

TCP Protocol

The image displays two screenshots of the Wireshark network traffic analysis tool, focusing on the TCP protocol details.

Top Screenshot: The packet list shows a series of TCP segments. The selected packet (263) is a SYN-ACK segment from 192.168.1.22 to 95.101.114.51. The packet details pane shows the following information:

- Frame 263: 66 bytes on wire (528 bits), 66 bytes captured (528 bits) on interface \Device\NPF...{114F21D0...}
- Ethernet II, Src: zte_45:71:ec (44:59:43:45:71:ec), Dst: IntelCor_6d:a4:70 (20:1e:88:6d:a4:70)
- Internet Protocol Version 4, Src: 95.101.114.51, Dst: 192.168.1.22
- Transmission Control Protocol, Src Port: 80, Dst Port: 50463, Seq: 0, Ack: 1, Len: 0
- Source Port: 80
- Destination Port: 50463
- [Stream index: 6]
- [Conversation completeness: Complete, WITH_DATA (31)]
- [TCP Segment Len: 0]
- Sequence Number: 0 (relative sequence number)
- Sequence Number (raw): 487337204
- [Next Sequence Number: 1 (relative sequence number)]
- Acknowledgment Number: 1 (relative ack number)
- Acknowledgment number (raw): 3046884686
- 1000 = Header Length: 32 bytes (8)
- Flags: 0x012 (SYN, ACK)
- Window: 64240
- [Calculated window size: 64240]
- Checksum: 0xe849 [unverified]

Bottom Screenshot: The packet list shows a series of TCP segments. The selected packet (263) is a SYN-ACK segment from 192.168.1.22 to 95.101.114.51. The packet details pane shows the following information:

- Frame 1: 93 bytes on wire (744 bits), 93 bytes captured (744 bits) on interface \Device\NPF...{114F21D0...}
- Ethernet II, Src: zte_45:71:ec (44:59:43:45:71:ec), Dst: IntelCor_6d:a4:70 (20:1e:88:6d:a4:70)
- Internet Protocol Version 4, Src: 192.0.78.13, Dst: 192.168.1.22
- Transmission Control Protocol, Src Port: 443, Dst Port: 50460, Seq: 1, Ack: 1, Len: 39
- Source Port: 443
- Destination Port: 50460
- [Stream index: 0]
- [Conversation completeness: Incomplete (28)]
- [TCP Segment Len: 39]
- Sequence Number: 1 (relative sequence number)
- Sequence Number (raw): 1137668924
- [Next Sequence Number: 40 (relative sequence number)]
- Acknowledgment Number: 1 (relative ack number)
- Acknowledgment number (raw): 3701329574
- 0101 = Header Length: 20 bytes (5)
- Flags: 0x018 (PSH, ACK)
- Window: 61
- [Calculated window size: 61]
- [Window size scaling factor: -1 (unknown)]

Wireshark network traffic analysis window showing a packet capture on the 'tcp' interface. The packet list on the left shows various protocols including TCP, TLSv1.2, and HTTP. The selected packet (No. 262) is a TCP segment from 192.168.1.22 to 95.101.114.51, Seq=0, Win=64240, Len=0, MSS=1460, SACK_PERM. The packet details pane on the right shows the TCP header information, including the sequence number (0), acknowledgment number (1), and window size (516). The packet bytes pane on the right shows the raw data of the packet, including the TCP header and the application data.

Wireshark network traffic analysis window showing a packet capture on the 'tcp' interface. The packet list on the left shows various protocols including TCP, TLSv1.3, and HTTP. The selected packet (No. 453) is a TCP segment from 192.168.1.22 to 104.77.185.25, Seq=569, Ack=4516, Win=132096, Len=0. The packet details pane on the right shows the TCP header information, including the sequence number (569), acknowledgment number (4516), and window size (132096). The packet bytes pane on the right shows the raw data of the packet, including the TCP header and the application data. A handwritten note "TCP Port no." is visible in the packet details pane.

Wireshark interface showing a packet capture on the 'lo' interface. The packet list shows a series of DNS queries and responses. The selected packet (No. 3) is a User Datagram Protocol (UDP) packet from 192.168.1.22 to 216.58.205.202, port 56330. The packet details show the User Datagram Protocol (UDP) header and the Data field (29 bytes). The packet bytes pane shows the raw data in hexadecimal and ASCII.

