

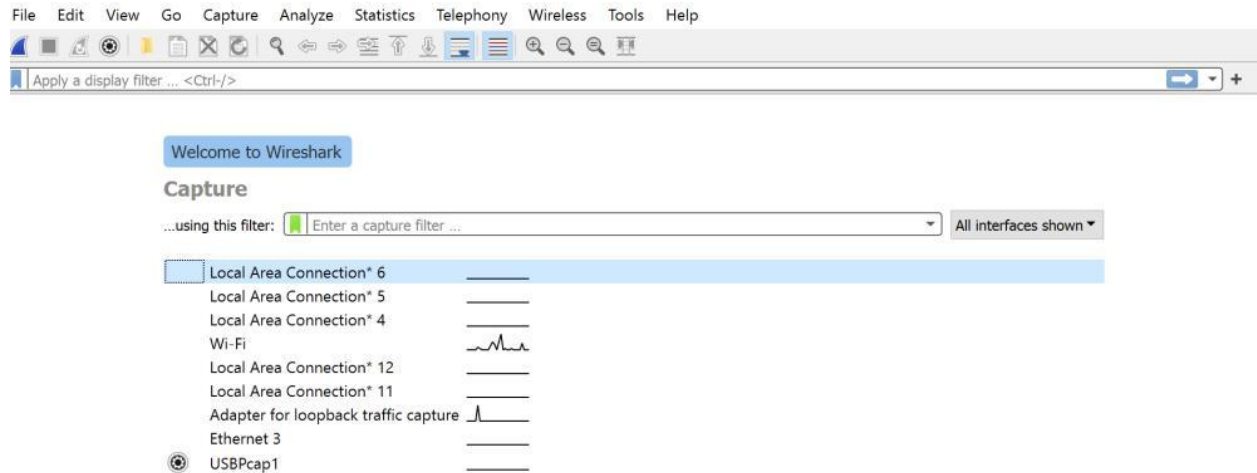
Analyze TCP, UDP and IPV4 Header using Wireshark

TCP Analysis using Wireshark:

TCP or Transmission Control Protocol is one of the most important protocols or standards for enabling communication possible amongst devices present over a particular network. It has algorithms that solve complex errors arising in packet communications, i.e. corrupted packets, invalid packets, duplicates, etc. Since it is used with IP(Internet Protocol), many times it is also referred to as TCP/IP. In order to start a communication, the TCP first establishes a connection using the three-way-handshake. TCP's efficiency over other protocols lies in its error detecting and correction attribute. Not only this, it organizes packets and segments larger data into a number of packets without disrupting the integrity of the data.

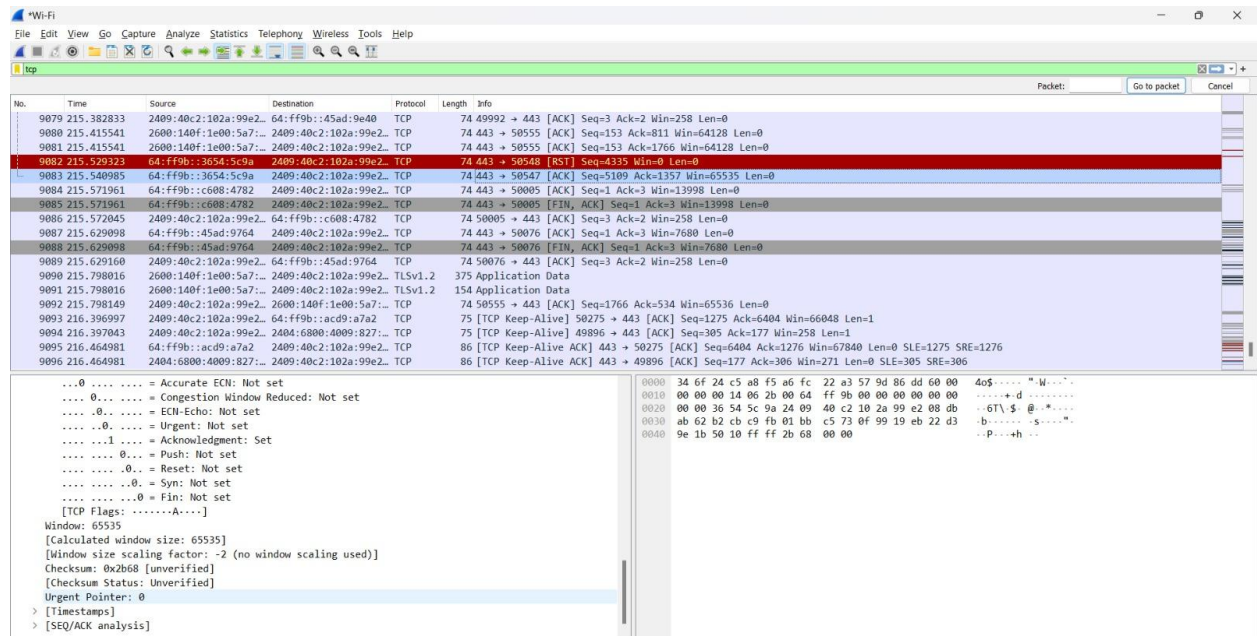
So now we are a bit familiar with TCP, let's look at how we can analyze TCP using Wireshark, which is the most widely used protocol analyzer in the world. In order to analyze TCP, you first need to launch Wireshark and follow the steps given below:

