

Bil 452 – Ödev 4 (TCP)  
Fatih Furkan Has  
141101024

1-)

The image shows a Wireshark packet capture analysis of a TCP connection. The top pane displays a list of 29 packets. The selected packet (No. 6) is a TCP ACK segment from 192.168.43.49 to 54.230.200.243, with sequence number 443 and acknowledgment number 35934. The middle pane shows the packet details, including the Ethernet II header, Internet Protocol Version 4 header, and Transmission Control Protocol header. The bottom pane shows the raw packet data in hexadecimal and ASCII format.

Source: 192.168.43.49, Destination: 54.230.200.243  
Source Port: 35934, Destination Port: 443

Source: 192.168.43.49, Destination: 54.230.200.243  
Source Port: 35934, Destination Port: 443

2-) gaia.cs.umass.edu adresi ve port numarası 1. soruda belirtildiği gibidir. Destination adresleridir.

4-)

Wireshark packet capture showing a TCP SYN segment. The packet is a SYN segment with sequence number 1. The packet details show the SYN flag set and the sequence number 1. The packet bytes show the TCP header and the SYN flag set.

Client ve server arasında TCP iletişimi için sequence number 1. SYN segment olduğunu ise flag'den anlayabiliriz.

5-)

Wireshark packet capture showing a TCP ACK segment. The packet is an ACK segment with sequence number 1. The packet details show the ACK flag set and the sequence number 1. The packet bytes show the TCP header and the ACK flag set.

Sequence number 1'dir. Server tarafından .... 1 .... = Acknowledgment: Set olarak gönderilmiştir. Bu yüzden SYN\_ACK olarak belirlenmiştir. Server bunu bizden aldığı SYN = 1 değeri ile belirlemiştir.

6-)

Wireshark packet capture showing a TCP connection. The packet list shows a sequence of packets from 24 to 45. Packet 37 is selected, showing details for a TCP segment with sequence number 1. The packet bytes pane shows the raw data of the segment.

Window size value: 229  
[calculated window size: 29312]  
[window size scaling factor: 128]  
Checksum: 0xb7b5 [unverified]

Urgent pointer: 0  
Options: (12 bytes), No-Operation (NOP), No-Operation (NOP), Timestamps  
[Seq/ACK analysis]  
TCP payload (672 bytes)  
Data (672 bytes)  
[length: 672]

Checksum Status (tcp.checksum.status)

Packets: 231 - Displayed: 223 (96.5%) - Dropped: 0 (0.0%) Profile: Default

Sequence number = 1

7-)

Wireshark packet capture showing a TCP connection. The packet list shows a sequence of packets from 25 to 46. Packet 46 is selected, showing details for a TCP segment with sequence number 1. The packet bytes pane shows the raw data of the segment.

Frame 46: 66 bytes on wire (528 bits), 66 bytes captured (528 bits) on interface 0  
Ethernet II, Src: IntelCor\_00:5b:ad, Dst: SamsungE\_7f:e5:5b  
Internet Protocol Version 4, Src: 192.168.43.49, Dst: 128.119.245.12  
Transmission Control Protocol, Src Port: 44454, Dst Port: 80, Seq: 1, Ack: 1, Len: 0  
Source Port: 44454  
Destination Port: 80  
[Stream index: 5]  
[TCP Segment Len: 0]  
Sequence number: 1 (relative sequence number)  
Acknowledgment number: 1 (relative ack number)  
1680 .... = Header Length: 32 bytes (8)  
... = Flags: 0x010 (ACK)  
0000 d0 22 be 7f e5 5b 00 f6 77 60 5b ad 08 00 45 09 .".[. w[...E.  
0010 00 34 49 0a 00 40 06 0f fc c0 ad 2b 31 00 77 .A]0.0. ....i.w  
0020 f5 0c ad a0 00 50 07 6f 28 f7 92 09 f1 33 80 10 ....P.g (...3.  
0030 00 e5 c3 90 00 01 01 00 0a ae 0b c4 1f 19 f4 .....  
0040 63 32 c2

1. sequence number 1
2. sequence number 673
3. sequence number 2061
4. sequence number 3449
5. sequence number 4837
6. sequence number 6225