Wireshark interface showing a packet capture on the 'lo' interface. The packet list shows a series of TCP connections. The selected packet (No. 267) is a TCP packet from 192.168.1.22 to 192.168.1.22, port 56330. The packet details show the TCP header and the Data field (29 bytes). The packet bytes pane shows the raw data in hexadecimal and ASCII.

Wireshark interface showing a packet capture of an HTTP transaction. The packet list on the left shows a GET request for /ncsi.txt. The packet details pane on the right shows the structure of the HTTP request, including the status line (200 OK), headers (Content-Type: text/html), and the body (HTML document). The packet bytes pane on the right shows the raw data of the packet.

Sequence Number (tcp.seq), 4 bytes

20°C مشمس

Search

Packets: 289 - Displayed: 93 (32.2%) - Dropped: 0 (0.0%) Profile: Default

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Wireshark interface showing a packet capture of an HTTP transaction. The packet list on the left shows a GET request for /ncsi.txt. The packet details pane on the right shows the structure of the HTTP request, including the status line (200 OK), headers (Content-Type: text/html), and the body (HTML document). The packet bytes pane on the right shows the raw data of the packet.

Flags (12 bits) (tcp.flags), 2 bytes

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Search

Packets: 289 - Displayed: 93 (32.2%) Profile: Default

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Wireshark network traffic analysis interface. The top pane shows a list of captured packets. The middle pane displays the details of the selected packet (No. 443, Time 44.59.43.45, Source 192.168.1.22, Destination 192.168.1.22, Protocol TCP, Length 115, Info Seq=569 Ack=4516 Win=132096 Len=0). The bottom pane shows the raw packet data in hexadecimal and ASCII. The status bar indicates 494 packets displayed (100.0%).

Wireshark network traffic analysis interface. The top pane shows a list of captured packets. The middle pane displays the details of the selected packet (No. 443, Time 44.59.43.45, Source 192.168.1.22, Destination 192.168.1.22, Protocol TCP, Length 115, Info Seq=569 Ack=4516 Win=132096 Len=0). The bottom pane shows the raw packet data in hexadecimal and ASCII. The status bar indicates 494 packets displayed (100.0%).

Wireshark interface showing a packet capture of an HTTP connection. The packet list on the left shows several packets, with packet 269 selected. The packet details pane on the right shows the structure of the selected packet, including the HTTP GET request. The packet bytes pane on the right shows the raw data of the packet.

Sequence Number: 1 (relative sequence number)
Sequence Number (raw): 3844684686
[Next Sequence Number: 1 (relative sequence number)]
Acknowledgment Number: 1 (relative ack number)
Acknowledgment number (raw): 487337205
0101 = Header Length: 20 bytes (5)
Flags: 0x010 (ACK)
000. = Reserved: Not set
...0 = Accurate ECN: Not set
....0 = Congestion Window Reduced: Not set
....0 = ECHO: Not set
....0 = Urgent: Not set
....1 = Acknowledgment: Set
....0 = Push: Not set
....0 = Reset: Not set
....0 = SYN: Not set
....0 = FIN: Not set
[TCP Flags:A....]
Window: 516

0000 44 59 43 45 71 ec 20 1e 88 6d a4 70 00 00 45 00 DYCEq...m p-E-
0010 00 28 92 23 40 00 80 06 00 00 c0 a8 01 16 5f 65 (-#@0.....e
0020 72 33 c5 1f 00 50 b5 7a 33 8e 1d 0c 2c f5 50 r3...Piz 3...P
0030 02 04 93 71 00 00

Wireshark interface showing a packet capture of an HTTP connection. The packet list on the left shows several packets, with packet 269 selected. The packet details pane on the right shows the structure of the selected packet, including the HTTP GET request. The packet bytes pane on the right shows the raw data of the packet.

