

1. 38796
2. 128.119.245.12:80

*enp4s0

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tcp

No.	Time	Source	Destination	Protocol	Length	Info
19	3.016690411	192.168.1.48	128.119.245.12	TCP	66	38796 → 80 [FIN, ACK] Seq=1 Ack=2 Win=501 Len=0 TSval=2319580971 TSecr=22637661
20	3.128832795	128.119.245.12	192.168.1.48	TCP	66	80 → 38796 [ACK] Seq=2 Ack=2 Win=235 Len=0 TSval=22637773 TSecr=2319580971
21	3.173087717	128.119.245.12	192.168.1.48	TCP	66	80 → 38796 [FIN, ACK] Seq=1 Ack=1 Win=235 Len=0 TSval=22637818 TSecr=2319576123
22	3.173174842	192.168.1.48	128.119.245.12	TCP	66	38792 → 80 [FIN, ACK] Seq=1 Ack=2 Win=501 Len=0 TSval=2319581127 TSecr=22637818
23	3.286706817	128.119.245.12	192.168.1.48	TCP	66	80 → 38792 [ACK] Seq=2 Ack=2 Win=235 Len=0 TSval=22637932 TSecr=2319581127
54	6.379195289	192.168.1.48	128.119.245.12	TCP	74	38796 → 80 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 SACK_PERM=1 TSval=2319584333 TSecr=0 WS=128

Source Address: 192.168.1.48
Destination Address: 128.119.245.12

▼ Transmission Control Protocol, Src Port: 38796, Dst Port: 80, Seq: 0, Len: 0

Source Port: 38796
Destination Port: 80
[Stream index: 2]
[Conversation completeness: Incomplete, DATA (15)]
[TCP Segment Len: 0]
Sequence Number: 0 (relative sequence number)
Sequence Number (raw): 3673104492
[Next Sequence Number: 1 (relative sequence number)]
Acknowledgment Number: 0
Acknowledgment number (raw): 0
1010 = Header Length: 40 bytes (10)

► Flags: 0x002 (SYN)

Window: 64240
[Calculated window size: 64240]
Checksum: 0x378b [unverified]
[Checksum Status: Unverified]
Urgent Pointer: 0
Options: (20 bytes), Maximum segment size, SACK permitted, Timestamps, No-Operation (NOP), Window scale
[Timestamps]

0000 50 ff 20 68 3d 28 70 85 c2 ff 50 bf 08 00 45 00 P h=(p . P . . E:

Transmission Control Protocol: Protocol

Packets: 274 · Displayed: 213 (77.7%) · Dropped: 0 (0.0%) Profile: Default

3. 54, у него есть флаг SYN
4. 57, Acknowledgement number: 3673104493. Это sequence number предыдущего + 1. SYNACK, потому что флаги SYN и ACK

Wireshark packet capture showing a SYNACK packet (No. 57) from 192.168.1.48 to 128.119.245.12. The packet details show it's a TCP segment with Seq=0, Win=28960, Len=0, MSS=1460, SACK_PERM=1, and TSval=22641144. The flags are SYN and ACK.

No.	Time	Source	Destination	Protocol	Length	Info
21	3.173087717	128.119.245.12	192.168.1.48	TCP	66	80 → 38792 [FIN, ACK] Seq=1 Ack=1 Win=235 Len=0 TSval=22637818 TSecr=2319576123
22	3.173174842	192.168.1.48	128.119.245.12	TCP	66	38792 → 80 [FIN, ACK] Seq=1 Ack=2 Win=501 Len=0 TSval=2319581127 TSecr=22637818
23	3.286706817	128.119.245.12	192.168.1.48	TCP	66	80 → 38792 [ACK] Seq=2 Ack=2 Win=235 Len=0 TSval=22637932 TSecr=2319581127
54	6.379195289	192.168.1.48	128.119.245.12	TCP	74	38796 → 80 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 SACK_PERM=1 TSval=2319584333 TSecr=0 WS=128
57	6.497895852	128.119.245.12	192.168.1.48	TCP	74	80 → 38796 [SYN, ACK] Seq=0 Ack=1 Win=28960 Len=0 MSS=1460 SACK_PERM=1 TSval=22641144 TSecr=2319584452
58	6.497922232	192.168.1.48	128.119.245.12	TCP	66	38796 → 80 [ACK] Seq=1 Ack=1 Win=64256 Len=0 TSval=2319584452 TSecr=22641144