\*wlp60s0

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tcp

Packet bytes Narrow & Wide Case sensitive String POST

Find Cancel

No.	Time	Source	Destination	Protocol	Length	Info
25	3.826622563	54.230.200.243	192.168.43.49	TLSv1.2	562	Application Data, Application Data
26	3.826654902	192.168.43.49	54.230.200.243	TCP	66	35934 → 443 [ACK] Seq=78 Ack=3273 Win=953 Len=0 TSval=1642431690 TSecr=2965284541
27	3.826893884	54.230.200.243	192.168.43.49	TCP	562	[TCP Spurious Retransmission] 443 → 35934 [PSH, ACK] Seq=2777 Ack=78 Win=122 Len=480 TSval=2965284500 TSecr=1642429947 [Reassembly ...]
28	3.827029312	192.168.43.49	54.230.200.243	TCP	78	[TCP Dup ACK 26r1] 35934 → 443 [ACK] Seq=78 Ack=3273 Win=953 Len=0 TSval=1642431690 TSecr=2965284500 SLE=2777 SRE=3273
29	3.842655716	54.230.200.243	192.168.43.49	TCP	78	[TCP Dup ACK 17r1] 443 → 35934 [ACK] Seq=3273 Ack=78 Win=122 Len=0 TSval=2965284589 TSecr=1642430687 SLE=1 SRE=78
30	3.931905462	128.119.245.12	192.168.43.49	TCP	66	80 → 44420 [FIN, ACK] Seq=1 Ack=2 Win=227 Len=0 TSval=435446574 TSecr=2920005911
31	3.932611819	192.168.43.49	128.119.245.12	TCP	66	44420 → 80 [ACK] Seq=2 Ack=2 Win=229 Len=0 TSval=2920006676 TSecr=435446574
32	3.942413366	128.119.245.12	192.168.43.49	TCP	66	80 → 44418 [ACK] Seq=1 Ack=2 Win=235 Len=0 TSval=435446575 TSecr=2920005911
33	3.942454937	128.119.245.12	192.168.43.49	TCP	74	80 → 44454 [SYN, ACK] Seq=0 Ack=1 Win=28968 Len=0 MSS=1460 SACK_PERM=1 TSval=435446578 TSecr=2920005912 WS=128
34	3.942496266	192.168.43.49	128.119.245.12	TCP	66	44454 → 80 [ACK] Seq=1 Ack=1 Win=29312 Len=0 TSval=2920006687 TSecr=435446578
35	3.942672758	128.119.245.12	192.168.43.49	TCP	74	80 → 44456 [SYN, ACK] Seq=0 Ack=1 Win=28968 Len=0 MSS=1460 SACK_PERM=1 TSval=435446583 TSecr=2920006103 WS=128
36	3.942704273	192.168.43.49	128.119.245.12	TCP	66	44456 → 80 [ACK] Seq=1 Ack=1 Win=29312 Len=0 TSval=2920006687 TSecr=435446583
37	3.943217558	192.168.43.49	128.119.245.12	TCP	738	44454 → 80 [PSH, ACK] Seq=1 Ack=1 Win=29312 Len=672 TSval=2920006687 TSecr=435446578
38	3.943423050	192.168.43.49	128.119.245.12	TCP	1454	44454 → 80 [ACK] Seq=673 Ack=1 Win=29312 Len=1388 TSval=2920006688 TSecr=435446578
39	3.943439262	192.168.43.49	128.119.245.12	TCP	1454	44454 → 80 [ACK] Seq=2901 Ack=1 Win=29312 Len=1388 TSval=2920006688 TSecr=435446578
40	3.943457278	192.168.43.49	128.119.245.12	TCP	1454	44454 → 80 [ACK] Seq=3449 Ack=1 Win=29312 Len=1388 TSval=2920006688 TSecr=435446578
41	3.943461701	192.168.43.49	128.119.245.12	TCP	1454	44454 → 80 [ACK] Seq=4837 Ack=1 Win=29312 Len=1388 TSval=2920006688 TSecr=435446578
42	3.948501879	192.168.43.49	128.119.245.12	TCP	1454	44454 → 80 [ACK] Seq=6225 Ack=1 Win=29312 Len=1388 TSval=2920006693 TSecr=435446578
43	3.948517838	192.168.43.49	128.119.245.12	TCP	1454	44454 → 80 [ACK] Seq=7618 Ack=1 Win=29312 Len=1388 TSval=2920006693 TSecr=435446578
44	3.954103051	192.168.43.49	128.119.245.12	TCP	1454	44454 → 80 [ACK] Seq=9801 Ack=1 Win=29312 Len=1388 TSval=2920006693 TSecr=435446578
45	3.954117088	192.168.43.49	128.119.245.12	TCP	1454	44454 → 80 [ACK] Seq=10389 Ack=1 Win=29312 Len=1388 TSval=2920006698 TSecr=435446578
46	3.960819693	128.119.245.12	192.168.43.49	TCP	66	[TCP Dup ACK 32r1] 80 → 44418 [ACK] Seq=1 Ack=2 Win=235 Len=0 TSval=435446588 TSecr=2920005911

