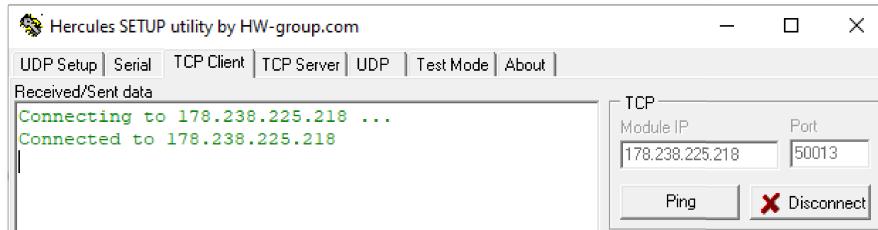


## Wireshark Connect to TCP Go Server

Успішне підключення до сервера



Запуск сервера ./go

Go Server

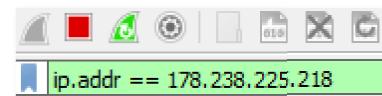
```
[root@vmi511663 go]# ./go
2023/01/22 22:26:43 TCP Server Started on port: 50013
2023/01/22 22:27:29 Connected New Client: 91.201.234.204:64764 (Guest)
```

188 300.017492	178.238.225.218	192.168.0.145	TCP	60 22 → 64712 [ACK] Seq=1 Ack=217 Win=274 Len=0
191 315.211400	192.168.0.145	178.238.225.218	TCP	66 64764 → 50013 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 WS=256 SACK_PERM=1
192 315.240596	178.238.225.218	192.168.0.145	TCP	66 50013 → 64764 [SYN, ACK] Seq=0 Ack=1 Win=29200 Len=0 MSS=1460 SACK_PERM=1 WS=128
193 315.240653	192.168.0.145	178.238.225.218	TCP	54 64764 → 50013 [ACK] Seq=1 Ack=1 Win=262656 Len=0

Помилка підключення до вимкненого сервера (Hercules виконує 1 запит і 4 повтори тогож запиту)

