number: 1292
Sequence number: 1 (Highlighted in Yellow)
Protocol number for TCP: 6 (Highlighted in blue, below picture)

tcp

No.	Time	Source	Destination	Protocol	Length	Info
6	0.472213	192.168.0.106	103.10.24.185	TCP	55	1292 → 443 [ACK] Seq=1 Ack=1 Win=517 Len=1 [TCP segment of a reassembled PDU]
7	0.544307	103.10.24.185	192.168.0.106	TCP	54	443 → 1292 [ACK] Seq=1 Ack=2 Win=123 Len=0
8	1.136955	192.168.0.106	103.10.24.185	TCP	55	1290 → 443 [ACK] Seq=1 Ack=1 Win=254 Len=1 [TCP segment of a reassembled PDU]
9	1.210801	103.10.24.185	192.168.0.106	TCP	54	443 → 1290 [ACK] Seq=1 Ack=2 Win=162 Len=0
13	2.455511	192.168.0.106	103.10.24.185	TCP	55	1291 → 443 [ACK] Seq=1 Ack=1 Win=258 Len=1 [TCP segment of a reassembled PDU]
14	2.535026	103.10.24.185	192.168.0.106	TCP	54	443 → 1291 [ACK] Seq=1 Ack=2 Win=123 Len=0

```
> Frame 6: 55 bytes on wire (440 bits), 55 bytes captured (440 bits) on interface \Device\NPF_{8DD29CF6-2337-4B28-9F1E-596458C8B67C}, id 0
> Ethernet II, Src: IntelCor_06:0b:53 (5c:87:9c:06:0b:53), Dst: Tp-LinkT_64:16:70 (98:da:c4:64:16:70)
> Internet Protocol Version 4, Src: 192.168.0.106, Dst: 103.10.24.185
v Transmission Control Protocol, Src Port: 1292, Dst Port: 443, Seq: 1, Ack: 1, Len: 1
    Source Port: 1292
    Destination Port: 443
    [Stream index: 0]
    [TCP Segment Len: 1]
    Sequence number: 1    (relative sequence number)
    Sequence number (raw): 1347869140
    [Next sequence number: 2    (relative sequence number)]
    Acknowledgment number: 1    (relative ack number)
    Acknowledgment number (raw): 1636190717
    0101 .... = Header Length: 20 bytes (5)
  > Flags: 0x010 (ACK)
```

tcp

No.	Time	Source	Destination	Protocol	Length	Info
6	0.472213	192.168.0.106	103.10.24.185	TCP	55	1292 → 443 [ACK] Seq=1 Ack=1 Win=517 Len=1 [TCP segment of a reassembled PDU]
7	0.544307	103.10.24.185	192.168.0.106	TCP	54	443 → 1292 [ACK] Seq=1 Ack=2 Win=123 Len=0
8	1.136955	192.168.0.106	103.10.24.185	TCP	55	1290 → 443 [ACK] Seq=1 Ack=1 Win=254 Len=1 [TCP segment of a reassembled PDU]
9	1.210801	103.10.24.185	192.168.0.106	TCP	54	443 → 1290 [ACK] Seq=1 Ack=2 Win=162 Len=0
13	2.455511	192.168.0.106	103.10.24.185	TCP	55	1291 → 443 [ACK] Seq=1 Ack=1 Win=258 Len=1 [TCP segment of a reassembled PDU]
14	2.535026	103.10.24.185	192.168.0.106	TCP	54	443 → 1291 [ACK] Seq=1 Ack=2 Win=123 Len=0

```
> Frame 6: 55 bytes on wire (440 bits), 55 bytes captured (440 bits) on interface \Device\NPF_{8DD29CF6-2337-4B28-9F1E-596458C8B67C}, id 0
> Ethernet II, Src: IntelCor_06:0b:53 (5c:87:9c:06:0b:53), Dst: Tp-LinkT_64:16:70 (98:da:c4:64:16:70)
v Internet Protocol Version 4, Src: 192.168.0.106, Dst: 103.10.24.185
    0100 .... = Version: 4
    .... 0101 = Header Length: 20 bytes (5)
  > Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)
    Total Length: 41
    Identification: 0xd2da (53978)
  > Flags: 0x4000, Don't fragment
    Fragment offset: 0
    Time to live: 128
    Protocol: TCP (6)
    Header checksum: 0xe71e [validation disabled]
```