.....0... = Push: Not set  
.....0. = Reset: Not set  
.....0. = Syn: Not set  
.....0 = Fin: Not set  
[TCP Flags: .....A...]  
Window size value: 229  
[Calculated window size: 29312]  
[Window size scaling factor: 128]  
Checksum: 0xc396 [unverified]  
[Checksum: 0xc396] [unverified]  
Urgent pointer: 0  
Options: (12 bytes) No-Operation (NOP), No-Operation (NOP), Timestamps

```

0000 00 22 be 7f e5 5b ad d0 22 be 7f e5 5b ad d0 00 45 00  .w[...E.
0010 00 34 49 00 00 00 00 00 00 00 00 00 00 00 00 00 00  .4]@. ...I.W
0020 f5 0c ad a6 00 50 07 67 28 f7 92 09 f1 33 80 10    ....P.g (...3.
0030 00 e5 c3 96 00 00 01 01 08 0a ae 0b c4 1f 19 f4    .....
0040 63 32                                     c2

```

ChecksSum Status (tcp.checksum.status) Packets: 231 - Displayed: 223 (96.5%) - Dropped: 0 (0.0%) Profile: Default

1. sequence [Time since reference or first frame: 3.942496266 seconds]
2. sequence [Time since reference or first frame: 3.943423050 seconds]
3. sequence [Time since reference or first frame: 3.943439262 seconds]
4. sequence [Time since reference or first frame: 3.943457278 seconds]
5. sequence [Time since reference or first frame: 3.943461701 seconds]
6. sequence [Time since reference or first frame: 3.948501879 seconds]