Source Address: 192.168.1.48
Destination Address: 128.119.245.12

Transmission Control Protocol, Src Port: 38796, Dst Port: 80, Seq: 0, Len: 0

Source Port: 38796
Destination Port: 80
[Stream index: 2]
[Conversation completeness: Incomplete, DATA (15)]
[TCP Segment Len: 0]
Sequence Number: 0 (relative sequence number)
Sequence Number (raw): 3673104492
[Next Sequence Number: 1 (relative sequence number)]
Acknowledgment Number: 0
Acknowledgment number (raw): 0
1010 = Header Length: 40 bytes (10)
Flags: 0x002 (SYN)
Window: 64240
[Calculated window size: 64240]
Checksum: 0x378b [unverified]
[Checksum Status: Unverified]
Urgent Pointer: 0
Options: (20 bytes), Maximum segment size, SACK permitted, Timestamps, No-Operation (NOP), Window scale
[Timestamps]

0000 50 ff 20 68 3d 28 70 85 c2 ff 50 bf 08 00 45 00 P h=(p...P...E

Transmission Control Protocol: Protocol

Packets: 274 - Displayed: 213 (77.7%) - Dropped: 0 (0.0%) Profile: Default

5. 59

Wireshark packet capture showing a TCP segment (No. 59) from 192.168.1.48 to 128.119.245.12. The packet details show it's a TCP segment with Seq=1449, Ack=1, Win=64256, Len=1448, TSval=2319584452, TSecr=22641144. The flags are PSH and ACK. The packet payload is shown as a hex dump and ASCII text.

No.	Time	Source	Destination	Protocol	Length	Info
54	6.379195289	192.168.1.48	128.119.245.12	TCP	74	38796 → 80 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 SACK_PERM=1 TSval=2319584333 TSecr=0 WS=128
57	6.497895852	128.119.245.12	192.168.1.48	TCP	74	80 → 38796 [SYN, ACK] Seq=0 Ack=1 Win=28960 Len=0 MSS=1460 SACK_PERM=1 TSval=22641144 TSecr=2319584452
58	6.497922232	192.168.1.48	128.119.245.12	TCP	66	38796 → 80 [ACK] Seq=1 Ack=1 Win=64256 Len=0 TSval=2319584452 TSecr=22641144
59	6.498107481	192.168.1.48	128.119.245.12	TCP	1514	38796 → 80 [ACK] Seq=1 Ack=1 Win=64256 Len=1448 TSval=2319584452 TSecr=22641144 [TCP segment of
60	6.498112401	192.168.1.48	128.119.245.12	TCP	1514	38796 → 80 [PSH, ACK] Seq=1449 Ack=1 Win=64256 Len=1448 TSval=2319584452 TSecr=22641144 [TCP segment of
61	6.498145303	192.168.1.48	128.119.245.12	TCP	1514	38796 → 80 [ACK] Seq=2897 Ack=1 Win=64256 Len=1448 TSval=2319584452 TSecr=22641144 [TCP segment of
62	6.498146174	192.168.1.48	128.119.245.12	TCP	1514	38796 → 80 [PSH, ACK] Seq=4345 Ack=1 Win=64256 Len=1448 TSval=2319584452 TSecr=22641144 [TCP segment of
63	6.498174667	192.168.1.48	128.119.245.12	TCP	1514	38796 → 80 [ACK] Seq=5793 Ack=1 Win=64256 Len=1448 TSval=2319584452 TSecr=22641144 [TCP segment of