Server:

IP address: 103.10.24.185
Port number: 443
Sequence number: 1 (Highlighted in yellow)
Protocol number for TCP: 6 (Highlighted in blue)

tcp

No.	Time	Source	Destination	Protocol	Length	Info
6	0.472213	192.168.0.106	103.10.24.185	TCP	55	1292 → 443 [ACK] Seq=1 Ack=1 Win=517 Len=1 [TCP segment of a reassembled PDU]
7	0.544307	103.10.24.185	192.168.0.106	TCP	54	443 → 1292 [ACK] Seq=1 Ack=2 Win=123 Len=0
8	1.136955	192.168.0.106	103.10.24.185	TCP	55	1290 → 443 [ACK] Seq=1 Ack=1 Win=254 Len=1 [TCP segment of a reassembled PDU]
9	1.210801	103.10.24.185	192.168.0.106	TCP	54	443 → 1290 [ACK] Seq=1 Ack=2 Win=162 Len=0
13	2.455511	192.168.0.106	103.10.24.185	TCP	55	1291 → 443 [ACK] Seq=1 Ack=1 Win=258 Len=1 [TCP segment of a reassembled PDU]
14	2.535026	103.10.24.185	192.168.0.106	TCP	54	443 → 1291 [ACK] Seq=1 Ack=2 Win=123 Len=0

```
> Frame 7: 54 bytes on wire (432 bits), 54 bytes captured (432 bits) on interface \Device\NPF_{8DD29CF6-2337-4B28-9F1E-596458C8B67C}, id 0
> Ethernet II, Src: Tp-LinkT_64:16:70 (98:da:c4:64:16:70), Dst: IntelCor_06:0b:53 (5c:87:9c:06:0b:53)
> Internet Protocol Version 4, Src: 103.10.24.185, Dst: 192.168.0.106
v Transmission Control Protocol, Src Port: 443, Dst Port: 1292, Seq: 1, Ack: 2, Len: 0
    Source Port: 443
    Destination Port: 1292
    [Stream index: 0]
    [TCP Segment Len: 0]
    Sequence number: 1    (relative sequence number)
    Sequence number (raw): 1636190717
    [Next sequence number: 1    (relative sequence number)]
    Acknowledgment number: 2    (relative ack number)
    Acknowledgment number (raw): 1347869141
    0101 .... = Header Length: 20 bytes (5)
  > Flags: 0x010 (ACK)
```

tcp

No.	Time	Source	Destination	Protocol	Length	Info
6	0.472213	192.168.0.106	103.10.24.185	TCP	55	1292 → 443 [ACK] Seq=1 Ack=1 Win=517 Len=1 [TCP segment of a reassembled PDU]
7	0.544307	103.10.24.185	192.168.0.106	TCP	54	443 → 1292 [ACK] Seq=1 Ack=2 Win=123 Len=0
8	1.136955	192.168.0.106	103.10.24.185	TCP	55	1290 → 443 [ACK] Seq=1 Ack=1 Win=254 Len=1 [TCP segment of a reassembled PDU]
9	1.210801	103.10.24.185	192.168.0.106	TCP	54	443 → 1290 [ACK] Seq=1 Ack=2 Win=162 Len=0
13	2.455511	192.168.0.106	103.10.24.185	TCP	55	1291 → 443 [ACK] Seq=1 Ack=1 Win=258 Len=1 [TCP segment of a reassembled PDU]
14	2.535026	103.10.24.185	192.168.0.106	TCP	54	443 → 1291 [ACK] Seq=1 Ack=2 Win=123 Len=0

```
> Frame 7: 54 bytes on wire (432 bits), 54 bytes captured (432 bits) on interface \Device\NPF_{8DD29CF6-2337-4B28-9F1E-596458C8B67C}, id 0
> Ethernet II, Src: Tp-LinkT_64:16:70 (98:da:c4:64:16:70), Dst: IntelCor_06:0b:53 (5c:87:9c:06:0b:53)
v Internet Protocol Version 4, Src: 103.10.24.185, Dst: 192.168.0.106
    0100 .... = Version: 4
    .... 0101 = Header Length: 20 bytes (5)
  > Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)
    Total Length: 40
    Identification: 0x0000 (0)
  > Flags: 0x4000, Don't fragment
    Fragment offset: 0
    Time to live: 49
    Protocol: TCP (6)
    Header checksum: 0x08fb [validation disabled]
```