\*wlp60s0

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tcp

Packet bytes Narrow & Wide Case sensitive String POST

Find Cancel

No.	Time	Source	Destination	Protocol	Length	Info
49	4.132146211	192.168.43.49	128.119.245.12	TCP	1454	44454 → 80 [ACK] Seq=1777 Ack=1 Win=29312 Len=1388 TSval=2920006708 TSecr=435446578
50	4.132191360	192.168.43.49	128.119.245.12	TCP	66	80 → 44454 [ACK] Seq=1 Ack=673 Win=30336 Len=0 TSval=435446768 TSecr=2920006687
51	4.132209809	192.168.43.49	128.119.245.12	TCP	1454	44454 → 80 [ACK] Seq=13165 Ack=1 Win=29312 Len=1388 TSval=2920006676 TSecr=435446768
52	4.132209809	192.168.43.49	128.119.245.12	TCP	1454	44454 → 80 [ACK] Seq=14553 Ack=1 Win=29312 Len=1388 TSval=2920006676 TSecr=435446768
53	4.159664422	128.119.245.12	192.168.43.49	TCP	66	80 → 44454 [ACK] Seq=1 Ack=2061 Win=33280 Len=0 TSval=435446800 TSecr=2920006688
54	4.159789210	192.168.43.49	128.119.245.12	TCP	1454	44454 → 80 [ACK] Seq=15941 Ack=1 Win=29312 Len=1388 TSval=2920006694 TSecr=435446800
55	4.159727730	192.168.43.49	128.119.245.12	TCP	1454	44454 → 80 [ACK] Seq=17329 Ack=1 Win=29312 Len=1388 TSval=2920006694 TSecr=435446800
56	4.172279371	128.119.245.12	192.168.43.49	TCP	66	80 → 44454 [ACK] Seq=1 Ack=3449 Win=30896 Len=0 TSval=435446800 TSecr=2920006688
57	4.172279371	192.168.43.49	128.119.245.12	TCP	1454	44454 → 80 [ACK] Seq=18717 Ack=1 Win=29312 Len=1388 TSval=2920006917 TSecr=435446800
58	4.172331301	192.168.43.49	128.119.245.12	TCP	1454	44454 → 80 [ACK] Seq=20105 Ack=1 Win=29312 Len=1388 TSval=2920006917 TSecr=435446800
59	4.202063242	128.119.245.12	192.168.43.49	TCP	66	80 → 44454 [ACK] Seq=1 Ack=7613 Win=44544 Len=0 TSval=435446844 TSecr=2920006693
60	4.202087006	192.168.43.49	128.119.245.12	TCP	1454	44454 → 80 [ACK] Seq=21493 Ack=1 Win=29312 Len=1388 TSval=2920006946 TSecr=435446844
61	4.202103492	192.168.43.49	128.119.245.12	TCP	1454	44454 → 80 [ACK] Seq=22881 Ack=1 Win=29312 Len=1388 TSval=2920006946 TSecr=435446844
62	4.202105832	192.168.43.49	128.119.245.12	TCP	1454	44454 → 80 [ACK] Seq=24269 Ack=1 Win=29312 Len=1388 TSval=2920006946 TSecr=435446844
63	4.202110498	192.168.43.49	128.119.245.12	TCP	1454	44454 → 80 [ACK] Seq=25657 Ack=1 Win=29312 Len=1388 TSval=2920006946 TSecr=435446844
64	4.202112239	192.168.43.49	128.119.245.12	TCP	1454	44454 → 80 [ACK] Seq=27045 Ack=1 Win=29312 Len=1388 TSval=2920006946 TSecr=435446844
65	4.207398583	192.168.43.49	128.119.245.12	TCP	1454	44454 → 80 [ACK] Seq=28433 Ack=1 Win=29312 Len=1388 TSval=2920006952 TSecr=435446844
66	4.212955606	128.119.245.12	192.168.43.49	TCP	66	80 → 44454 [ACK] Seq=1 Ack=9001 Win=47488 Len=0 TSval=435446852 TSecr=2920006693
67	4.212955606	192.168.43.49	128.119.245.12	TCP	1454	44454 → 80 [ACK] Seq=29821 Ack=1 Win=29312 Len=1388 TSval=2920006957 TSecr=435446852
68	4.212982109	192.168.43.49	128.119.245.12	TCP	1454	44454 → 80 [ACK] Seq=31289 Ack=1 Win=29312 Len=1388 TSval=2920006957 TSecr=435446852
69	4.222045246	128.119.245.12	192.168.43.49	TCP	66	80 → 44454 [ACK] Seq=1 Ack=19389 Win=50432 Len=0 TSval=435446862 TSecr=2920006698
70	4.222055386	192.168.43.49	128.119.245.12	TCP	1454	44454 → 80 [ACK] Seq=32597 Ack=1 Win=29312 Len=1388 TSval=2920006966 TSecr=435446862

Frame 50: 66 bytes on wire (528 bits), 66 bytes captured (528 bits) on interface 0  
Interface id: 0 (wlp60s0)  
Encapsulation type: Ethernet (1)  
Arrival time: Jun 8, 2018 23:08:09.328213127 +03  
[Time shift for this packet: 0.000000000 seconds]  
Epoch time: 1526488409.328213127 seconds  
[Time delta from previous captured frame: 0.167960297 seconds]  
[Time delta from previous displayed frame: 0.167960297 seconds]  
[Time since reference or first frame: 4.132146211 seconds]  
Frame Number: 50  
Frame Length: 66 bytes (528 bits)  
Capture Length: 66 bytes (528 bits)

```

0000 00 f6 77 60 5b ad d0 22 be 7f e5 5b ad d0 00 45 00  .w[...E.
0010 00 34 92 c3 40 00 2c 06 54 a3 89 77 f5 0c 00 a8    .4.@. .Z.W...
0020 2b 31 00 50 ad a6 92 09 f1 33 07 67 2b 97 80 10    +P... .3.g...
0030 00 e5 c0 30 00 00 01 01 08 0a 19 f4 63 f0 ae 0b    ...0....c...
0040 c4 1f                                     ..

```

Time relative to time reference or first frame (frame.time\_relative) Packets: 231 - Displayed: 223 (96.5%) - Dropped: 0 (0.0%) Profile: Default

1. ACK [Time since reference or first frame: 4.132146211 seconds]
2. ACK [Time since reference or first frame: 4.159664422 seconds]
3. ACK [Time since reference or first frame: 4.172279371 seconds]
4. ACK [Time since reference or first frame: 4.202063242 seconds]
5. ACK [Time since reference or first frame: 4.212955606 seconds]
6. ACK [Time since reference or first frame: 4.222045246 seconds]



RTT1 = 0.188928653  
RTT2 = 0.216241372  
RTT3 = 0.228840109  
RTT4 = 0.253561363  
RTT5 = 0.264437768  
RTT6 = 0.267941895