- From the menu bar, select capture -> options -> interfaces.
- In the interfaces, choose a particular Ethernet adapter and note down its IP, and click the start button of the selected adapter.
- Now we shall be capturing packets. Browse to a particular web address to generate traffic to capture packets from the communication for e.g. geeksforgeeks.org and return to Wireshark and stop the capture by selecting stop from the capture menu. You can have a look at it in the image below.

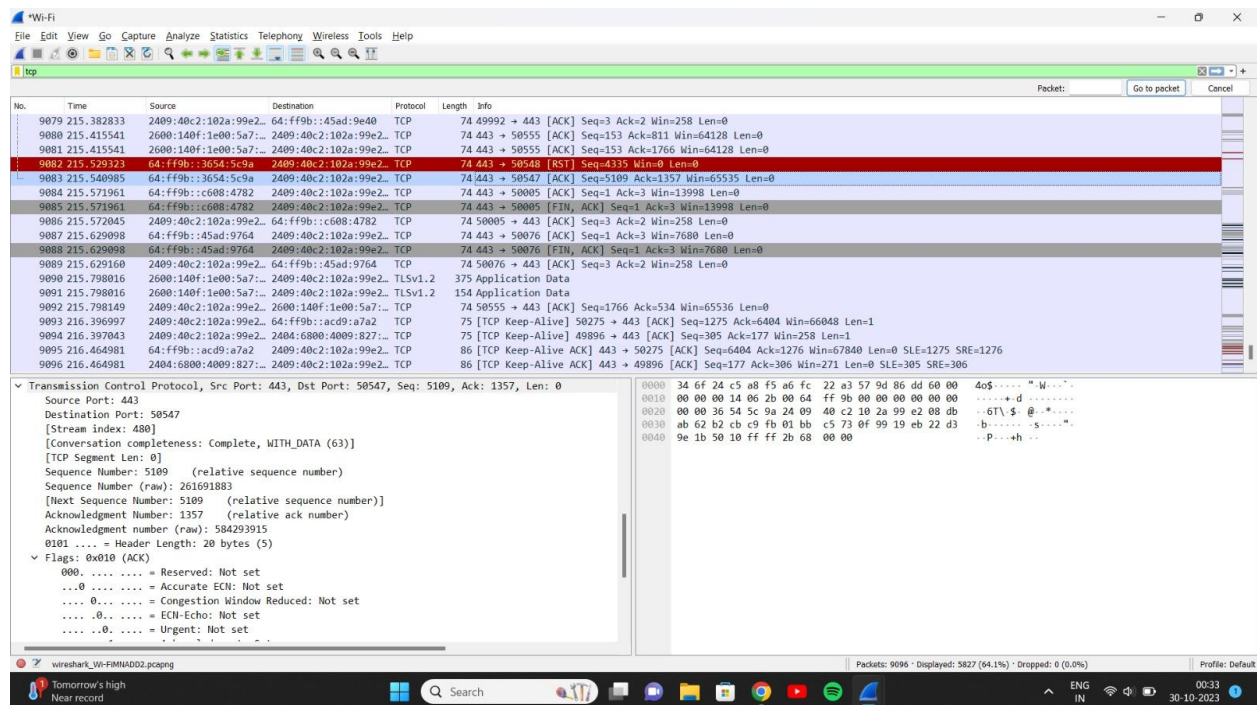


Now we have the captured packets and you will be having the captured packet list on the screen. Since we are concerned here with only TCP packets as we are doing TCP analysis, we shall be filtering out TCP packets from the packet pool. You can apply a filter in any of the following ways:

In the display filter bar on the screen, enter TCP and apply the filter.



From analyzing the menu in the menu bar select display filters or from capture select capture filters and then TCP only and ok.



Here you will have the list of TCP packets. The first three packets of this list are part of the three-way handshake mechanism of TCP to establish a connection. Let's get a basic knowledge of this mechanism which happens in the following 3 steps:

A synchronization packet (SYN) is sent by your local host IP to the server it desires to connect to.

The server reciprocates by sending an acknowledgment packet (ACK) to the local host signaling that it has received the SYN request of the host IP to connect and also sends a synchronization packet (SYN) to the local host to confirm the connection. So this one is basically an SYN+ACK packet.