2. Observe the value of SYN flag in SYN and SYNACK messages from the client and server.

SYN and SYN ACK is observed below hilighted in a red box for SYN and a yellow line for SYN ACK.

tcp

No.	Time	Source	Destination	Protocol	Length	Info
30	5.620373	192.168.0.106	103.10.24.185	TCP	54	1291 → 443 [FIN, ACK] Seq=2 Ack=1 Win=258 Len=0
31	5.620850	192.168.0.106	103.10.24.185	TCP	66	1294 → 443 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 WS=256 SACK_PERM=1
32	5.620953	192.168.0.106	103.10.24.185	TCP	66	1295 → 443 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 WS=256 SACK_PERM=1
33	5.621035	192.168.0.106	103.10.24.185	TCP	66	1296 → 443 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 WS=256 SACK_PERM=1
34	5.621130	192.168.0.106	103.10.24.185	TCP	66	1297 → 443 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 WS=256 SACK_PERM=1
35	5.673433	103.10.24.185	192.168.0.106	TCP	66	443 → 1297 [SYN, ACK] Seq=0 Ack=1 Win=14600 Len=0 MSS=1440 SACK_PERM=1 WS=128
36	5.673495	192.168.0.106	103.10.24.185	TCP	54	1297 → 443 [ACK] Seq=1 Ack=1 Win=132352 Len=0
37	5.673771	192.168.0.106	103.10.24.185	TLSv…	571	Client Hello
38	5.679711	103.10.24.185	192.168.0.106	TCP	66	443 → 1295 [SYN, ACK] Seq=0 Ack=1 Win=14600 Len=0 MSS=1440 SACK_PERM=1 WS=128
39	5.679764	192.168.0.106	103.10.24.185	TCP	54	1295 → 443 [ACK] Seq=1 Ack=1 Win=132352 Len=0
40	5.679926	192.168.0.106	103.10.24.185	TLSv…	571	Client Hello
41	5.680727	103.10.24.185	192.168.0.106	TCP	66	443 → 1296 [SYN, ACK] Seq=0 Ack=1 Win=14600 Len=0 MSS=1440 SACK_PERM=1 WS=128