[Window size scaling factor: 128]
Checksum: 0x3d2b [unverified]
[Checksum Status: Unverified]
Urgent Pointer: 0
Options: (12 bytes), No-Operation (NOP), No-Operation (NOP), Timestamps
[Timestamps]
[SEQ/ACK analysis]

0040 79 f8 50 4f 53 54 20 2f 77 69 72 65 73 68 61 72 y:POST / wireshar
0050 60 2d 6c 61 62 73 2f 6c 61 62 33 2d 31 2d 72 65 k-labs/1 ab3-1-re
0060 70 6c 79 2e 68 74 6d 20 48 54 54 50 2f 31 2e 31 ply.htm HTTP/1.1
0070 0d 0a 48 6f 73 74 3a 20 67 61 69 61 2e 63 73 2a r-Host: gaia.d
0080 75 6d 61 73 73 2e 65 64 75 0d 0a 55 73 65 72 2d umass.ed u-User-
0090 41 67 65 6e 74 3a 20 4d 6f 74 69 6c 6c 61 2f 35 Agent: Mozilla/5
00a0 2e 30 20 28 58 31 31 3b 20 4c 69 6e 75 78 20 78 i0 (X11; Linux x
00b0 38 36 5f 36 34 30 20 72 76 3a 39 38 2e 39 20 2d 86 64; f v:89.0)
00c0 47 65 63 6b 6f 2f 32 30 31 30 30 21 30 31 20 40 Gecko/20 100101 F
00d0 69 72 65 66 6f 78 2f 39 38 2e 30 0d 0a 41 63 63 ierfox/9.0.0-Acc
00e0 65 70 74 3a 20 74 65 78 74 2f 68 74 6d 6c 2c 61 ept: text/html,a
00f0 70 70 6c 69 63 61 74 69 6f 6e 2f 78 68 74 6d 6c pplicati on/xhtml
0100 2b 70 6d 6c 2c 61 70 70 6e 69 63 61 74 69 6f 6e /xml;app lication
0110 2f 78 6d 6c 3b 71 3a 30 2b 39 2c 69 6d 61 67 65 /xml;q=0 .0,image
0120 2f 61 76 69 66 2c 69 6d 61 67 65 2f 77 65 62 70 /avif,image/webp
0130 2c 2a 2f 2a 3b 71 3d 30 2e 38 0d 0a 41 63 63 65 /*;q=0 .8-Acce
0140 70 74 2d 4c 61 6e 67 75 61 67 65 3a 20 69 6e 2d pt-Langu age: en-
0150 65 53 2c 65 6e 2b 71 3d 30 2e 35 0d 0a 41 63 63 US,en;q=0.5-Acc
0160 65 70 74 2d 45 6e 63 6f 64 69 6e 67 3a 20 67 7a ept-Encod ing: gz
0170 69 70 2c 20 64 65 66 6c 61 74 65 0d 0a 43 6f 6e ip, defl ate-Con
0180 74 65 6e 74 2d 54 79 70 65 3a 20 6d 75 6c 74 69 tent-Typ e: multi
0190 70 61 72 74 2f 66 6f 72 6d 2d 6d 61 74 61 3b 2d part/for m-data;
01a0 62 6f 75 6e 64 61 72 70 3a 2d 2d 2d 2d 2d 2d 2d boundary =-----

The TCP payload of this packet (tcp.payload), 1,448 bytes

Packets: 274 - Displayed: 213 (77.7%) - Dropped: 0 (0.0%) Profile: Default

6. номера: 59, 60, 61, 62, 63, 64. Времена отправки:

59 6.498107481
60 6.498112401
61 6.498145303
62 6.498146174
63 6.498174067
64 6.498174698