The host answers this request by sending the ACK on receiving the SYN of the server.

Source port: This is the port of your host network used for communication.

Destination port: This is the port of the destination server.

TCP segment length: It represents the data length in the selected packet.

Sequence number: It is a method used by Wireshark to give particular indexing to each packet for tracking packets with ease. This indexing starts from 0.

Next sequence number: It is the sum of the sequence number and the segment length of the current packet.

Acknowledgment number: It contains the byte length of data received.

Header length: It is the length of the TCP header and can vary from 20 to 60.

We can observe three connection establishment steps in the first three packets of the TCP list where each of the packet types i.e. ACK, SYN, SYN-ACK are listed on their respective sides. Now to examine a packet closely we shall select a packet and in the expert view in the packet detail section just below the packet list we shall be having the TCP parameters as you can see in the below diagram.

The image shows a Wireshark packet capture of a TCP connection. The packet list at the top shows several packets, with packet 9082 selected. The packet details pane shows the Transmission Control Protocol (TCP) parameters for the selected packet. The packet bytes pane shows the raw data of the packet.

Packet List:

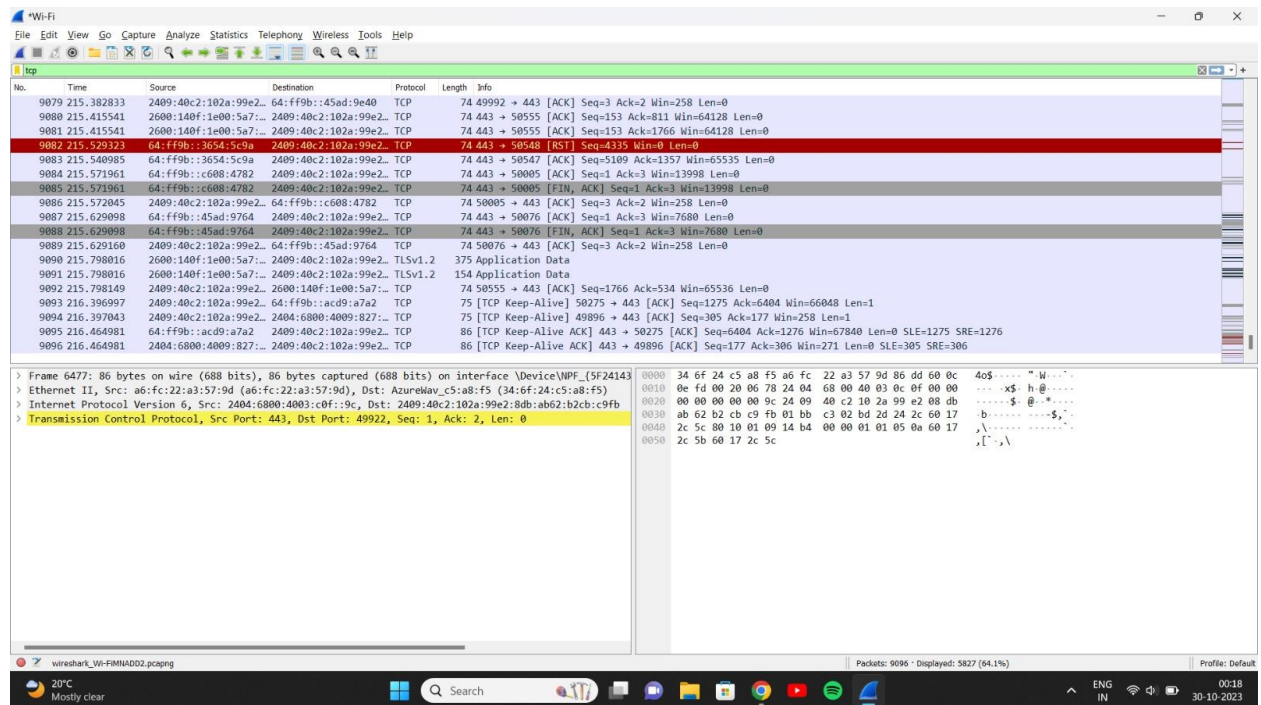
| No. | Time | Source | Destination | Protocol | Length | Info |
|------|------------|---------------------------|-----------------------|----------|--------|--|
| 9079 | 215.382833 | 2409:40c2:102a:99e2::64 | ff9b::45ad:9e40 | TCP | 74 | 49992 → 443 [ACK] Seq=3 Ack=2 Win=258 Len=0 |
| 9080 | 215.415541 | 2600:140f:1e00:5a7::2409 | 40c2:102a:99e2:: | TCP | 74 | 443 → 50555 [ACK] Seq=153 Ack=811 Win=64128 Len=0 |
| 9081 | 215.415541 | 2600:140f:1e00:5a7::2409 | 40c2:102a:99e2:: | TCP | 74 | 443 → 50555 [ACK] Seq=153 Ack=1766 Win=64128 Len=0 |