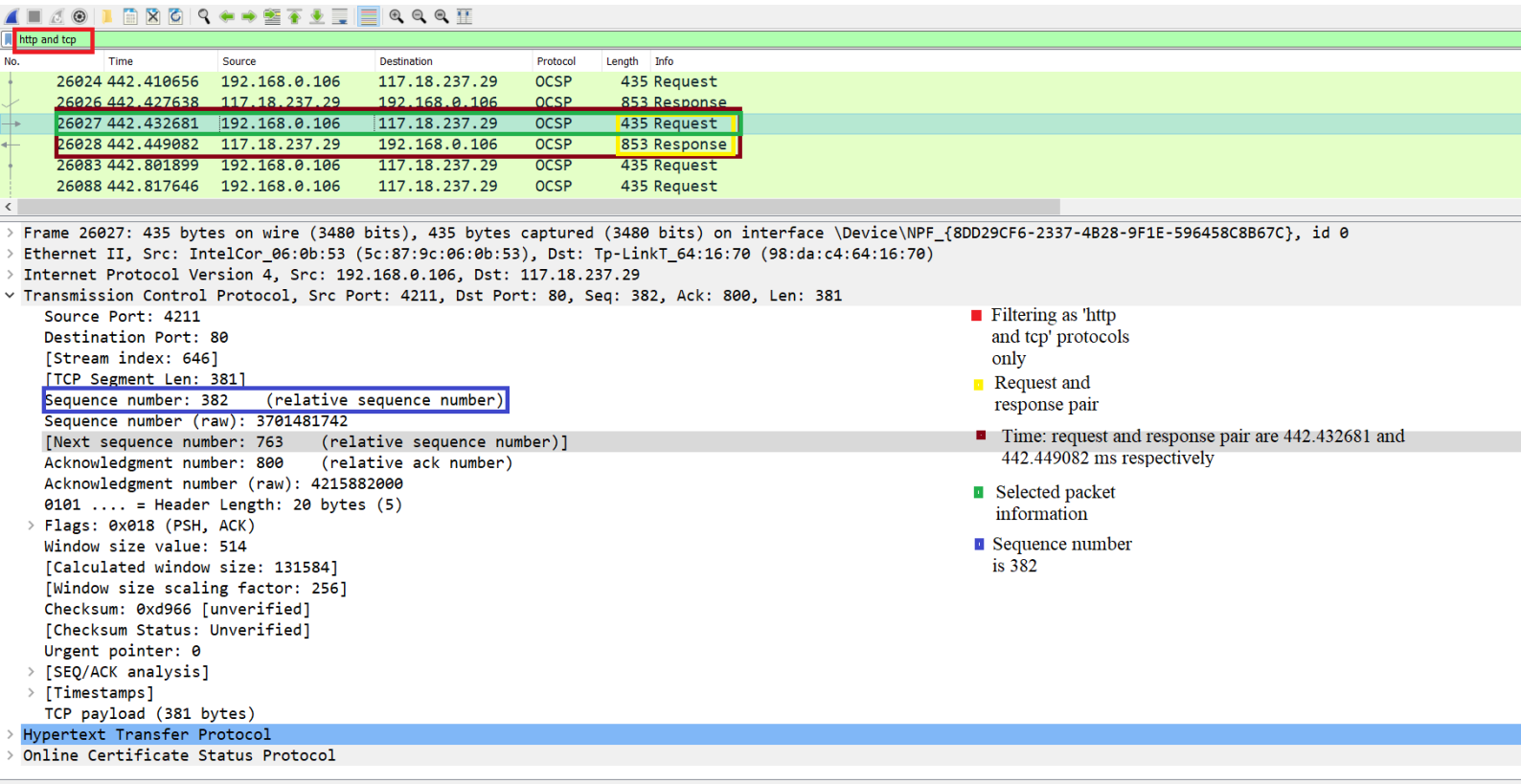
```
[Next sequence number: 1    (relative sequence number)]
Acknowledgment number: 0
Acknowledgment number (raw): 0
1000 .... = Header Length: 32 bytes (8)
Flags: 0x002 (SYN)
  000. .... .... = Reserved: Not set
  ...0 .... .... = Nonce: Not set
  .... 0... .... = Congestion Window Reduced (CWR): Not set
  .... .0.. .... = ECN-Echo: Not set
  .... ..0. .... = Urgent: Not set
  .... ...0 .... = Acknowledgment: Not set
  .... .... 0... = Push: Not set
  .... .... .0.. = Reset: Not set
  .... .... ..1. = Syn: Set
  .... .... ...0 = Fin: Not set
  [TCP Flags: ··********S·]
```

