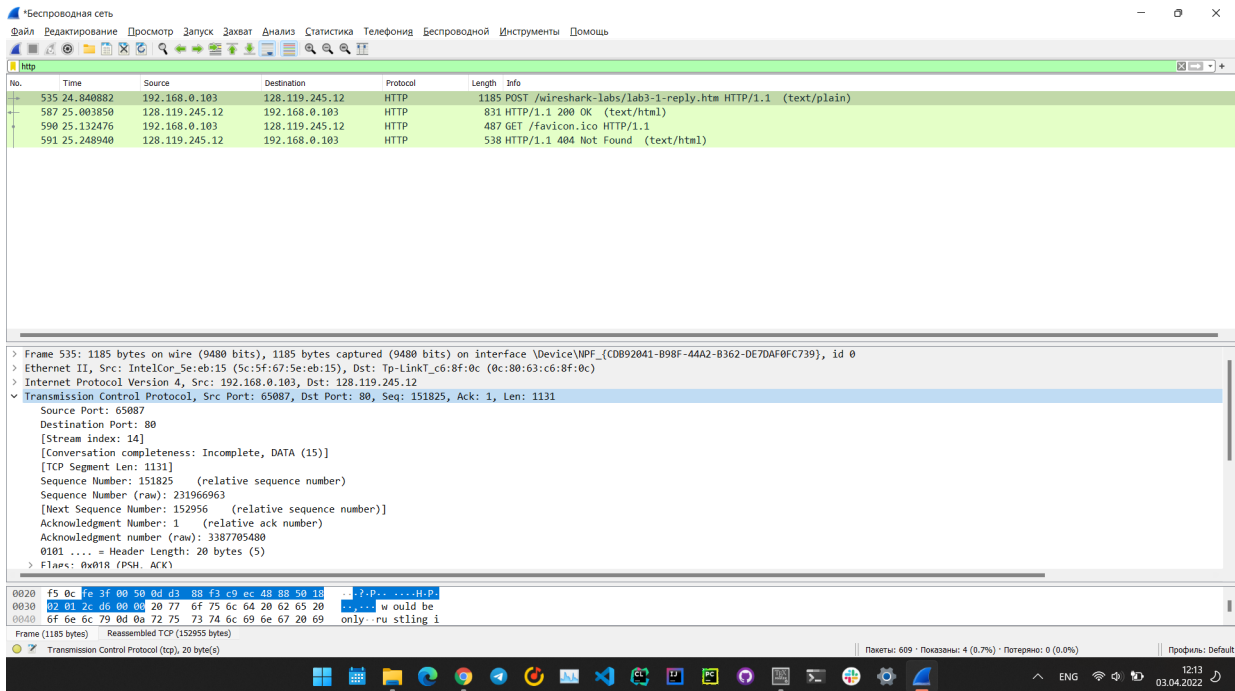


First Homework

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1

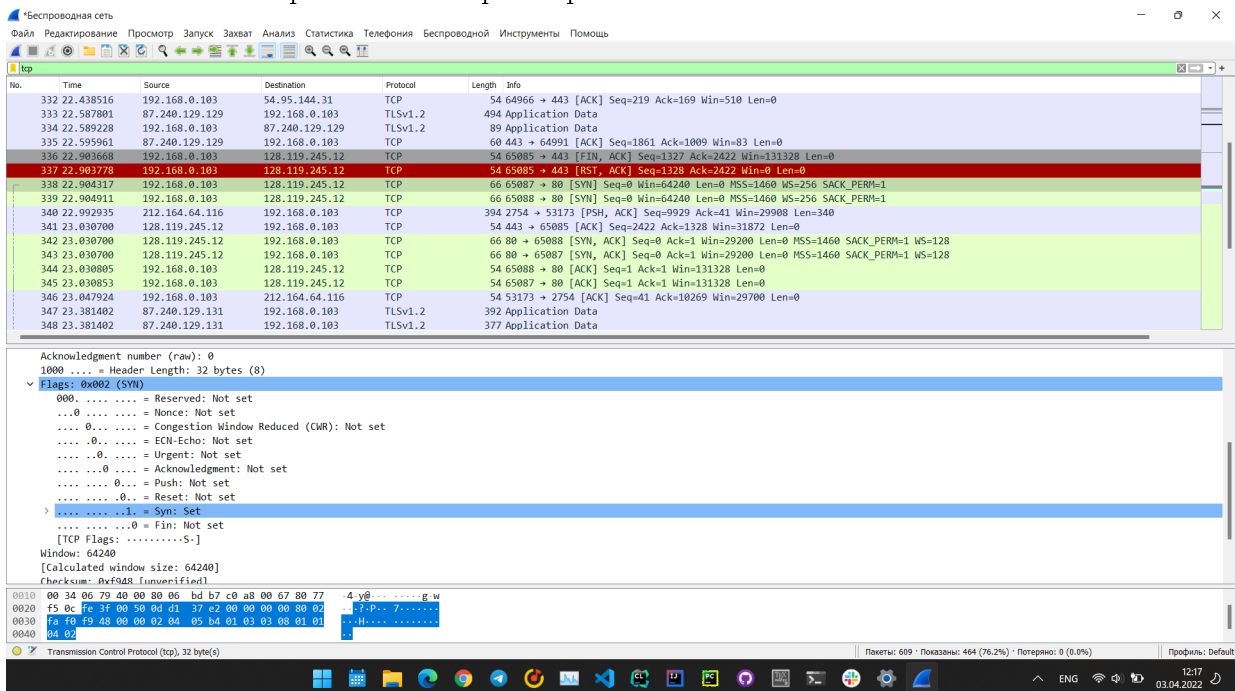


1.1

Src Port: 65087, Ip - 192.168.0.103.

1.2

128.119.245.12. Порт приёма - 80. Порт отправки - тоже 80.



1.3

frame 338. Syn - первый пакет с флагом syn set.

1.4

syn acknowledgment пакет - 342. Acknowledgment set. Acknowledgment number (raw): 3900741268. Это тоже значение что у sequence number из запроса на syn. Определяется тем, что стоят флаги syn и ack.

The image shows a Wireshark packet capture window. The top pane displays a list of network packets. Packet 340 is highlighted, showing it is a TCP SYN-ACK packet from 192.168.0.103 to 212.164.64.116. The bottom pane shows the packet details, including the Ethernet II, Internet Protocol Version 4, and Transmission Control Protocol (TCP) layers. The Data field is expanded, showing the raw bytes of the packet in hexadecimal and ASCII format.

1.5

Я не смог найти tcp с пост запросом. Единственный TCP пакет у которого было поле DATA был под номер 340.