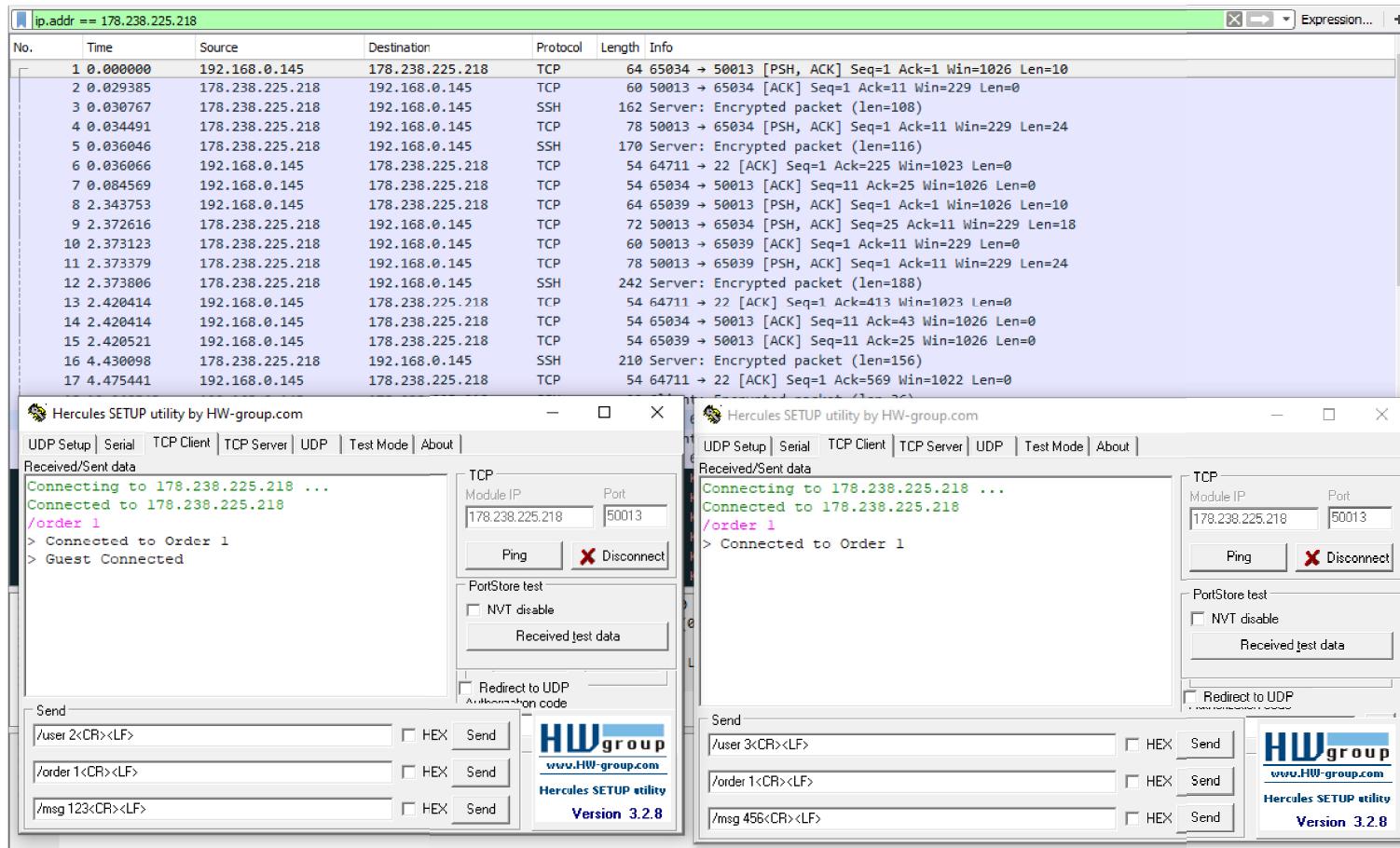


Налаштування Wireshark фільтра на адресу Сервера



1 3.1.6.172	192.168.0.145	178.238.225.218	TCP	60 2.741357 → 50013 [SYN] Seq=1 Ack=1 Win=274 Len=0
3 2.676256	192.168.0.145	178.238.225.218	TCP	66 64840 → 50013 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 WS=256 SACK_PERM=1
4 2.705492	178.238.225.218	192.168.0.145	TCP	60 50013 → 64840 [RST, ACK] Seq=1 Ack=1 Win=0 Len=0
5 3.210190	192.168.0.145	178.238.225.218	TCP	66 [TCP Retransmission] 64840 → 50013 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 WS=256 SACK_PERM=1
6 3.239474	178.238.225.218	192.168.0.145	TCP	60 50013 → 64840 [RST, ACK] Seq=1 Ack=1 Win=0 Len=0
7 3.741357	192.168.0.145	178.238.225.218	TCP	66 [TCP Retransmission] 64840 → 50013 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 WS=256 SACK_PERM=1
8 3.770434	178.238.225.218	192.168.0.145	TCP	60 50013 → 64840 [RST, ACK] Seq=1 Ack=1 Win=0 Len=0
9 4.272641	192.168.0.145	178.238.225.218	TCP	66 [TCP Retransmission] 64840 → 50013 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 WS=256 SACK_PERM=1
10 4.302537	178.238.225.218	192.168.0.145	TCP	60 50013 → 64840 [RST, ACK] Seq=1 Ack=1 Win=0 Len=0
11 4.803938	192.168.0.145	178.238.225.218	TCP	66 [TCP Retransmission] 64840 → 50013 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 WS=256 SACK_PERM=1
12 4.833493	178.238.225.218	192.168.0.145	TCP	60 50013 → 64840 [RST, ACK] Seq=1 Ack=1 Win=0 Len=0
15 8.854349	192.168.0.145	178.238.225.218	SSH	90 Client: Encrypted packet (len=36)