tcp

No.	Time	Source	Destination	Protocol	Length	Info
33	5.621035	192.168.0.106	103.10.24.185	TCP	66	1296 → 443 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 WS=256 SACK_PERM=1
34	5.621130	192.168.0.106	103.10.24.185	TCP	66	1297 → 443 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 WS=256 SACK_PERM=1
35	5.673433	103.10.24.185	192.168.0.106	TCP	66	443 → 1297 [SYN, ACK] Seq=0 Ack=1 Win=14600 Len=0 MSS=1440 SACK_PERM=1 WS=128
36	5.673495	192.168.0.106	103.10.24.185	TCP	54	1297 → 443 [ACK] Seq=1 Ack=1 Win=132352 Len=0
37	5.673771	192.168.0.106	103.10.24.185	TLSv…	571	Client Hello
38	5.679711	103.10.24.185	192.168.0.106	TCP	66	443 → 1295 [SYN, ACK] Seq=0 Ack=1 Win=14600 Len=0 MSS=1440 SACK_PERM=1 WS=128
39	5.679764	192.168.0.106	103.10.24.185	TCP	54	1295 → 443 [ACK] Seq=1 Ack=1 Win=132352 Len=0
40	5.679926	192.168.0.106	103.10.24.185	TLSv…	571	Client Hello
41	5.680727	103.10.24.185	192.168.0.106	TCP	66	443 → 1296 [SYN, ACK] Seq=0 Ack=1 Win=14600 Len=0 MSS=1440 SACK_PERM=1 WS=128
42	5.680761	192.168.0.106	103.10.24.185	TCP	54	1296 → 443 [ACK] Seq=1 Ack=1 Win=132352 Len=0
43	5.680930	192.168.0.106	103.10.24.185	TLSv…	571	Client Hello
44	5.686944	103.10.24.185	192.168.0.106	TCP	54	443 → 1290 [ACK] Seq=1 Ack=3 Win=162 Len=0

```
Acknowledgment number: 1    (relative ack number)
Acknowledgment number (raw): 2214389737
1000 .... = Header Length: 32 bytes (8)
Flags: 0x012 (SYN, ACK)
  000. .... .... = Reserved: Not set
  ...0 .... .... = Nonce: Not set
  .... 0... .... = Congestion Window Reduced (CWR): Not set
  .... .0.. .... = ECN-Echo: Not set
  .... ..0. .... = Urgent: Not set
  .... ...1 .... = Acknowledgment: Set
  .... .... 0... = Push: Not set
  .... .... .0.. = Reset: Not set
  .... .... ..1. = Syn: Set
  .... .... ...0 = Fin: Not set
  [TCP Flags: ·******A··S·]
Window size value: 14600
```

3. Do an HTTP operation involving multiple TCP transactions and observe the sequence numbers of request/response pairs. Observe the time for each request/ response. Calculate the round trip time (RTT) based on these values. Plot the RTT graph (can be done by selecting a TCP segment, Statistics->TCP stream graph->RTT graph)



http and tcp

No.	Time	Source	Destination	Protocol	Length	Info
26024	442.410656	192.168.0.106	117.18.237.29	OCSP	435	Request
26026	442.427638	117.18.237.29	192.168.0.106	OCSP	853	Response
26027	442.432681	192.168.0.106	117.18.237.29	OCSP	435	Request
26028	442.449082	117.18.237.29	192.168.0.106	OCSP	853	Response
26083	442.801899	192.168.0.106	117.18.237.29	OCSP	435	Request
26088	442.817646	192.168.0.106	117.18.237.29	OCSP	435	Request