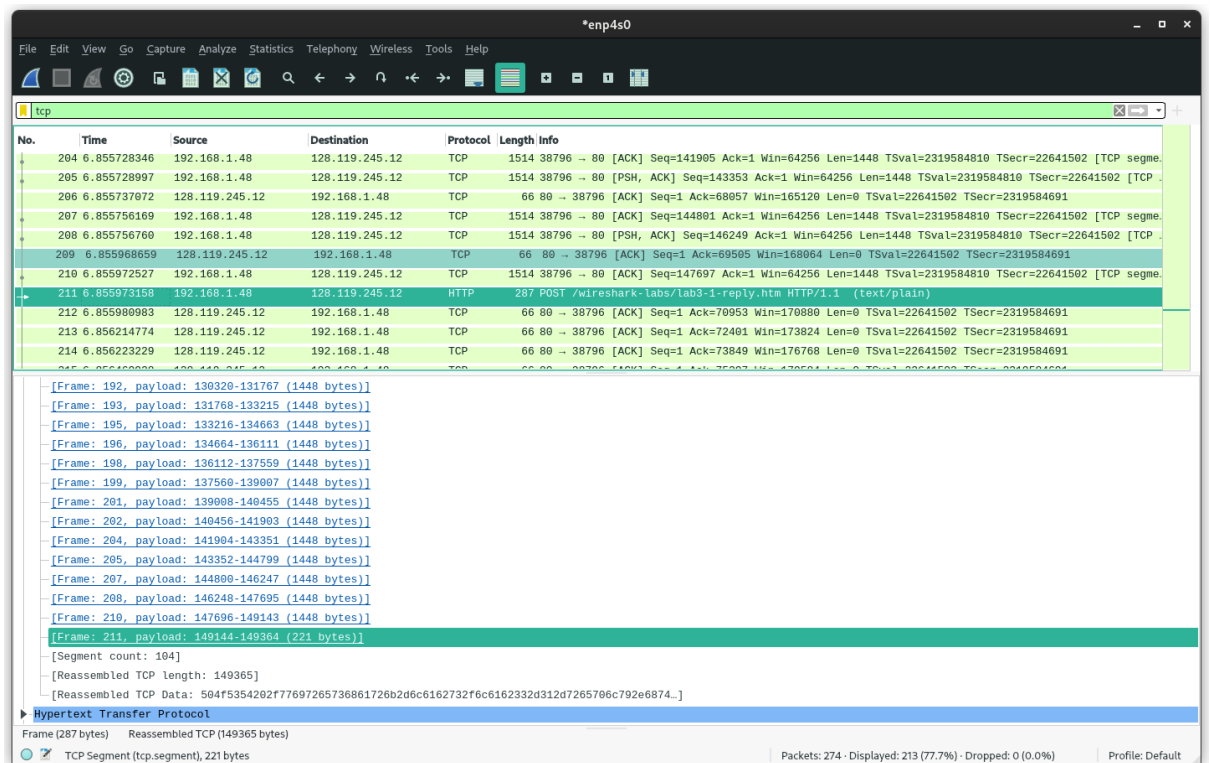
ACK пакеты выделены:

69	6.616748612	128.119.245.12	192.168.1.48	TCP
70	6.616776645	192.168.1.48	128.119.245.12	TCP
71	6.616778408	192.168.1.48	128.119.245.12	TCP
72	6.616794729	128.119.245.12	192.168.1.48	TCP
73	6.616799618	192.168.1.48	128.119.245.12	TCP
74	6.616800269	192.168.1.48	128.119.245.12	TCP
75	6.616815769	128.119.245.12	192.168.1.48	TCP
76	6.616820227	192.168.1.48	128.119.245.12	TCP
77	6.616820768	192.168.1.48	128.119.245.12	TCP
78	6.616868428	128.119.245.12	192.168.1.48	TCP
79	6.616872466	192.168.1.48	128.119.245.12	TCP
80	6.616873067	192.168.1.48	128.119.245.12	TCP
81	6.616979588	128.119.245.12	192.168.1.48	TCP
82	6.616983285	192.168.1.48	128.119.245.12	TCP
83	6.616983846	192.168.1.48	128.119.245.12	TCP
84	6.617035223	128.119.245.12	192.168.1.48	TCP
85	6.617039220	192.168.1.48	128.119.245.12	TCP
86	6.617039801	192.168.1.48	128.119.245.12	TCP

0.118641131, 0.118682328, 118670466, 0.118722254, 0.118805521, 0.118860525
секунд для 59-64 пакета соответственно.