| 9082 | 215.529323 | 64:ff9b::3654:5c9a | 2409:40c2:102a:99e2:: | TCP | 74 | 443 → 50547 [RST] Seq=4335 Win=0 Len=0 |
| 9083 | 215.540985 | 64:ff9b::3654:5c9a | 2409:40c2:102a:99e2:: | TCP | 74 | 443 → 50547 [ACK] Seq=5109 Ack=1357 Win=65535 Len=0 |
| 9084 | 215.571961 | 64:ff9b::c608:4782 | 2409:40c2:102a:99e2:: | TCP | 74 | 443 → 50005 [ACK] Seq=1 Ack=3 Win=13998 Len=0 |
| 9085 | 215.571961 | 64:ff9b::c608:4782 | 2409:40c2:102a:99e2:: | TCP | 74 | 443 → 50005 [FIN, ACK] Seq=1 Ack=3 Win=13998 Len=0 |
| 9086 | 215.572045 | 2409:40c2:102a:99e2::64 | ff9b::c608:4782 | TCP | 74 | 50005 → 443 [ACK] Seq=3 Ack=2 Win=258 Len=0 |
| 9087 | 215.629098 | 64:ff9b::45ad:9764 | 2409:40c2:102a:99e2:: | TCP | 74 | 443 → 50076 [ACK] Seq=1 Ack=3 Win=7680 Len=0 |
| 9088 | 215.629098 | 64:ff9b::45ad:9764 | 2409:40c2:102a:99e2:: | TCP | 74 | 443 → 50076 [FIN, ACK] Seq=1 Ack=3 Win=7680 Len=0 |
| 9089 | 215.629160 | 2409:40c2:102a:99e2::64 | ff9b::45ad:9764 | TCP | 74 | 50076 → 443 [ACK] Seq=3 Ack=2 Win=258 Len=0 |
| 9090 | 215.798016 | 2600:140f:1e00:5a7::2409 | 40c2:102a:99e2:: | TLSv1.2 | 375 | Application Data |
| 9091 | 215.798016 | 2600:140f:1e00:5a7::2409 | 40c2:102a:99e2:: | TLSv1.2 | 154 | Application Data |
| 9092 | 215.798149 | 2409:40c2:102a:99e2::64 | ff9b::1e00:5a7:: | TCP | 74 | 50555 → 443 [ACK] Seq=1766 Ack=534 Win=65536 Len=0 |
| 9093 | 216.396997 | 2409:40c2:102a:99e2::64 | ff9b::acd9:a7a2 | TCP | 75 | [TCP Keep-Alive] 50275 → 443 [ACK] Seq=1275 Ack=6404 Win=66048 Len=1 |
| 9094 | 216.397043 | 2409:40c2:102a:99e2::2404 | 6800:4009:827:: | TCP | 75 | [TCP Keep-Alive] 49896 → 443 [ACK] Seq=305 Ack=177 Win=258 Len=1 |
| 9095 | 216.464981 | 64:ff9b::acd9:a7a2 | 2409:40c2:102a:99e2:: | TCP | 86 | [TCP Keep-Alive ACK] 443 → 50275 [ACK] Seq=6404 Ack=1276 Win=67840 Len=0 SLE=1275 SRE=1276 |
| 9096 | 216.464981 | 2404:6800:4009:827:: | 2409:40c2:102a:99e2:: | TCP | 86 | [TCP Keep-Alive ACK] 443 → 49896 [ACK] Seq=177 Ack=306 Win=271 Len=0 SLE=305 SRE=306 |