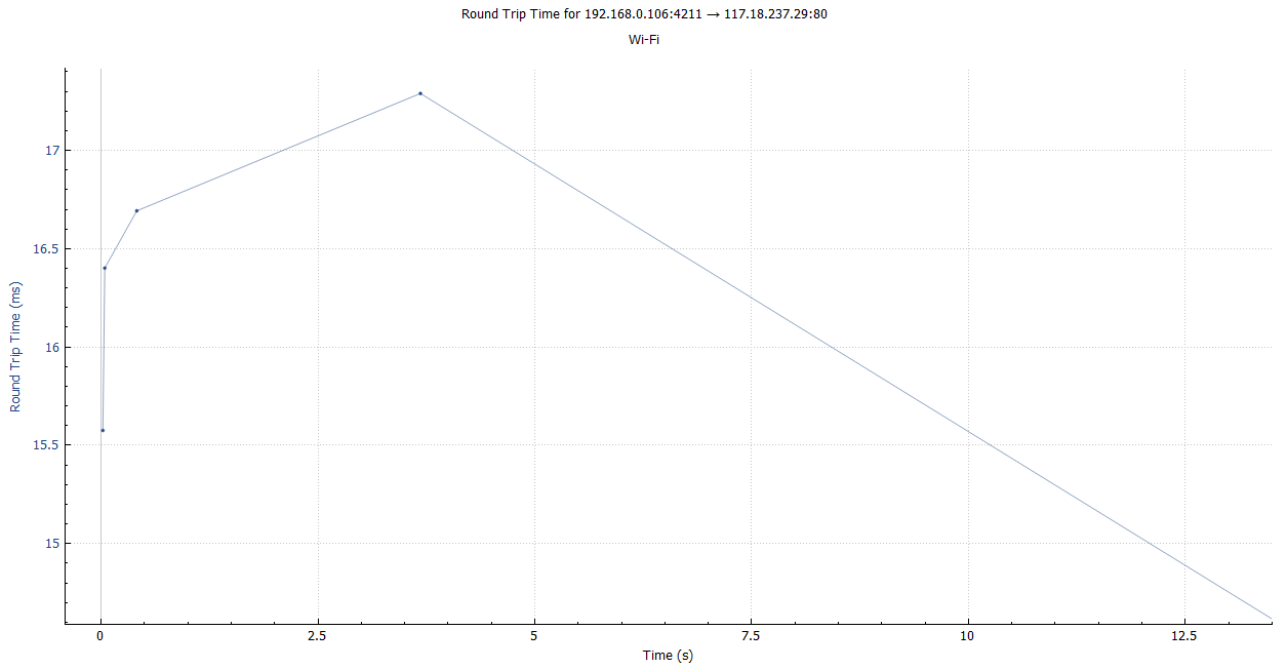
```
> Frame 26028: 853 bytes on wire (6824 bits), 853 bytes captured (6824 bits) on interface \Device\NPF_{8DD29CF6-2337-4B28-9F1E-596458C8B67C}, id 0
> Ethernet II, Src: Tp-LinkT_64:16:70 (98:da:c4:64:16:70), Dst: IntelCor_06:0b:53 (5c:87:9c:06:0b:53)
> Internet Protocol Version 4, Src: 117.18.237.29, Dst: 192.168.0.106
v Transmission Control Protocol, Src Port: 80, Dst Port: 4211, Seq: 800, Ack: 763, Len: 799
    Source Port: 80
    Destination Port: 4211
    [Stream index: 646]
    [TCP Segment Len: 799]
    Sequence number: 800    (relative sequence number)
    Sequence number (raw): 4215882000
    [Next sequence number: 1599    (relative sequence number)]
    Acknowledgment number: 763    (relative ack number)
    Acknowledgment number (raw): 3701482123
    0101 .... = Header Length: 20 bytes (5)
  > Flags: 0x018 (PSH, ACK)
    Window size value: 133
    [Calculated window size: 68096]
    [Window size scaling factor: 512]
    Checksum: 0xfb56 [unverified]
    [Checksum Status: Unverified]
    Urgent pointer: 0
  > [SEQ/ACK analysis]
  > [Timestamps]
    TCP payload (799 bytes)
> Hypertext Transfer Protocol
> Online Certificate Status Protocol
```

Filtered as 'http and tcp' protocols only

Selected response packet

Sequence number is 800 which is more than the request sequence number.

Calculating RTT for request response pair: (Response time – Request time)442.449082 - 442.432681 = 0.016401 milliseconds



The above is the RTT graph

4. Observe the growth of receive buffer in question 4. What is the size of send buffer?

tcp

No.	Time	Source	Destination	Protocol	Length	Info
339	0.259996	155.133.238.130	192.168.0.106	TCP	1494	80 → 52390 [ACK] Seq=32012 Ack=1 Win=1026 Len=1440 [TCP segment of a reassembled PDU]
340	0.260013	192.168.0.106	155.133.238.130	TCP	54	52390 → 80 [ACK] Seq=1 Ack=33452 Win=3768 Len=0
341	0.264933	155.133.238.130	192.168.0.106	TCP	1494	80 → 52390 [ACK] Seq=33452 Ack=1 Win=1026 Len=1440 [TCP segment of a reassembled PDU]
342	0.264933	155.133.238.130	192.168.0.106	TCP	1494	80 → 52390 [ACK] Seq=34892 Ack=1 Win=1026 Len=1440 [TCP segment of a reassembled PDU]
343	0.264933	155.133.238.130	192.168.0.106	TCP	1494	80 → 52390 [ACK] Seq=36332 Ack=1 Win=1026 Len=1440 [TCP segment of a reassembled PDU]
344	0.264933	155.133.238.130	192.168.0.106	TCP	1494	80 → 52390 [ACK] Seq=37772 Ack=1 Win=1026 Len=1440 [TCP segment of a reassembled PDU]

```
> Frame 341: 1494 bytes on wire (11952 bits), 1494 bytes captured (11952 bits) on interface \Device\NPF_{8DD29CF6-2337-4B28-9F1E-596458C8B67C}, id 0
> Ethernet II, Src: Tp-LinkT_64:16:70 (98:da:c4:64:16:70), Dst: IntelCor_06:0b:53 (5c:87:9c:06:0b:53)
> Internet Protocol Version 4, Src: 155.133.238.130, Dst: 192.168.0.106
v Transmission Control Protocol, Src Port: 80, Dst Port: 52390, Seq: 33452, Ack: 1, Len: 1440
    Source Port: 80
    Destination Port: 52390
    [Stream index: 2]
    [TCP Segment Len: 1440]
    Sequence number: 33452    (relative sequence number)
    Sequence number (raw): 3265207288
    [Next sequence number: 34892    (relative sequence number)]
    Acknowledgment number: 1    (relative ack number)
    Acknowledgment number (raw): 3139186596
    0101 .... = Header Length: 20 bytes (5)
  > Flags: 0x010 (ACK)
    Window size value: 1026
    [Calculated window size: 1026]
    [Window size scaling factor: -1 (unknown)]
    Checksum: 0xb189 [unverified]
    [Checksum Status: Unverified]
    Urgent pointer: 0
  > [SEQ/ACK analysis]
  > [Timestamps]
    TCP payload (1440 bytes)
    [Reassembled PDU in frame: 4866]
    TCP segment data (1440 bytes)
```