The image shows a Wireshark packet capture window, similar to the one above. Packet 340 is highlighted, showing it is a TCP packet from 192.168.0.103 to 212.164.64.116. The bottom pane shows the packet details, including the Ethernet II, Internet Protocol Version 4, and Transmission Control Protocol (TCP) layers. The Data field is expanded, showing the raw bytes of the packet in hexadecimal and ASCII format.

1.6

Я так понимаю эти пакеты получали ответы с ack примерно через 10 пакетов по порядку. Одно такое время = $24.454075 - 24.585429 = 0.131354$. Это и есть RTT. Для остальных пакетов такое же потому что они принимались и отправлялись в одно и то же время. С точностью до измерения времени компьютером.

1.7

кажется нашёл. Только там флаг Push у первого пакета из серии пакетов для передачи Алисы. Теперь посчитаем количество байтов и разделим на время от первого пакета до последнего

$$\frac{(152955)}{(24.454075 - 25.289221)} = \frac{(152955)}{(0.835146)} = 183147 \text{ байт в секунду. Получается 22893 бит в сек. Я бы сказал слабенько.}$$

2

The screenshot shows the Wireshark interface with a list of network packets. The top pane displays a list of packets, including TCP segments and application data. The bottom pane shows a detailed view of a selected frame (Frame 367), displaying the raw data in hexadecimal and ASCII, along with the packet structure (Ethernet II, IP, and TCP).