EstimatedRTT = 0.875 \* EstimatedRTT + 0.125 \* SampleRTT

EstimatedRTT1 = 0.188928653

EstimatedRTT2 = 0.875 \* 0.188928653 + 0.125 \* 0.216241372 = 0.19234274287

EstimatedRTT3 = 0.875 \* 0.19234274287 + 0.125 \* 0.228840109 = 0.19690491363

EstimatedRTT4 = 0.875 \* 0.19690491363 + 0.125 \* 0.253561363 = 0.2039869698

EstimatedRTT5 = 0.875 \* 0.2039869698 + 0.125 \* 0.264437768 = 0.21154331957

EstimatedRTT6 = 0.875 \* 0.21154331957 + 0.125 \* 0.267941895 = 0.21859314149

8-)

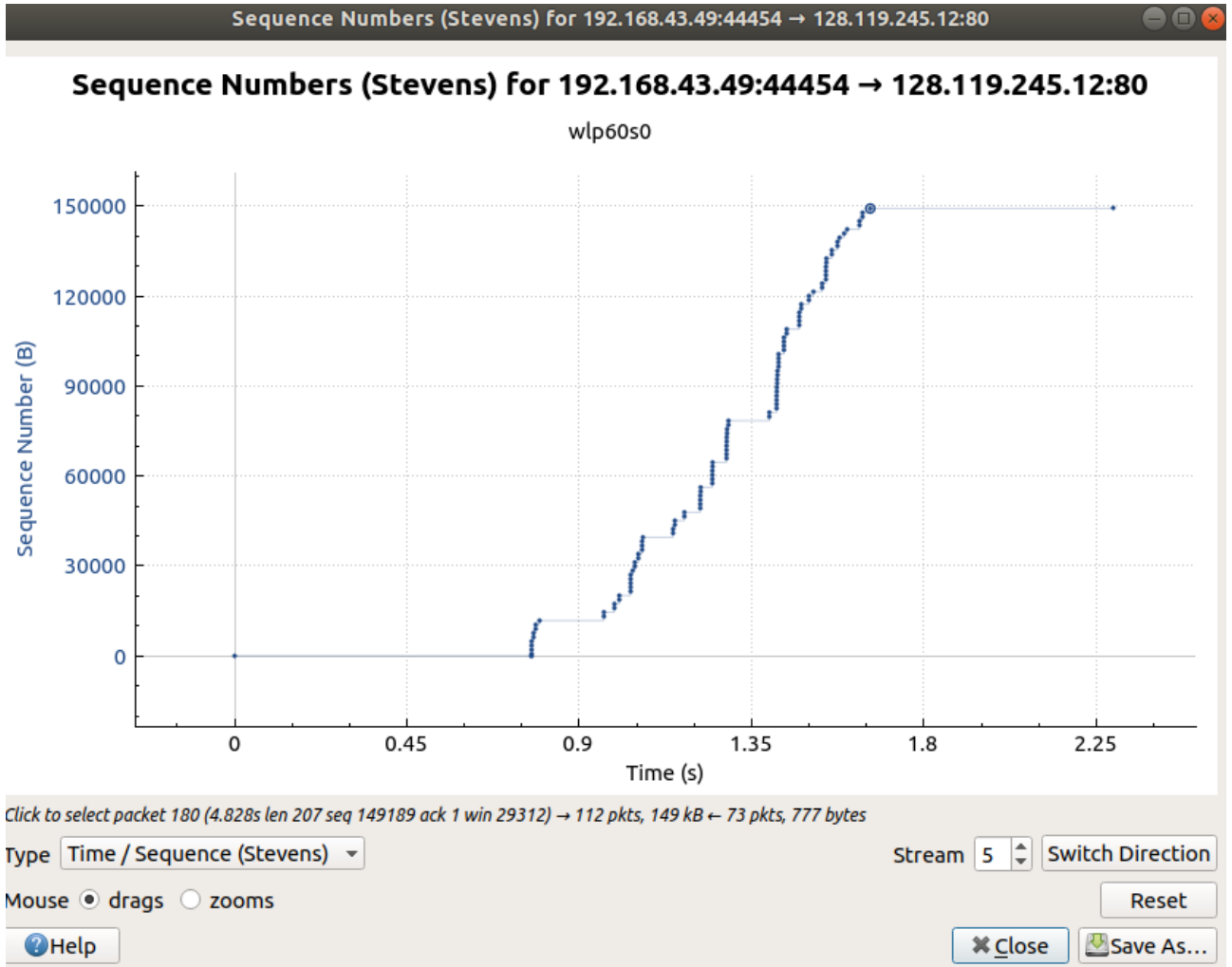
Wireshark packet capture analysis showing a TCP connection. The packet list shows a sequence of segments with lengths 672, 1388, 1388, 1388, 1388, and 1388 bytes. The packet details pane shows the structure of the TCP segment, including the payload (672 bytes) and the data (672 bytes). The packet bytes pane shows the raw data in hexadecimal and ASCII.