Packet Details (Selected Packet 9082):

- Transmission Control Protocol, Src Port: 443, Dst Port: 50547, Seq: 5109, Ack: 1357, Len: 0
- Source Port: 443
- Destination Port: 50547
- [Stream index: 400]
- [Conversation completeness: Complete, WITH_DATA (63)]
- [TCP Segment Len: 0]
- Sequence Number: 5109 (relative sequence number)
- Sequence Number (raw): 261691883
- [Next Sequence Number: 5109 (relative sequence number)]
- Acknowledgment Number: 1357 (relative ack number)
- Acknowledgment number (raw): 584293915
- 0101 = Header Length: 20 bytes (5)
- Flags: 0x010 (ACK)
- 0000 = Reserved: Not set
- ...0 = Accurate ECN: Not set
- ...0 = Congestion Window Reduced: Not set
- ...0 = ECN-Echo: Not set
- ...0 = Urgent: Not set

Packet Bytes:

```
0000 34 6f 24 c5 a8 f5 a6 fc 22 a3 57 9d 86 dd 60 00 40$....."W....
0010 00 00 00 14 06 2b 00 64 ff 9b 00 00 00 00 00 00 .....+d.....
0020 00 00 36 54 5c 9a 24 09 40 c2 10 2a 99 e2 00 d0 ..6T$.@*.....
0030 ab 62 b2 cb c9 fb 01 bb c5 73 0f 99 19 eb 22 d3 ..b.....s.....
0040 9e 1b 50 10 ff ff 2b 68 00 00 ..P...h...
```

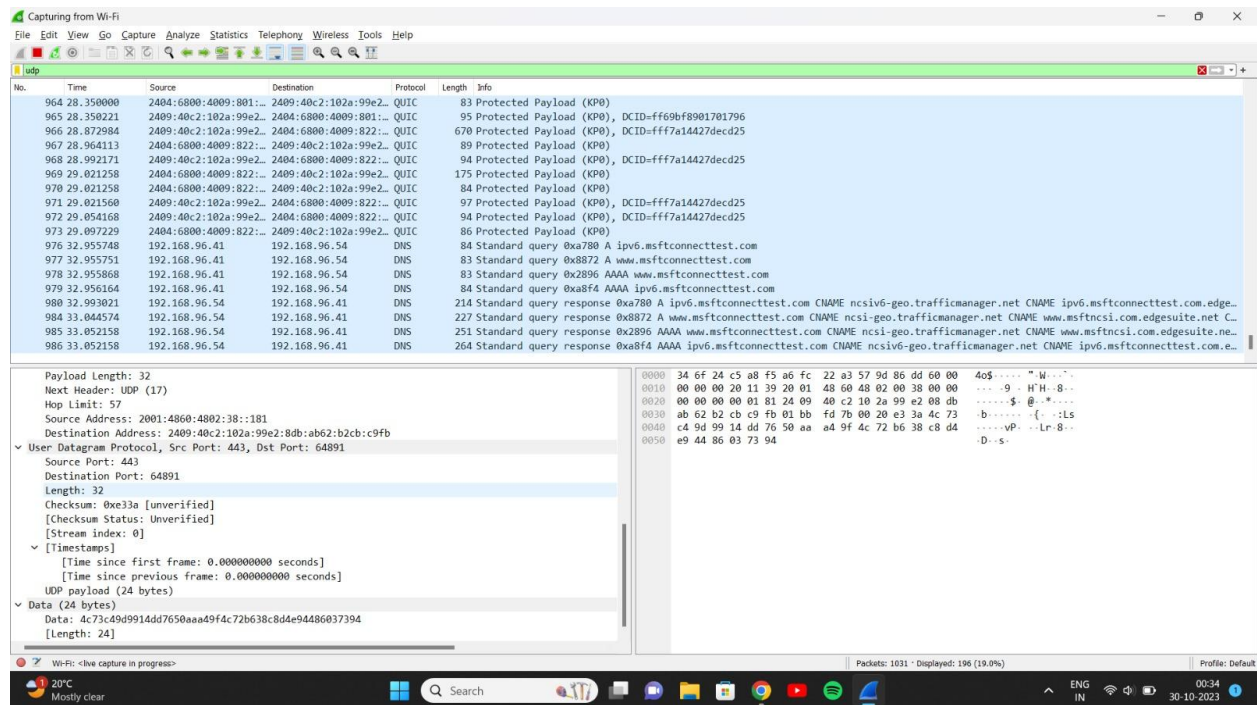


UDP Analysis using Wireshark:

The User Datagram Protocol, or UDP, is a communication protocol used across the Internet for especially time-sensitive transmissions such as [video playback](#) or [DNS](#) lookups. It speeds up communications by not formally establishing a connection before data is transferred. This allows data to be transferred very quickly, but it can also cause [packets](#) to become lost in transit – and create opportunities for exploitation in the form of [DDoS attacks](#).

Like all [networking protocols](#), UDP is a standardized method for transferring data between two computers in a network. Compared to other protocols, UDP accomplishes this process in a simple fashion: it sends packets (units of data transmission) directly to a target computer, without establishing a connection first, indicating the order of said packets, or checking whether they arrived as intended. (UDP packets are referred to as ‘datagrams’.)

We have to follow the same steps for udp analysis .The only difference is we are filtering the packets based on udp protocol.



UDP Header –

UDP header is an 8-bytes fixed and simple header, while for TCP it may vary from 20 bytes to 60 bytes. The first 8 Bytes contains all necessary header information and the remaining part consist of data. UDP port number fields are each 16 bits long, therefore the range for port numbers is defined from 0 to 65535; port number 0 is reserved. Port numbers help to distinguish different user requests or processes.

Source Port: Source Port is a 2 Byte long field used to identify the port number of the source.

Destination Port: It is a 2 Byte long field, used to identify the port of the destined packet.

Length: Length is the length of UDP including the header and the data. It is a 16-bits field.

