

```
PS [REDACTED]WireSharkCommunicationTesting> python server.py
Server listening on port number:12345
Got connection from ('[REDACTED]', 51885)
```

```
PS C:\Users\user> cd C:\Users\user\Documents\WireSharkCommunicationTesting> python client.py
Enter a message to send to the server: Testing
```

```
Received from client: Testing
Enter a message to send to the client: Testing confirmed server-side
```

[illegible]

1

Adapter for loopback traffic capture

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

tcp.stream eq 0

No.	Time	Source	Destination	Protocol	Length	Info
3	6.379751			TCP	56	51930 → 12345 [SYN] Seq=0 Win=65535 Len=0 MSS=65495 WS=256 SACK_PERM
4	6.379786			TCP	56	12345 → 51930 [SYN, ACK] Seq=0 Ack=1 Win=65535 Len=0 MSS=65495 WS=256 SACK_PERM
5	6.379897			TCP	44	51930 → 12345 [ACK] Seq=1 Ack=1 Win=327424 Len=0
62	93.166479			TCP	51	51930 → 12345 [PSH, ACK] Seq=1 Ack=1 Win=327424 Len=7
63	93.166528			TCP	44	12345 → 51930 [ACK] Seq=1 Ack=8 Win=2161152 Len=0
226	462.637632			TCP	73	12345 → 51930 [PSH, ACK] Seq=1 Ack=8 Win=2161152 Len=29
227	462.637658			TCP	44	51930 → 12345 [ACK] Seq=8 Ack=30 Win=327424 Len=0

> Frame 226: 73 bytes on wire (584 bits), 73 bytes captured (584 bits) on interface \Device\NPF_{...}, id 0

> Null/Loopback

> Internet Protocol Version 4, Src: ..., Dst: ...

> Transmission Control Protocol, Src Port: 12345, Dst Port: 51930, Seq: 1, Ack: 8, Len: 29

> Data (29 bytes)

 Data: 54657374696e6728636f6e6669726d6564207365727665722d73696e465
 [Length: 29]

0000 02 00 00 00 45 00 00 45 05 24 40 00 00 06 00 00E.\$@.....
0010 ca da 0a 6c d8 3d 09 00 00 00 00 00 00 00 00 00l=.....
0020 63 37 34 65 50 18 20 fa 66 80 00 00 54 65 73 74 c74eP...f...Test
0030 69 6e 67 20 63 6f 6e 66 69 72 6d 65 64 20 73 65 ing confirmed se
0040 72 76 65 72 2d 73 69 64 65 rver-side e

Wireshark - Follow TCP Stream (tcp.stream eq 0) - Adapter for loopback traffic capture

TestingTesting confirmed server-side

1 client pkt, 1 server pkt, 1 turn.

Entire conversation (36 bytes) Show data as ASCII Stream 0

Find: Find Next

Filter Out This Stream Print Save as... Back Close Help

Destination Address (ip.dst), 4 bytes Packets: 244 · Displayed: 7 (2.9%)

client.py

```
Received from server: Testing confirmed server-side
Enter a message to send to the server: close
```

Wireshark 'close'

The screenshot shows the Wireshark interface with a packet capture on the 'Adapter for loopback traffic capture' interface. The packet list shows a TCP connection established between 192.168.1.100 and 192.168.1.100. The packet details pane shows the selected packet (No. 336) as a TCP Reset (RST) with Seq=12345, Win=0, Len=0, and a message 'Testing confirmed server-side close'. The packet bytes pane shows the raw data of the packet.

No.	Time	Source	Destination	Protocol	Length	Info
336	6.379751	192.168.1.100	192.168.1.100	TCP	56	51930 → 12345 [RST] Seq=12345 Win=0 Len=0
337	6.379786	192.168.1.100	192.168.1.100	TCP	56	12345 → 51930 [ACK] Seq=12345 Win=0 Len=0
338	6.379897	192.168.1.100	192.168.1.100	TCP	44	51930 → 12345 [ACK] Seq=12345 Win=0 Len=0
339	6.379929	192.168.1.100	192.168.1.100	TCP	51	51930 → 12345 [PSH, ACK] Seq=12345 Win=0 Len=7
340	6.379958	192.168.1.100	192.168.1.100	TCP	44	12345 → 51930 [ACK] Seq=12345 Win=0 Len=0
341	6.379986	192.168.1.100	192.168.1.100	TCP	73	12345 → 51930 [PSH, ACK] Seq=12345 Win=0 Len=29
342	6.379998	192.168.1.100	192.168.1.100	TCP	44	51930 → 12345 [ACK] Seq=12345 Win=0 Len=0
343	6.380000	192.168.1.100	192.168.1.100	TCP	49	51930 → 12345 [PSH, ACK] Seq=12345 Win=0 Len=5
344	6.380002	192.168.1.100	192.168.1.100	TCP	44	12345 → 51930 [ACK] Seq=12345 Win=0 Len=0
345	6.380004	192.168.1.100	192.168.1.100	TCP	44	51930 → 12345 [FIN, ACK] Seq=12345 Win=0 Len=0
346	6.380006	192.168.1.100	192.168.1.100	TCP	44	12345 → 51930 [ACK] Seq=12345 Win=0 Len=0
347	6.380008	192.168.1.100	192.168.1.100	TCP	44	12345 → 51930 [FIN, ACK] Seq=12345 Win=0 Len=0
348	6.380010	192.168.1.100	192.168.1.100	TCP	44	51930 → 12345 [ACK] Seq=12345 Win=0 Len=0

The packet details pane shows the selected packet (No. 336) as a TCP Reset (RST) with Seq=12345, Win=0, Len=0, and a message 'Testing confirmed server-side close'. The packet bytes pane shows the raw data of the packet.

Wireshark - Follow TCP Stream (tcp.stream eq 0) - Adapter for loopback traffic capture

Testing confirmed server-side close

2 client ppts, 1 server ppts, 2 turns.

Entire conversation (41 bytes) Show data as ASCII Stream 0

Find: Find Next

Filter Out This Stream Print Save as... Back Close Help

Destination Address (ip.dst), 4 bytes Packets: 355 - Displayed: 13 (3.7%)

server.py

```
Received from client: close
Closing connection with client.
```

client.py

```
Closing connection with the server.
```