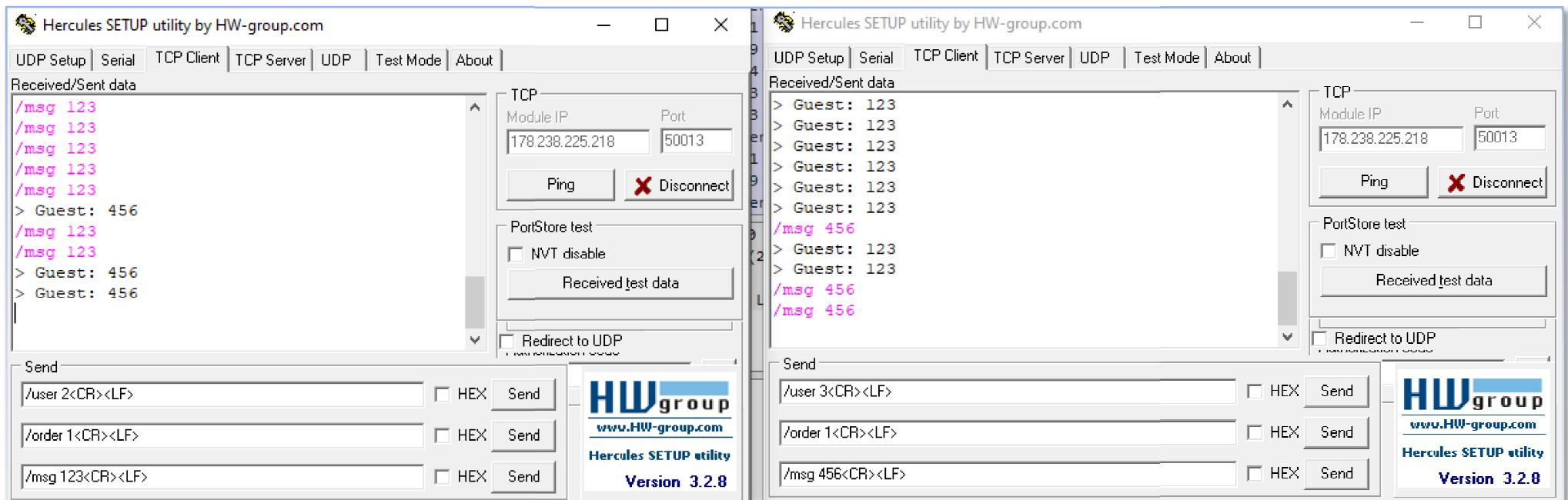
## Підключення двох клієнтів (user) "2" та "3" до кімнати (order) "1"



## На сервері не реалізований Keep-Alive

63 00.0/b/0/00	178.238.225.218	192.168.0.145	TCP	60 22 → 64/12 [ACK] Seq=1 ACK=0 Win=2/4 Len=0
67 65.957208	178.238.225.218	192.168.0.145	TCP	60 [TCP Keep-Alive] 50013 → 65034 [ACK] Seq=0 Ack=1 Win=29312 Len=0
68 65.957234	192.168.0.145	178.238.225.218	TCP	54 [TCP Keep-Alive ACK] 65034 → 50013 [ACK] Seq=1 Ack=1 Win=262656 Len=0
69 75.686416	178.238.225.218	192.168.0.145	TCP	60 [TCP Keep-Alive] 50013 → 65039 [ACK] Seq=0 Ack=1 Win=29312 Len=0
70 75.686443	192.168.0.145	178.238.225.218	TCP	54 [TCP Keep-Alive ACK] 65039 → 50013 [ACK] Seq=1 Ack=1 Win=262656 Len=0
79 81.317436	178.238.225.218	192.168.0.145	TCP	60 [TCP Keep-Alive] 50013 → 65034 [ACK] Seq=0 Ack=1 Win=29312 Len=0
80 81.317463	192.168.0.145	178.238.225.218	TCP	54 [TCP Keep-Alive ACK] 65034 → 50013 [ACK] Seq=1 Ack=1 Win=262656 Len=0
83 91.046666	178.238.225.218	192.168.0.145	TCP	60 [TCP Keep-Alive] 50013 → 65039 [ACK] Seq=0 Ack=1 Win=29312 Len=0
84 91.046693	192.168.0.145	178.238.225.218	TCP	54 [TCP Keep-Alive ACK] 65039 → 50013 [ACK] Seq=1 Ack=1 Win=262656 Len=0
91 96.677566	178.238.225.218	192.168.0.145	TCP	60 [TCP Keep-Alive] 50013 → 65034 [ACK] Seq=0 Ack=1 Win=29312 Len=0
92 96.677593	192.168.0.145	178.238.225.218	TCP	54 [TCP Keep-Alive ACK] 65034 → 50013 [ACK] Seq=1 Ack=1 Win=262656 Len=0