1. segment 672 bytes
2. segment 1388 bytes
3. segment 1388 bytes
4. segment 1388 bytes
5. segment 1388 bytes
6. segment 1388 bytes

9-)

Minimum window size: 30336

10-)



En son segmentte bir retransmit görülmekte aynı segment farklı zamanlarda tekrar görülüyor.

11-)

170	4.767362317	128.119.245.12	192.168.43.49	TCP	66 80 → 44454	[ACK]	Seq=1 Ack=68685 Win=171008 Len=6
171	4.767362317	128.119.245.12	192.168.43.49	TCP	1454 44454 → 80	[ACK]	Seq=142249 Ack=1 Win=29312 Len=1
172	4.767362317	128.119.245.12	192.168.43.49	TCP	66 80 → 44454	[ACK]	Seq=1 Ack=72849 Win=179328 Len=6
173	4.799589031	128.119.245.12	128.119.245.12	TCP	1454 44454 → 80	[ACK]	Seq=143637 Ack=1 Win=29312 Len=1
174	4.799641335	192.168.43.49	128.119.245.12	TCP	1454 44454 → 80	[ACK]	Seq=145025 Ack=1 Win=29312 Len=1
175	4.799660400	192.168.43.49	128.119.245.12	TCP	66 80 → 44454	[ACK]	Seq=1 Ack=74237 Win=182144 Len=6
176	4.807401337	128.119.245.12	128.119.245.12	TCP	1454 44454 → 80	[ACK]	Seq=146413 Ack=1 Win=29312 Len=1
177	4.807464755	192.168.43.49	128.119.245.12	TCP	1454 44454 → 80	[ACK]	Seq=147801 Ack=1 Win=29312 Len=1
178	4.807482311	192.168.43.49	128.119.245.12	TCP	66 80 → 44454	[ACK]	Seq=1 Ack=75625 Win=183296 Len=6
179	4.827727160	128.119.245.12	192.168.43.49	TCP	273 44454 → 80	[PSH, ACK]	Seq=149189 Ack=1 Win=29312 Len=1
180	4.827767738	192.168.43.49	128.119.245.12	TCP	66 80 → 44454	[ACK]	Seq=1 Ack=77013 Win=183296 Len=6
181	4.839423962	128.119.245.12	192.168.43.49	TCP	66 80 → 44454	[ACK]	Seq=1 Ack=78401 Win=183296 Len=6
182	4.857427637	128.119.245.12	192.168.43.49	TCP	66 80 → 44454	[ACK]	Seq=1 Ack=78401 Win=183296 Len=6

Buradaki iki ACK için bu değeri hesaplırsak  $75625 - 74237 = 1388$  olarak bulabiliriz. Diğerleri için de bu işlemi yaparsak aynı sonucu elde ederiz.

12-)