The selected packet when downloading a large file

Sequence number is 33452

Maximum bytes TCP payload can hold

tcp

No.	Time	Source	Destination	Protocol	Length	Info
339	0.259996	155.133.238.130	192.168.0.106	TCP	1494	80 → 52390 [ACK] Seq=32012 Ack=1 Win=1026 Len=1440 [TCP segment of a reassembled PDU]
340	0.260013	192.168.0.106	155.133.238.130	TCP	54	52390 → 80 [ACK] Seq=1 Ack=33452 Win=3768 Len=0
341	0.264933	155.133.238.130	192.168.0.106	TCP	1494	80 → 52390 [ACK] Seq=33452 Ack=1 Win=1026 Len=1440 [TCP segment of a reassembled PDU]
342	0.264933	155.133.238.130	192.168.0.106	TCP	1494	80 → 52390 [ACK] Seq=34892 Ack=1 Win=1026 Len=1440 [TCP segment of a reassembled PDU]
343	0.264933	155.133.238.130	192.168.0.106	TCP	1494	80 → 52390 [ACK] Seq=36332 Ack=1 Win=1026 Len=1440 [TCP segment of a reassembled PDU]
344	0.264933	155.133.238.130	192.168.0.106	TCP	1494	80 → 52390 [ACK] Seq=37772 Ack=1 Win=1026 Len=1440 [TCP segment of a reassembled PDU]

```
> Frame 342: 1494 bytes on wire (11952 bits), 1494 bytes captured (11952 bits) on interface \Device\NPF_{8DD29CF6-2337-4B28-9F1E-596458C8B67C}, id 0
> Ethernet II, Src: Tp-LinkT_64:16:70 (98:da:c4:64:16:70), Dst: IntelCor_06:0b:53 (5c:87:9c:06:0b:53)
> Internet Protocol Version 4, Src: 155.133.238.130, Dst: 192.168.0.106
v Transmission Control Protocol, Src Port: 80, Dst Port: 52390, Seq: 34892, Ack: 1, Len: 1440
    Source Port: 80
    Destination Port: 52390
    [Stream index: 2]
    [TCP Segment Len: 1440]
    Sequence number: 34892    (relative sequence number)
    Sequence number (raw): 3265208728
    [Next sequence number: 36332    (relative sequence number)]
    Acknowledgment number: 1    (relative ack number)
    Acknowledgment number (raw): 3139186596
    0101 .... = Header Length: 20 bytes (5)
  > Flags: 0x010 (ACK)
    Window size value: 1026
    [Calculated window size: 1026]
    [Window size scaling factor: -1 (unknown)]
    Checksum: 0xc42a [unverified]
    [Checksum Status: Unverified]
    Urgent pointer: 0
  > [SEQ/ACK analysis]
  > [Timestamps]
    TCP payload (1440 bytes)
    [Reassembled PDU in frame: 4866]
    TCP segment data (1440 bytes)
```