Checksum: Checksum is 2 Bytes long field. It is the 16-bit one's complement of the one's complement sum of the UDP header, the pseudo-header of information

from the IP header, and the data, padded with zero octets at the end (if necessary) to make a multiple of two octets.

The screenshot shows a Wireshark packet capture window titled "Capturing from Wi-Fi". The main pane displays a list of 13 packets. The first packet is a UDP packet from 2001:4860:4802:38::1 to 2409:40c2:102a:99e2::1, length 86, with a lens of 24. The subsequent packets are DNS queries and responses for various domains including www.msftconnecttest.com, ncsiv6-geo.trafficmanager.net, and ncsi-geo.trafficmanager.net.

Frame 1: 86 bytes on wire (688 bits), 86 bytes captured (688 bits) on interface \Device\NPF_{5F241432-C1FD-4B33-943E-D01F3403407B}

Section number: 1

Interface id: 0 (\Device\NPF_{5F241432-C1FD-4B33-943E-D01F3403407B})

Encapsulation type: Ethernet II

Arrival Time: Oct 30, 2023 00:33:54.758110000 India Standard Time

[Time shift for this packet: 0.000000000 seconds]

Epoch Time: 1698066234.758110000 seconds

[Time delta from previous captured frame: 0.000000000 seconds]

[Time delta from previous displayed frame: 0.000000000 seconds]

[Time since reference or first frame: 0.000000000 seconds]

Frame Number: 1

Frame Length: 86 bytes (688 bits)

Capture Length: 86 bytes (688 bits)

[Frame is marked: False]

[Frame is ignored: False]

[Protocols in frame: eth:ethertype:ipv6:udp:data]

[Coloring Rule Name: UDP]

[Coloring Rule String: udp]

Ethernet II, Src: a6:fc:22:a3:57:9d (a6:fc:22:a3:57:9d), Dst: AzureWav_c5:a8:f5 (34:6f:24:c5:a8:f5)

The screenshot shows a Wireshark packet capture window titled "Capturing from Wi-Fi". The main pane displays a list of 13 packets. The first packet is a UDP packet from 2001:4860:4802:38::1 to 2409:40c2:102a:99e2::1, length 86, with a lens of 24. The subsequent packets are DNS queries and responses for various domains including www.msftconnecttest.com, ncsiv6-geo.trafficmanager.net, and ncsi-geo.trafficmanager.net.

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Section number: 1

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[Time shift for this packet: 0.000000000 seconds]

Epoch Time: 1698066234.758110000 seconds

[Time delta from previous captured frame: 0.000000000 seconds]

[Time delta from previous displayed frame: 0.000000000 seconds]

[Time since reference or first frame: 0.000000000 seconds]

Frame Number: 1

Frame Length: 86 bytes (688 bits)

Capture Length: 86 bytes (688 bits)

[Frame is marked: False]

[Frame is ignored: False]

[Protocols in frame: eth:ethertype:ipv6:udp:data]

[Coloring Rule Name: UDP]

[Coloring Rule String: udp]

Ethernet II, Src: a6:fc:22:a3:57:9d (a6:fc:22:a3:57:9d), Dst: AzureWav_c5:a8:f5 (34:6f:24:c5:a8:f5)

Payload Length: 32

Next Header: UDP (17)

Hop Limit: 57

Source Address: 2001:4860:4802:38::181

Destination Address: 2409:40c2:102a:99e2::8b:a62:b2cb:c9fb

User Datagram Protocol, Src Port: 443, Dst Port: 64891

Source Port: 443

Destination Port: 64891

Length: 32

Checksum: 0xe33a [unverified]

[Checksum Status: Unverified]

[Stream index: 0]

[Timestamps]

[Time since first frame: 0.000000000 seconds]

[Time since previous frame: 0.000000000 seconds]

UDP payload (24 bytes)

Data (24 bytes)

Data: 4c73c49d9914dd7650aaa49f4c72b638c8d4e9486037394

[Length: 24]

IPv4 Analysis using Wireshark:

IP stands for Internet Protocol and v4 stands for Version Four (IPv4). IPv4 was the primary version brought into action for production within the ARPANET in 1983. IP version four addresses are 32-bit integers which will be expressed in decimal notation.

Example- 192.0.2.126 could be an IPv4 address.

Parts of IPv4

Network part:

The network part indicates the distinctive variety that's appointed to the network. The network part conjointly identifies the category of the network that's assigned.

Host Part:

The host part uniquely identifies the machine on your network. This part of the IPv4 address is assigned to every host.

For each host on the network, the network part is the same, however, the host half must vary.

Subnet number:

This is the nonobligatory part of IPv4. Local networks that have massive numbers of hosts are divided into subnets and subnet numbers are appointed to that.