## Відправка повідомлень (msg) між двома клієнтами



```

2023/01/22 23:21:00 MESSAGE /msg 123
2023/01/22 23:21:04 MESSAGE /msg 456
2023/01/22 23:21:05 MESSAGE /msg 123
2023/01/22 23:21:05 MESSAGE /msg 123
2023/01/22 23:21:06 MESSAGE /msg 456
2023/01/22 23:21:07 MESSAGE /msg 456

```

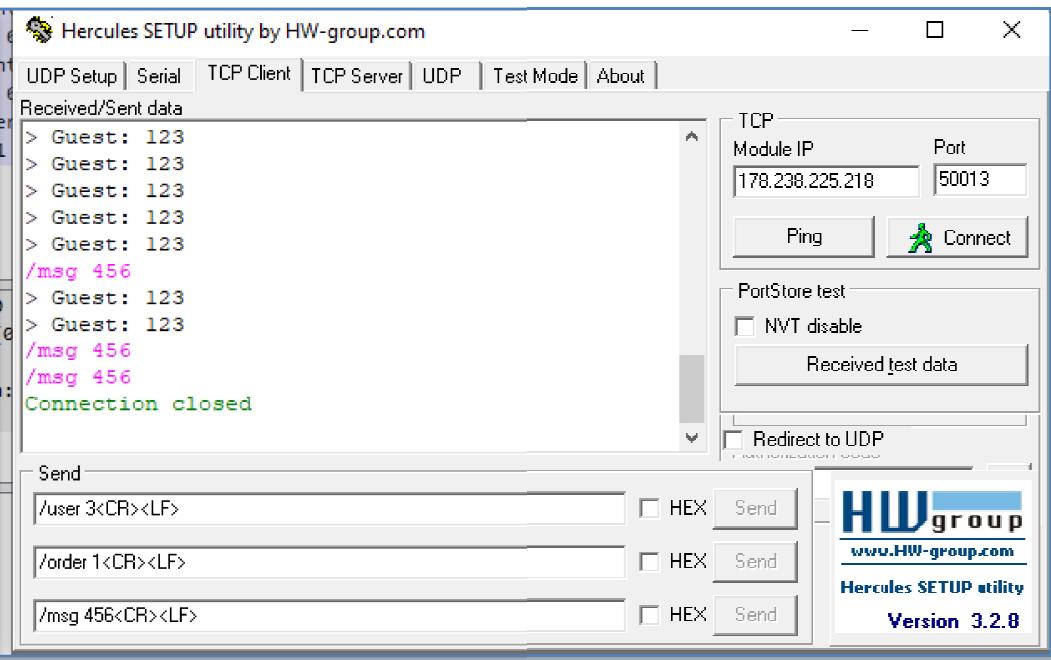
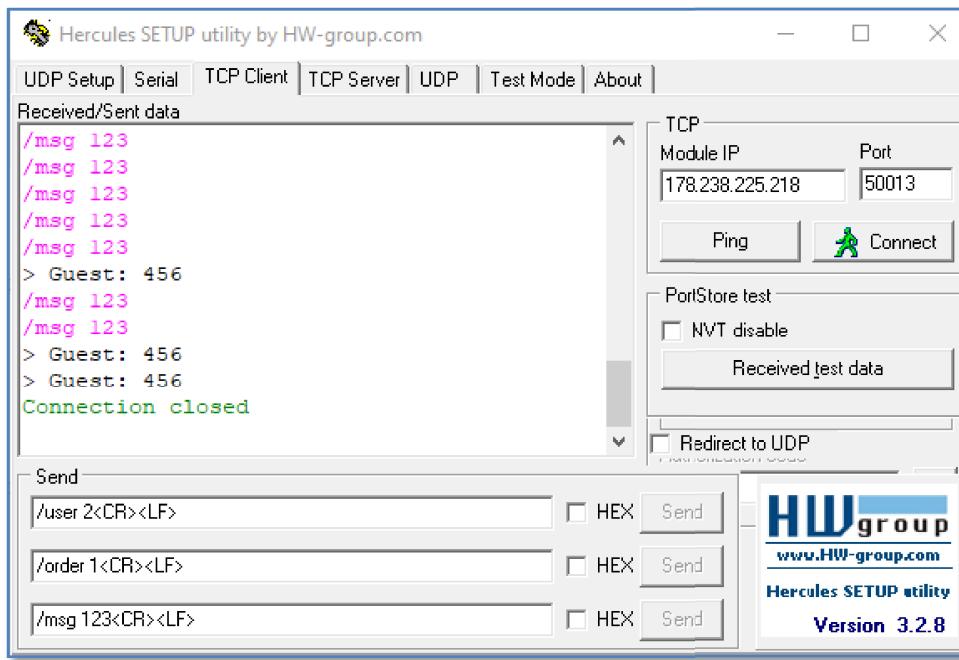
7	8.490739	178.238.225.218	192.168.0.145	TCP	68 50013 → 65039 [PSH, ACK] Seq=1 Ack=1 Win=229 Len=14
8	8.491154	178.238.225.218	192.168.0.145	SSH	162 Server: Encrypted packet (len=108)
9	8.546593	192.168.0.145	178.238.225.218	TCP	54 65039 → 50013 [ACK] Seq=1 Ack=15 Win=1024 Len=0
10	8.546601	192.168.0.145	178.238.225.218	TCP	54 64711 → 22 [ACK] Seq=1 Ack=109 Win=1026 Len=0
11	12.036151	192.168.0.145	178.238.225.218	TCP	64 65039 → 50013 [PSH, ACK] Seq=1 Ack=15 Win=1024 Len=10
12	12.065038	178.238.225.218	192.168.0.145	TCP	68 50013 → 65034 [PSH, ACK] Seq=2 Ack=11 Win=229 Len=14
13	12.065583	178.238.225.218	192.168.0.145	TCP	60 50013 → 65039 [ACK] Seq=15 Ack=11 Win=229 Len=0
14	12.066094	178.238.225.218	192.168.0.145	SSH	162 Server: Encrypted packet (len=108)
15	12.116559	192.168.0.145	178.238.225.218	TCP	54 [TCP ACKed unseen segment] 65034 → 50013 [ACK] Seq=11 Ack=16 Win=1025 Len=0
16	12.116559	192.168.0.145	178.238.225.218	TCP	54 64711 → 22 [ACK] Seq=1 Ack=217 Win=1025 Len=0