34 3.942496266

İlk zaman: 3.942496266

223 5.462253295

Son zaman: 5.462253295

No.	Time	Source	Destination	Protocol	Length	Info
207	0.207403607	129.119.245.12	192.168.43.49	TCP	60	60 → 44454 [ACK] Seq=129553 Win=206464 Len=0 TSV=1435447054 TSrc=2920007456
208	0.222103537	129.119.245.12	192.168.43.49	TCP	60	60 → 44454 [ACK] Seq=129561 Win=209200 Len=0 TSV=1435447062 TSrc=2920007456
209	0.227203064	129.119.245.12	192.168.43.49	TCP	60	60 → 44454 [ACK] Seq=129569 Win=212224 Len=0 TSV=1435447072 TSrc=2920007456
210	0.230292212	129.119.245.12	192.168.43.49	TCP	60	60 → 44454 [ACK] Seq=129757 Win=215040 Len=0 TSV=1435447078 TSrc=2920007456
211	0.262167643	129.119.245.12	192.168.43.49	TCP	60	60 → 44454 [ACK] Seq=131140 Win=217004 Len=0 TSV=1435447088 TSrc=2920007456
212	0.267264608	129.119.245.12	192.168.43.49	TCP	60	60 → 44454 [ACK] Seq=132533 Win=220920 Len=0 TSV=1435447098 TSrc=2920007457
213	0.276264608	129.119.245.12	192.168.43.49	TCP	60	60 → 44454 [ACK] Seq=133921 Win=223744 Len=0 TSV=1435447103 TSrc=2920007457
214	0.282247710	129.119.245.12	192.168.43.49	TCP	60	60 → 44454 [ACK] Seq=136097 Win=226032 Len=0 TSV=1435447102 TSrc=2920007472
215	0.322160052	129.119.245.12	192.168.43.49	TCP	60	60 → 44454 [ACK] Seq=138473 Win=230592 Len=0 TSV=1435447106 TSrc=2920007486
216	0.342021376	129.119.245.12	192.168.43.49	TCP	60	60 → 44454 [ACK] Seq=140961 Win=236200 Len=0 TSV=1435447107 TSrc=2920007492
217	0.377404049	129.119.245.12	192.168.43.49	TCP	60	60 → 44454 [ACK] Seq=142249 Win=241152 Len=0 TSV=1435448023 TSrc=2920007504
218	0.397209716	129.119.245.12	192.168.43.49	TCP	60	60 → 44454 [ACK] Seq=143637 Win=244096 Len=0 TSV=1435448040 TSrc=2920007512
219	0.407261898	129.119.245.12	192.168.43.49	TCP	60	60 → 44454 [ACK] Seq=145025 Win=246912 Len=0 TSV=1435448059 TSrc=2920007544
220	0.432003080	129.119.245.12	192.168.43.49	TCP	60	60 → 44454 [ACK] Seq=147801 Win=252000 Len=0 TSV=1435448074 TSrc=2920007552
221	0.432103108	129.119.245.12	192.168.43.49	TCP	60	60 → 44454 [ACK] Seq=149396 Win=256432 Len=0 TSV=1435448084 TSrc=2920007572
222	0.462119558	129.119.245.12	192.168.43.49	TCP	643	60 → 44454 [FIN, ACK] Seq=149396 Win=256432 Len=777 TSV=1435448094 TSrc=2920007572
223	0.462253295	192.168.43.49	192.168.43.49	TCP	0	60 → 44454 [ACK] Seq=149396 Win=256432 Len=0 TSV=1435448094 TSrc=2920007572
224	0.642050843	192.168.43.49	93.184.220.65	TCP	60	60 → 44454 [ACK] Seq=149396 Win=256432 Len=0 TSV=1435448094 TSrc=2920007572
225	0.660000000	93.184.220.65	192.168.43.49	TCP	60	60 → 44454 [ACK] Seq=149396 Win=256432 Len=0 TSV=1435448094 TSrc=2920007572
226	0.668000000	192.168.43.49	149.202.204.241	TCP	60	60 → 44454 [ACK] Seq=149396 Win=256432 Len=0 TSV=1435448094 TSrc=2920007572
227	0.710000000	93.184.220.65	192.168.43.49	TCP	60	60 → 44454 [ACK] Seq=149396 Win=256432 Len=0 TSV=1435448094 TSrc=2920007572
228	0.710000000	149.202.204.241	192.168.43.49	TCP	60	60 → 44454 [ACK] Seq=149396 Win=256432 Len=0 TSV=1435448094 TSrc=2920007572