Characteristics of IPv4

- IPv4 could be a 32-Bit IP Address.
- IPv4 could be a numeric address, and its bits are separated by a dot.
- The number of header fields is twelve and the length of the header field is twenty.
- It has Unicast, broadcast, and multicast style of addresses.
- IPv4 supports VLSM (Virtual Length Subnet Mask).
- IPv4 uses the Post Address Resolution Protocol to map to the MAC address.
- RIP may be a routing protocol supported by the routed daemon.
- Networks ought to be designed either manually or with DHCP.
- Packet fragmentation permits from routers and causing host.

Wi-Fi

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ip

| No. | Time | Source | Destination | Protocol | Length | Info |
|------|-----------|---------------|---------------|----------|--------|---|
| 1753 | 87.763385 | 192.168.96.54 | 192.168.96.41 | DNS | 207 | Standard query response 0xa43 AAAA b.6sc.co CNAME b2.6sc.co.edgekey.net CNAME e212585.b.akamaiedge.net AAAA 64:ff9b:17c4:e7b AA... |
| 1756 | 87.768188 | 192.168.96.54 | 192.168.96.41 | TCP | 54 | 53 → 52615 [FIN, ACK] Seq=155 Ack=30 Win=65536 Len=0 |
| 1759 | 87.777232 | 192.168.96.54 | 192.168.96.41 | DNS | 183 | Standard query response 0xad3e A b.6sc.co CNAME b2.6sc.co.edgekey.net CNAME e212585.b.akamaiedge.net A 23.196.14.123 A 23.196.14... |
| 1762 | 87.780716 | 192.168.96.54 | 192.168.96.41 | TCP | 54 | 53 → 52616 [FIN, ACK] Seq=155 Ack=30 Win=65536 Len=0 |
| 1765 | 87.806062 | 192.168.96.54 | 192.168.96.41 | DNS | 212 | Standard query response 0xd4ad HTTPS b.6sc.co CNAME b2.6sc.co.edgekey.net CNAME e212585.b.akamaiedge.net SOA n0b.akamaiedge.net |
| 1768 | 87.809408 | 192.168.96.54 | 192.168.96.41 | TCP | 54 | 53 → 52618 [ACK] Seq=1 Ack=30 Win=65536 Len=0 |
| 1769 | 87.812079 | 192.168.96.54 | 192.168.96.41 | TCP | 54 | 53 → 52617 [FIN, ACK] Seq=160 Ack=30 Win=65536 Len=0 |
| 1771 | 87.821807 | 192.168.96.54 | 192.168.96.41 | TCP | 54 | 53 → 52619 [ACK] Seq=1 Ack=30 Win=65536 Len=0 |
| 1772 | 87.866199 | 192.168.96.54 | 192.168.96.41 | TCP | 55 | 53 → 52620 [PSH, ACK] Seq=1 Ack=30 Win=65536 Len=1 [TCP segment of a reassembled PDU] |
| 1773 | 87.866199 | 192.168.96.54 | 192.168.96.41 | TCP | 55 | 53 → 52619 [PSH, ACK] Seq=1 Ack=30 Win=65536 Len=1 [TCP segment of a reassembled PDU] |
| 1774 | 87.866199 | 192.168.96.54 | 192.168.96.41 | DNS | 183 | Standard query response 0x5f01 A b.6sc.co CNAME b2.6sc.co.edgekey.net CNAME e212585.b.akamaiedge.net A 23.196.14.123 A 23.196.14... |
| 1775 | 87.866199 | 192.168.96.54 | 192.168.96.41 | TCP | 55 | 53 → 52618 [PSH, ACK] Seq=1 Ack=30 Win=65536 Len=1 [TCP segment of a reassembled PDU] |
| 1776 | 87.866199 | 192.168.96.54 | 192.168.96.41 | DNS | 212 | Standard query response 0x00c8 HTTPS b.6sc.co CNAME b2.6sc.co.edgekey.net CNAME e212585.b.akamaiedge.net SOA n0b.akamaiedge.net |
| 1777 | 87.866199 | 192.168.96.54 | 192.168.96.41 | DNS | 207 | Standard query response 0x4735 AAAA b.6sc.co CNAME b2.6sc.co.edgekey.net CNAME e212585.b.akamaiedge.net AAAA 64:ff9b:17c4:e7b AA... |
| 1778 | 87.866199 | 192.168.96.54 | 192.168.96.41 | TCP | 207 | [TCP Retransmission] 53 → 52618 [FIN, PSH, ACK] Seq=2 Ack=30 Win=65536 Len=153 |
| 1779 | 87.866199 | 192.168.96.54 | 192.168.96.41 | TCP | 212 | [TCP Retransmission] 53 → 52620 [FIN, PSH, ACK] Seq=2 Ack=30 Win=65536 Len=158 |
| 1780 | 87.866199 | 192.168.96.54 | 192.168.96.41 | TCP | 183 | [TCP Retransmission] 53 → 52619 [FIN, PSH, ACK] Seq=2 Ack=30 Win=65536 Len=129 |
| 2 | 2.951364 | 192.168.96.41 | 192.168.96.54 | DNS | 83 | Standard query 0x6dc8 A www.msftconnecttest.com |
| 3 | 2.951364 | 192.168.96.41 | 192.168.96.54 | DNS | 84 | Standard queryv 0x4941 A ipv6.msftconnecttest.com |