17	13.149137	192.168.0.145	178.238.225.218	TCP	64 65034 → 50013 [PSH, ACK] Seq=11 Ack=16 Win=1025 Len=10
18	13.177877	178.238.225.218	192.168.0.145	TCP	60 50013 → 65034 [ACK] Seq=16 Ack=21 Win=229 Len=0
19	13.179356	178.238.225.218	192.168.0.145	TCP	68 50013 → 65039 [PSH, ACK] Seq=15 Ack=11 Win=229 Len=14
20	13.179661	178.238.225.218	192.168.0.145	SSH	162 Server: Encrypted packet (len=108)
21	13.226024	192.168.0.145	178.238.225.218	TCP	54 64711 → 22 [ACK] Seq=1 Ack=325 Win=1025 Len=0
22	13.226025	192.168.0.145	178.238.225.218	TCP	54 65039 → 50013 [ACK] Seq=11 Ack=29 Win=1024 Len=0
23	13.540886	192.168.0.145	178.238.225.218	TCP	64 65034 → 50013 [PSH, ACK] Seq=21 Ack=16 Win=1025 Len=10
24	13.569768	178.238.225.218	192.168.0.145	TCP	60 50013 → 65034 [ACK] Seq=16 Ack=31 Win=229 Len=0
25	13.570966	178.238.225.218	192.168.0.145	TCP	68 50013 → 65039 [PSH, ACK] Seq=29 Ack=11 Win=229 Len=14
26	13.571409	178.238.225.218	192.168.0.145	SSH	162 Server: Encrypted packet (len=108)
27	13.616252	192.168.0.145	178.238.225.218	TCP	54 64711 → 22 [ACK] Seq=1 Ack=433 Win=1024 Len=0
28	13.616255	192.168.0.145	178.238.225.218	TCP	54 65039 → 50013 [ACK] Seq=11 Ack=43 Win=1024 Len=0
29	14.148671	178.238.225.218	192.168.0.145	SSH	210 Server: Encrypted packet (len=156)