No.	Time	Source	Destination	Protocol	Length	Info
362	24.197650	87.240.129.129	192.168.0.103	TCP	60	443 → 64991 [ACK] Seq=1896 Ack=1310 Win=83 Len=0
363	24.198424	87.240.129.129	192.168.0.103	TLSv1.2	624	Application Data
364	24.198451	192.168.0.103	87.240.129.129	TCP	54	64991 → 443 [ACK] Seq=1310 Ack=2466 Win=512 Len=0
366	24.453466	192.168.0.103	128.119.245.12	TCP	690	65087 → 80 [PSH, ACK] Seq=1 Ack=1 Win=131328 Len=636 [TCP segment of a reassembled PDU]
367	24.454075	192.168.0.103	128.119.245.12	TCP	1514	65087 → 80 [ACK] Seq=637 Ack=1 Win=131328 Len=1460 [TCP segment of a reassembled PDU]
368	24.454075	192.168.0.103	128.119.245.12	TCP	1514	65087 → 80 [ACK] Seq=2097 Ack=1 Win=131328 Len=1460 [TCP segment of a reassembled PDU]
369	24.454075	192.168.0.103	128.119.245.12	TCP	1514	65087 → 80 [ACK] Seq=3557 Ack=1 Win=131328 Len=1460 [TCP segment of a reassembled PDU]
370	24.454075	192.168.0.103	128.119.245.12	TCP	1514	65087 → 80 [ACK] Seq=5017 Ack=1 Win=131328 Len=1460 [TCP segment of a reassembled PDU]
371	24.454075	192.168.0.103	128.119.245.12	TCP	1514	65087 → 80 [ACK] Seq=6477 Ack=1 Win=131328 Len=1460 [TCP segment of a reassembled PDU]
372	24.454075	192.168.0.103	128.119.245.12	TCP	1514	65087 → 80 [ACK] Seq=7937 Ack=1 Win=131328 Len=1460 [TCP segment of a reassembled PDU]
373	24.454075	192.168.0.103	128.119.245.12	TCP	1514	65087 → 80 [ACK] Seq=9397 Ack=1 Win=131328 Len=1460 [TCP segment of a reassembled PDU]
374	24.454075	192.168.0.103	128.119.245.12	TCP	1514	65087 → 80 [ACK] Seq=10857 Ack=1 Win=131328 Len=1460 [TCP segment of a reassembled PDU]
375	24.454075	192.168.0.103	128.119.245.12	TCP	1514	65087 → 80 [ACK] Seq=12317 Ack=1 Win=131328 Len=1460 [TCP segment of a reassembled PDU]
385	24.575919	128.119.245.12	192.168.0.103	TCP	60	80 → 65087 [ACK] Seq=1 Ack=637 Win=30592 Len=0
386	24.575969	192.168.0.103	128.119.245.12	TCP	1514	65087 → 80 [ACK] Seq=13777 Ack=1 Win=131328 Len=1460 [TCP segment of a reassembled PDU]
387	24.585429	128.119.245.12	192.168.0.103	TCP	60	80 → 65087 [ACK] Seq=1 Ack=2097 Win=33408 Len=0
388	24.585429	128.119.245.12	192.168.0.103	TCP	60	80 → 65087 [ACK] Seq=1 Ack=3557 Win=36352 Len=0
389	24.585429	128.119.245.12	192.168.0.103	TCP	60	80 → 65087 [ACK] Seq=1 Ack=5017 Win=39296 Len=0
390	24.585429	128.119.245.12	192.168.0.103	TCP	60	80 → 65087 [ACK] Seq=1 Ack=6477 Win=42240 Len=0
391	24.585429	128.119.245.12	192.168.0.103	TCP	60	80 → 65087 [ACK] Seq=1 Ack=7937 Win=45184 Len=0
392	24.585429	128.119.245.12	192.168.0.103	TCP	60	80 → 65087 [ACK] Seq=1 Ack=9397 Win=48000 Len=0
393	24.585429	128.119.245.12	192.168.0.103	TCP	60	80 → 65087 [ACK] Seq=1 Ack=10857 Win=50944 Len=0
394	24.585429	128.119.245.12	192.168.0.103	TCP	60	80 → 65087 [ACK] Seq=1 Ack=12317 Win=53888 Len=0
395	24.585429	128.119.245.12	192.168.0.103	TCP	60	80 → 65087 [ACK] Seq=1 Ack=13777 Win=56832 Len=0
396	24.585522	192.168.0.103	128.119.245.12	TCP	1514	65087 → 80 [ACK] Seq=15237 Ack=1 Win=131328 Len=1460 [TCP segment of a reassembled PDU]
397	24.585522	192.168.0.103	128.119.245.12	TCP	1514	65087 → 80 [PSH, ACK] Seq=16697 Ack=1 Win=131328 Len=1460 [TCP segment of a reassembled PDU]
398	24.585522	192.168.0.103	128.119.245.12	TCP	1514	65087 → 80 [ACK] Seq=18157 Ack=1 Win=131328 Len=1460 [TCP segment of a reassembled PDU]
399	24.585522	192.168.0.103	128.119.245.12	TCP	1514	65087 → 80 [ACK] Seq=19617 Ack=1 Win=131328 Len=1460 [TCP segment of a reassembled PDU]
400	24.585522	192.168.0.103	128.119.245.12	TCP	1514	65087 → 80 [ACK] Seq=21077 Ack=1 Win=131328 Len=1460 [TCP segment of a reassembled PDU]
401	24.585522	192.168.0.103	128.119.245.12	TCP	1514	65087 → 80 [ACK] Seq=22537 Ack=1 Win=131328 Len=1460 [TCP segment of a reassembled PDU]

Frame 367: 1514 bytes on wire (12112 bits), 1514 bytes captured (12112 bits) on interface \Device\NPF_{CDB92041-B98F-44A2-8362-DE7DAF0FC739}, id 0
 Ethernet II, Src: IntelCor_Sebe:15 (5c:5f:67:5e:eb:15), Dst: Tp-LinkT_c6:8f:0c (0c:80:63:c6:8f:0c)

0000 0c 80 63 c6 8f 0c 5c 5f 67 5e eb 15 00 00 45 00 ...C...g...E
 0010 05 dc 06 7e 40 00 80 06 b8 0a c0 a8 00 67 80 77 ...@...g.w
 0020 f5 0c fe 3f 00 50 0d d1 3a 5f c9 ec 48 88 50 10 ...?P...H.P.
 0030 02 01 e3 39 00 00 2d 2d 2d 2d 2d 2d 57 65 62 4b ...9...WebK
 0040 69 74 46 6f 72 6d 42 6f 75 6e 64 61 72 79 76 52 itFormBo undaryvR