

Computer Networks

Lab 09

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BSSE-5A

Answers of Questions mentioned in mannual:

1. Source port no. = 60643 Destination port no. = 80

Src Port: 60643, Dst Port: 80,

2. Sequence no. 2682012317 TCP SYN no. 0X002

Sequence number: 0 (relative sequence number)

Sequence number (raw): 2682012317

Flags: 0x002 (SYN)

3. Sequence no. 349487776

Sequence number: 0 (relative sequence number)

Sequence number (raw): 349487776

Acknowledgment no. 2682012318

Acknowledgment number: 1 (relative ack number)

Acknowledgment number (raw): 2682012318

The server determine this value by just adding 1 to the sequence number.

Flags: 0x012 (SYN, ACK)

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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.]
```

Flags identify the segment as a SYNAC segment.

4. Length of TCP segments are following:

1. 78
2. 74
3. 66
4. 257
5. 66
6. 311

No.	Time	Source	Destination	Protocol	Length	Info
1	0.000000	192.168.1.122	64.238.147.113	TCP	78	60643 → 80 [SYN] Seq=0 Win=65535 Len=0 MSS=1460 WS=8 TSval=25...
2	0.088010	64.238.147.113	192.168.1.122	TCP	74	80 → 60643 [SYN, ACK] Seq=0 Ack=1 Win=5792 Len=0 MSS=1380 SAC...
3	0.088080	192.168.1.122	64.238.147.113	TCP	66	60643 → 80 [ACK] Seq=1 Ack=1 Win=524280 Len=0 TSval=256679881...
4	0.088579	192.168.1.122	64.238.147.113	HTTP	257	GET /sigcomm/2011/papers/sigcomm/p2.pdf HTTP/1.1
5	0.177819	64.238.147.113	192.168.1.122	TCP	66	80 → 60643 [ACK] Seq=1 Ack=192 Win=6864 Len=0 TSval=401689352...
6	0.178321	64.238.147.113	192.168.1.122	TCP	311	80 → 60643 [PSH, ACK] Seq=1 Ack=192 Win=6864 Len=245 TSval=40...

5. We will check the sequence number if it is changing, it means same package is retransmitting again and again.
“192” sequence number is repeating, hence proved.

No.	Time	Source	Destination	Protocol	Length	Info
1	0.000000	192.168.1.122	64.238.147.113	TCP	78	60643 → 80 [SYN] Seq=0 Win=65535 Len=0 MSS=1460 WS=8 TSval=25...
2	0.088010	64.238.147.113	192.168.1.122	TCP	74	80 → 60643 [SYN, ACK] Seq=0 Ack=1 Win=5792 Len=0 MSS=1380 SAC...
3	0.088080	192.168.1.122	64.238.147.113	TCP	66	60643 → 80 [ACK] Seq=1 Ack=1 Win=524280 Len=0 TSval=256679881...
4	0.088579	192.168.1.122	64.238.147.113	HTTP	257	GET /sigcomm/2011/papers/sigcomm/p2.pdf HTTP/1.1
5	0.177819	64.238.147.113	192.168.1.122	TCP	66	80 → 60643 [ACK] Seq=1 Ack=192 Win=6864 Len=0 TSval=401689352...
6	0.178321	64.238.147.113	192.168.1.122	TCP	311	80 → 60643 [PSH, ACK] Seq=1 Ack=192 Win=6864 Len=245 TSval=40...
7	0.178388	192.168.1.122	64.238.147.113	TCP	66	60643 → 80 [ACK] Seq=192 Ack=246 Win=524280 Len=0 TSval=25667...
8	0.189114	64.238.147.113	192.168.1.122	TCP	1434	80 → 60643 [ACK] Seq=246 Ack=192 Win=6864 Len=1368 TSval=4016...
9	0.266705	64.238.147.113	192.168.1.122	TCP	1434	80 → 60643 [ACK] Seq=1614 Ack=192 Win=6864 Len=1368 TSval=401...
10	0.266787	192.168.1.122	64.238.147.113	TCP	66	60643 → 80 [ACK] Seq=192 Ack=2982 Win=523944 Len=0 TSval=2566...
11	0.267657	64.238.147.113	192.168.1.122	TCP	1434	80 → 60643 [ACK] Seq=2982 Ack=192 Win=6864 Len=1368 TSval=401...
12	0.354612	64.238.147.113	192.168.1.122	TCP	1434	80 → 60643 [ACK] Seq=4350 Ack=192 Win=6864 Len=1368 TSval=401...
13	0.354647	192.168.1.122	64.238.147.113	TCP	66	60643 → 80 [ACK] Seq=192 Ack=5718 Win=523944 Len=0 TSval=2566...
14	0.355174	64.238.147.113	192.168.1.122	TCP	1434	80 → 60643 [ACK] Seq=5718 Ack=192 Win=6864 Len=1368 TSval=401...
15	0.355561	64.238.147.113	192.168.1.122	TCP	1434	80 → 60643 [ACK] Seq=7086 Ack=192 Win=6864 Len=1368 TSval=401...
16	0.355579	192.168.1.122	64.238.147.113	TCP	66	60643 → 80 [ACK] Seq=192 Ack=8454 Win=523944 Len=0 TSval=2566...
17	0.440719	64.238.147.113	192.168.1.122	TCP	1434	80 → 60643 [ACK] Seq=8454 Ack=192 Win=6864 Len=1368 TSval=401...
18	0.441973	64.238.147.113	192.168.1.122	TCP	1434	80 → 60643 [ACK] Seq=9822 Ack=192 Win=6864 Len=1368 TSval=401...
19	0.442003	192.168.1.122	64.238.147.113	TCP	66	60643 → 80 [ACK] Seq=192 Ack=11190 Win=523944 Len=0 TSval=256...
20	0.442648	64.238.147.113	192.168.1.122	TCP	1434	80 → 60643 [PSH, ACK] Seq=11190 Ack=192 Win=6864 Len=1368 TSv...
21	0.442716	192.168.1.122	64.238.147.113	TCP	66	60643 → 80 [ACK] Seq=192 Ack=12558 Win=523944 Len=0 TSval=256...
22	0.445916	64.238.147.113	192.168.1.122	TCP	1434	80 → 60643 [ACK] Seq=12558 Ack=192 Win=6864 Len=1368 TSval=40...
23	0.446386	64.238.147.113	192.168.1.122	TCP	1434	80 → 60643 [ACK] Seq=13926 Ack=192 Win=6864 Len=1368 TSval=40...