Зупинка сервера [Ctrl]+[C]

```

2023/01/22 23:21:07 MESSAGE /msg 456
^C
[root@vmi511663 go]#

```



1	0.000000	192.168.0.145	178.238.225.218	SSH	90 Client: Encrypted packet (len=36)
2	0.030377	178.238.225.218	192.168.0.145	TCP	60 50013 → 65034 [FIN, ACK] Seq=1 Ack=1 Win=229 Len=0
3	0.030379	178.238.225.218	192.168.0.145	TCP	60 22 → 64711 [ACK] Seq=1 Ack=37 Win=261 Len=0
4	0.030419	192.168.0.145	178.238.225.218	TCP	54 65034 → 50013 [ACK] Seq=1 Ack=2 Win=1025 Len=0
5	0.031027	178.238.225.218	192.168.0.145	SSH	210 Server: Encrypted packet (len=156)
6	0.031255	178.238.225.218	192.168.0.145	TCP	60 50013 → 65039 [FIN, ACK] Seq=1 Ack=1 Win=229 Len=0
7	0.031269	192.168.0.145	178.238.225.218	TCP	54 65039 → 50013 [ACK] Seq=1 Ack=2 Win=1024 Len=0
8	0.031759	178.238.225.218	192.168.0.145	SSH	122 Server: Encrypted packet (len=68)
9	0.031778	192.168.0.145	178.238.225.218	TCP	54 64711 → 22 [ACK] Seq=37 Ack=225 Win=1026 Len=0
10	0.032371	178.238.225.218	192.168.0.145	SSH	114 Server: Encrypted packet (len=60)
11	0.044634	192.168.0.145	178.238.225.218	TCP	54 65034 → 50013 [FIN, ACK] Seq=1 Ack=2 Win=1025 Len=0
12	0.053378	192.168.0.145	178.238.225.218	TCP	54 65039 → 50013 [FIN, ACK] Seq=1 Ack=2 Win=1024 Len=0
13	0.073811	178.238.225.218	192.168.0.145	TCP	60 50013 → 65034 [ACK] Seq=2 Ack=2 Win=229 Len=0
14	0.075564	192.168.0.145	178.238.225.218	TCP	54 64711 → 22 [ACK] Seq=37 Ack=285 Win=1026 Len=0
15	0.082951	178.238.225.218	192.168.0.145	TCP	60 50013 → 65039 [ACK] Seq=2 Ack=2 Win=229 Len=0