Selected packet in 2nd transfer

Sequence number is 34892 which is differennt from the previous packet(33452)

We can observe that the sequence number from previous packet and the current one, when we subtract their sequence numbers 334892 - 33452 = 1440 (Which is the maximum payload of TCP per packet)

Maximum TCP payload is 1440 bytes per packet

Apply a display filter ... <Ctrl-/>

No.	Time	Source	Destination	Protocol	Length	Info
340	0.260013	192.168.0.106	155.133.238.130	TCP	54	52390 → 80 [ACK] Seq=1 Ack=33452 Win=3768 Len=0
341	0.264933	155.133.238.130	192.168.0.106	TCP	1494	80 → 52390 [ACK] Seq=33452 Ack=1 Win=1026 Len=1440 [TCP segment of a reassembled PDU]
342	0.264933	155.133.238.130	192.168.0.106	TCP	1494	80 → 52390 [ACK] Seq=34892 Ack=1 Win=1026 Len=1440 [TCP segment of a reassembled PDU]
343	0.264933	155.133.238.130	192.168.0.106	TCP	1494	80 → 52390 [ACK] Seq=36332 Ack=1 Win=1026 Len=1440 [TCP segment of a reassembled PDU]
344	0.264933	155.133.238.130	192.168.0.106	TCP	1494	80 → 52390 [ACK] Seq=37772 Ack=1 Win=1026 Len=1440 [TCP segment of a reassembled PDU]
345	0.264933	155.133.238.130	192.168.0.106	TCP	1494	80 → 52390 [ACK] Seq=39212 Ack=1 Win=1026 Len=1440 [TCP segment of a reassembled PDU]
346	0.264933	155.133.238.130	192.168.0.106	TCP	1494	80 → 52390 [ACK] Seq=40652 Ack=1 Win=1026 Len=1440 [TCP segment of a reassembled PDU]
347	0.264933	155.133.238.130	192.168.0.106	TCP	1494	80 → 52390 [ACK] Seq=42092 Ack=1 Win=1026 Len=1440 [TCP segment of a reassembled PDU]
348	0.264933	155.133.238.130	192.168.0.106	TCP	1494	80 → 52390 [ACK] Seq=43532 Ack=1 Win=1026 Len=1440 [TCP segment of a reassembled PDU]
349	0.264933	155.133.238.130	192.168.0.106	TCP	1494	80 → 52390 [ACK] Seq=44972 Ack=1 Win=1026 Len=1440 [TCP segment of a reassembled PDU]
350	0.264933	155.133.238.130	192.168.0.106	TCP	1494	80 → 52390 [ACK] Seq=46412 Ack=1 Win=1026 Len=1440 [TCP segment of a reassembled PDU]
351	0.264966	192.168.0.106	155.133.238.130	TCP	54	52390 → 80 [ACK] Seq=1 Ack=47852 Win=3768 Len=0
352	0.269806	155.133.238.130	192.168.0.106	TCP	1494	80 → 52390 [ACK] Seq=47852 Ack=1 Win=1026 Len=1440 [TCP segment of a reassembled PDU]

```
Transmission Control Protocol, Src Port: 52390, Dst Port: 80, Seq: 1, Ack: 47852, Len: 0
    Source Port: 52390
    Destination Port: 80
    [Stream index: 2]
    [TCP Segment Len: 0]
    Sequence number: 1    (relative sequence number)
    Sequence number (raw): 3139186596
    [Next sequence number: 1    (relative sequence number)]
    Acknowledgment number: 47852    (relative ack number)
    Acknowledgment number (raw): 3265221688
    0101 .... = Header Length: 20 bytes (5)
  > Flags: 0x010 (ACK)
    Window size value: 3768
    [Calculated window size: 3768]
    [Window size scaling factor: -1 (unknown)]
    Checksum: 0x8772 [unverified]
    [Checksum Status: Unverified]
    Urgent pointer: 0
  > [SEQ/ACK analysis]
  v [Timestamps]
```

- We will analyse these packets
- The current packet is selected which is an acknowldgement that says the client has recieved the above analysed packets successfully.

We know that send buffer contains all data sent to the remote host but not yet acknowledged by that host. Therefore the send buffer size 10*1440 = 14400 bytes.

Send buffer = 14400 bytes.