> Frame 1: 93 bytes on wire (744 bits), 93 bytes captured (744 bits) on interface \\Device\\NPF_{114F21D...
> Ethernet II, Src: zte.45:71:ec (d4:59:43:45:71:ec), Dst: IntelCor_Gd:a4:70 (20:1e:88:6d:a4:70)
> Internet Protocol Version 4, Src: 192.0.78.13, Dst: 192.168.1.22
v Transmission Control Protocol, Src Port: 443, Dst Port: 50460, Seq: 1, Ack: 1, Len: 39
Source Port: 443
Destination Port: 50460
[Stream index: 0]
[Conversation completeness: Incomplete (28)]
[TCP Segment Len: 39]
Sequence Number: 1 (relative sequence number)
Sequence Number (raw): 1137668924
[Next Sequence Number: 40 (relative sequence number)]
Acknowledgment Number: 1 (relative ack number)
Acknowledgment number (raw): 3701329574
0101 = Header Length: 20 bytes (5)
Flags: 0x018 (PSH, ACK)
Window: 61
[Calculated window size: 61]
[Window size scaling factor: -1 (unknown)]

0000 20 1e 88 6d a4 70 44 59 43 45 71 ec 00 00 45 00 -m pDY CEq...E-
0010 00 4f 0c 1d 40 00 30 06 66 c0 c0 00 de 0d c0 a8 0-@0-f-N...
0020 01 16 01 bb c5 1c 43 cf 73 3c 1c 9d ce a0 50 18C: sck...P
0030 00 3d 4c df 00 00 17 03 03 00 22 9b 3d 5c 52 e7 =L....."=VR
0040 71 75 0b 93 ce e3 b8 a4 df ed 92 6f 6b c5 63 df quk.....ok c-
0050 c0 4f 08 30 a3 cc 68 5e d8 75 08 ff 40 -0.0-h^ -u-@

Wireshark interface showing a packet capture on the *WiFi interface. The packet list displays several TCP segments, with packet 47 selected. The packet details pane shows the structure of the TCP segment, including the header and payload. The packet bytes pane displays the raw data of the selected packet.

Packet 47: 20.294492 35.210.188.173 192.168.1.22 TCP 66 [TCP Dup ACK 46#1] 443 → 50211 [ACK] Seq=1 Ack=2 Win=642 Len=0 SLE=1 SRE=2

Details:

- [Stream index: 0]
- [Conversation completeness: Incomplete (28)]
- [TCP Segment Len: 39]
- Sequence Number: 1 (relative sequence number)
- Sequence Number (raw): 1137668924
- [Next Sequence Number: 40 (relative sequence number)]
- Acknowledgment Number: 1 (relative ack number)
- Acknowledgment number (raw): 3701329574
- 0101 ... = Header Length: 20 bytes (5)
- Flags: 0x018 (PSH, ACK)
- Window: 61
- [Calculated window size: 61]
- [Window size scaling factor: -1 (unknown)]
- Checksum: 0x4cdf [unverified]
- [Checksum Status: Unverified]
- Urgent Pointer: 0
- [Timestamps]
- [SEQ/ACK analysis]
- TCP payload (39 bytes)

Packet bytes: 20 1e 88 6d a4 70 44 59 43 45 71 ec 00 00 45 00 ... m pDY CEq ... E

Wireshark interface showing a packet capture on the *WiFi interface. The packet list displays several TCP segments, with packet 264 selected. The packet details pane shows the structure of the TCP segment, including the header and payload. The packet bytes pane displays the raw data of the selected packet.

Packet 264: 40.333714 95.101.114.51 192.168.1.22 TCP 66 50463 → 80 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 WS=256 SACK_PERM

Details:

- > Frame 264: 54 bytes on wire (432 bits), 54 bytes captured (432 bits) on interface DeviceVNF_1114F2
- > Ethernet II, Src: IntelCor_6d:a4:70 (20:1e:88:6d:a4:70), Dst: zte_45:71:ec (44:59:43:45:71:ec)
- > Internet Protocol Version 4, Src: 192.168.1.22, Dst: 95.101.114.51
- > Transmission Control Protocol, Src Port: 50463, Dst Port: 80, Seq: 1, Ack: 1, Len: 0
- Source Port: 50463
- Destination Port: 80
- [Stream index: 6]
- [Conversation completeness: Complete, WITH_DATA (31)]
- [TCP Segment Len: 0]
- Sequence Number: 1 (relative sequence number)
- Sequence Number (raw): 3044684686
- [Next Sequence Number: 1 (relative sequence number)]
- Acknowledgment Number: 1 (relative ack number)
- Acknowledgment number (raw): 487337205
- 0101 ... = Header Length: 20 bytes (5)
- Flags: 0x010 (ACK)
- Window: 516
- [Calculated window size: 132096]
- [Window size scaling factor: 256]

Packet bytes: 44 59 43 45 71 ec 20 1e 88 6d a4 70 00 00 45 00 DYCEq ... m p ... E