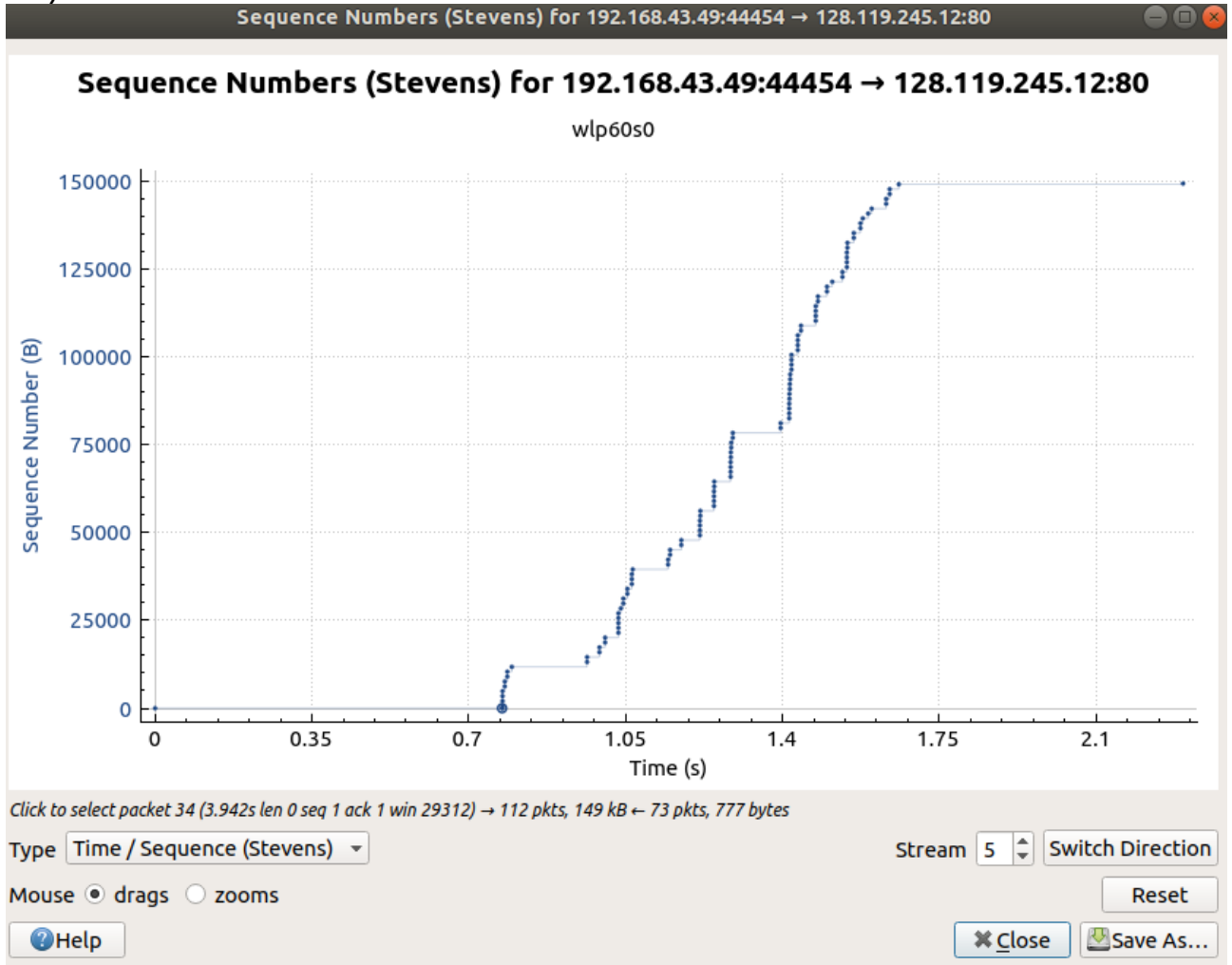
Frame 223: 66 bytes on wire (528 bits), 66 bytes captured (528 bits) on interface 0  
Ethernet II, Src: Intel802.60:00:00:00:00:00, Dst: Samsung\_J770:00:00:00:00:00 (00:00:00:00:00:00)  
Internet Protocol Version 4, Src: 192.168.43.49, Dst: 129.119.245.12  
Transmission Control Protocol, Src Port: 44454, Dst Port: 80, Seq: 149396, Ack: 778, Len: 0  
Source Port: 44454  
Destination Port: 80  
[Stream index: 5]  
[TCP Segment Len: 0]  
Sequence number: 149396 (relative sequence number)  
Acknowledgment number: 778 (relative ack number)  
149396 ... 778 Header Length: 32 bytes (8)  
1. Flags: 0000 (ACK)  
0000 00 22 7f a5 50 60 f6 77 60 50 ad 08 09 45 00 ...[...W[...E  
0001 00 34 49 05 00 00 00 00 00 00 00 00 00 31 00 77 ...[...I...W  
0002 75 0c ad a5 00 00 07 09 70 8a 02 09 f4 3c 00 10 ...P.I P...C...  
0003 00 f1 56 11 00 00 02 02 00 0a 00 00 0a 0c 32 f4 ...[...  
0004 09 1e

Toplam data: 149396

$149396 / 5.462253295 - 3.942496266 = 149396 / 1.519757029 = 98302.5557041$



13-)



Slow start phase 0.8 de başlamakta ve yaklaşık olarak 1. saniyeye kadar devam etmekte. Daha sonra da dalgalanmalar görülmekte.