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UNSW-COMP-9331

Nov 10th, 2025

LAB 4

Exercise 1:

Question 1:

Server: IP 128.119.245.12, Port 80(HTTP)

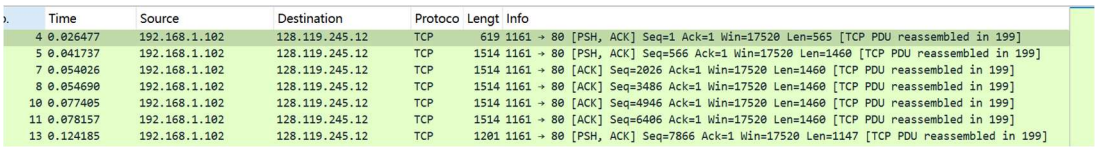
Client: IP 192.168.1.102, Port 1161(source)

Question 2:

The TCP contains HTTP POST command is in Frame 4, Seq Number 1 and Len 565

Question 3:

Part A:



No.	Time	Source	Destination	Protocol	Length	Info
4	0.026477	192.168.1.102	128.119.245.12	TCP	619	1161 → 80 [PSH, ACK] Seq=1 Ack=1 Win=17520 Len=565 [TCP PDU reassembled in 199]
5	0.041737	192.168.1.102	128.119.245.12	TCP	1514	1161 → 80 [PSH, ACK] Seq=566 Ack=1 Win=17520 Len=1460 [TCP PDU reassembled in 199]
7	0.054026	192.168.1.102	128.119.245.12	TCP	1514	1161 → 80 [ACK] Seq=2026 Ack=1 Win=17520 Len=1460 [TCP PDU reassembled in 199]
8	0.054690	192.168.1.102	128.119.245.12	TCP	1514	1161 → 80 [ACK] Seq=3486 Ack=1 Win=17520 Len=1460 [TCP PDU reassembled in 199]
10	0.077405	192.168.1.102	128.119.245.12	TCP	1514	1161 → 80 [ACK] Seq=4946 Ack=1 Win=17520 Len=1460 [TCP PDU reassembled in 199]
11	0.078157	192.168.1.102	128.119.245.12	TCP	1514	1161 → 80 [ACK] Seq=6406 Ack=1 Win=17520 Len=1460 [TCP PDU reassembled in 199]
13	0.124185	192.168.1.102	128.119.245.12	TCP	1201	1161 → 80 [PSH, ACK] Seq=7866 Ack=1 Win=17520 Len=1147 [TCP PDU reassembled in 199]

Part B & C:

Frame	Sent Time	Seq	Len	ACK	RTT	Est. RTT
4	0.026477	1	565	0.053937	0.02746	0.02746
5	0.041737	566	1460	0.077294	0.03556	0.02846
7	0.054026	2026	1460	0.124885	0.07086	0.03359
8	0.054690	3486	1460	0.169118	0.11443	0.04310
10	0.077405	4946	1460	0.217299	0.13989	0.05495
11	0.078157	6406	1460	0.267802	0.18965	0.07168

Part D:

The first segment is 565 bytes, the others are 1460 bytes each.

Question 4:

Min advertise windows size 5840 bytes

It does not throttle the sender

Question 5:

No

Question 6:

1460 bytes of data would be receiver typically acknowledge in an ACK

Some ACK acknowledges 2920 bytes, which is 2 times of 1460, there is delayed ACK

Question 7:

Calculation: (171kB * 1000B/kB)/ (5.651s * 1000ms/s) = 30260 bytes/s

= 242kbps

Wireshark data: 241kbps

Exercise 2:

Question 1:

SEQ 2818463618, Frame 295

Question 2:

SEQ 1247095790 Frame 296

ACK 2818463619

It comes from Question 1, the init SEQ + 1

Question 3:

SEQ 2818463619

ACK 1247095791

No

Question 4:

The client(10.9.16.201) done the active close.

Frame 304 client send FIN, ACK to server

It is 4 segment, FIN->ACK->FIN->ACK

Question 5:

Client -> Server: 33 bytes

Server -> Client: 40 bytes

Data acknowledge corresponds to the difference of the final ACK and init SEQ