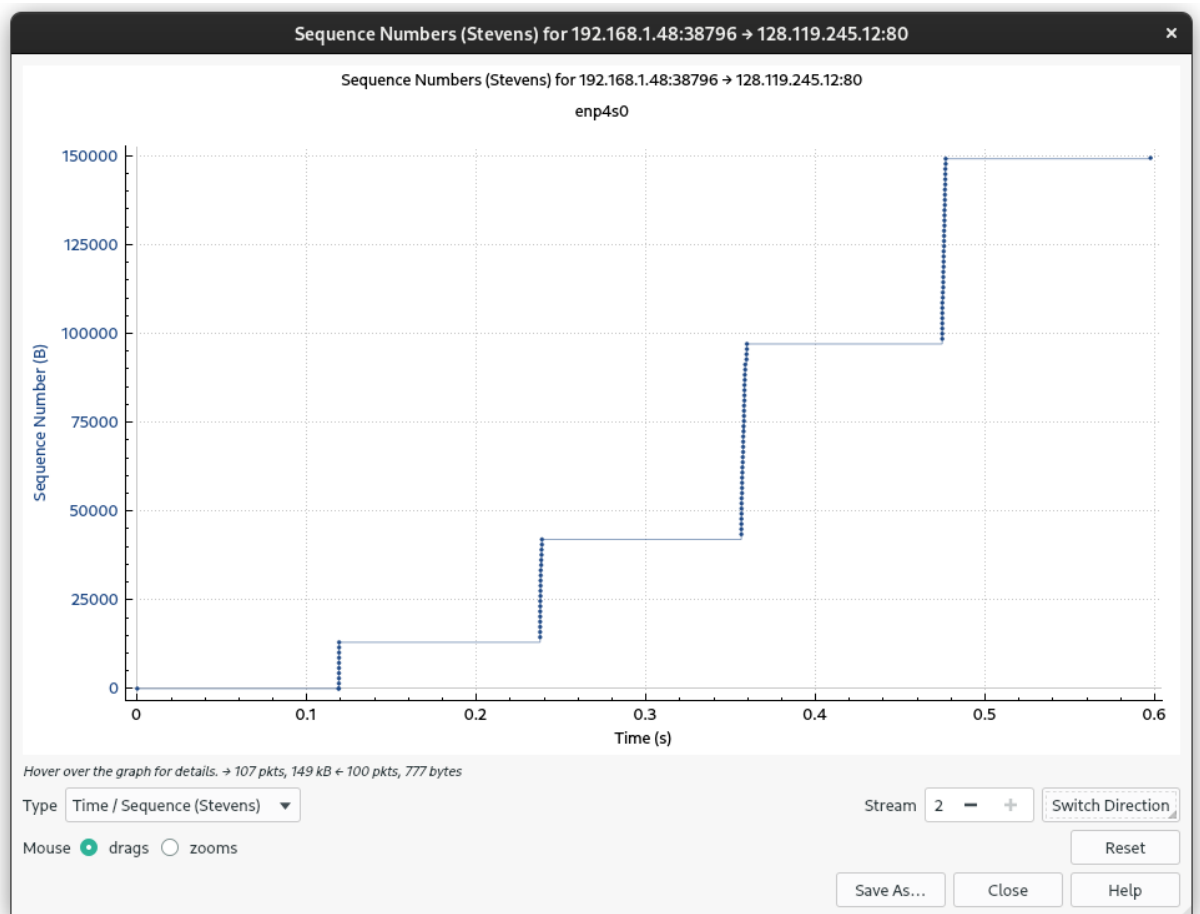
RTT: 0.118641131, 0.118682328, 118670466, 0.118722254, 0.118805521,
0.118860525

7. $103 \cdot 1514 + 287 = 156229$ байт.



Первый пакет: 6.498107481, Последний пакет: 6.855973158

Скорость: $156229 / 0.357865677 = 436558$ байт/с



8.