Frame 1774: 183 bytes on wire (1464 bits), 183 bytes captured (1464 bits) on interface \Device\NPF... Section number: 1

Interface id: 0 (\Device\NPF_{5F241432-C1FD-4B33-943E-DD1F3403407B})

Encapsulation type: Ethernet (1)

Arrival Time: Oct 30, 2023 00:35:22.624309000 India Standard Time

Time shift for this packet: 0.000000000 seconds

Epoch Time: 1698606322.624309000 seconds

[Time delta from previous captured frame: 0.000000000 seconds]

[Time delta from previous displayed frame: 0.000000000 seconds]

[Time since reference or first frame: 87.866199000 seconds]

Frame Number: 1774

Frame Length: 183 bytes (1464 bits)

Capture Length: 183 bytes (1464 bits)

[Frame is marked: False]

[Frame is ignored: False]

[Protocols in frame: eth:ethertype:ip:tcp:dns]

[Coloring Rule Name: TCP SYN/FIN]

[Coloring Rule String: tcp.flags & 0x02 || tcp.flags.fin == 1]

Ethernet II, Src: a6:fc:22:a3:57:9d (a6:fc:22:a3:57:9d), Dst: AzureKav_c5:a8:f5 (34:6f:24:c5:a8:f5)

Internet Protocol Version 4: Protocol

Packets: 1832 · Displayed: 819 (44.7%)

Profile: Default

Wi-Fi

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ip

| No. | Time | Source | Destination | Protocol | Length | Info |
|------|-----------|---------------|---------------|----------|--------|---|
| 1753 | 87.763385 | 192.168.96.54 | 192.168.96.41 | DNS | 207 | Standard query response 0xa43 AAAA b.6sc.co CNAME b2.6sc.co.edgekey.net CNAME e212585.b.akamaiedge.net AAAA 64:ff9b:17c4:e7b AA... |
| 1756 | 87.768188 | 192.168.96.54 | 192.168.96.41 | TCP | 54 | 53 → 52615 [FIN, ACK] Seq=155 Ack=30 Win=65536 Len=0 |
| 1759 | 87.777232 | 192.168.96.54 | 192.168.96.41 | DNS | 183 | Standard query response 0xad3e A b.6sc.co CNAME b2.6sc.co.edgekey.net CNAME e212585.b.akamaiedge.net A 23.196.14.123 A 23.196.14... |
| 1762 | 87.780716 | 192.168.96.54 | 192.168.96.41 | TCP | 54 | 53 → 52616 [FIN, ACK] Seq=155 Ack=30 Win=65536 Len=0 |
| 1765 | 87.806062 | 192.168.96.54 | 192.168.96.41 | DNS | 212 | Standard query response 0xd4ad HTTPS b.6sc.co CNAME b2.6sc.co.edgekey.net CNAME e212585.b.akamaiedge.net SOA n0b.akamaiedge.net |
| 1768 | 87.809408 | 192.168.96.54 | 192.168.96.41 | TCP | 54 | 53 → 52618 [ACK] Seq=1 Ack=30 Win=65536 Len=0 |
| 1769 | 87.812079 | 192.168.96.54 | 192.168.96.41 | TCP | 54 | 53 → 52617 [FIN, ACK] Seq=160 Ack=30 Win=65536 Len=0 |
| 1771 | 87.821807 | 192.168.96.54 | 192.168.96.41 | TCP | 54 | 53 → 52619 [ACK] Seq=1 Ack=30 Win=65536 Len=0 |
| 1772 | 87.866199 | 192.168.96.54 | 192.168.96.41 | TCP | 55 | 53 → 52620 [PSH, ACK] Seq=1 Ack=30 Win=65536 Len=1 [TCP segment of a reassembled PDU] |
| 1773 | 87.866199 | 192.168.96.54 | 192.168.96.41 | TCP | 55 | 53 → 52619 [PSH, ACK] Seq=1 Ack=30 Win=65536 Len=1 [TCP segment of a reassembled PDU] |
| 1774 | 87.866199 | 192.168.96.54 | 192.168.96.41 | DNS | 183 | Standard query response 0x5f01 A b.6sc.co CNAME b2.6sc.co.edgekey.net CNAME e212585.b.akamaiedge.net A 23.196.14.123 A 23.196.14... |
| 1775 | 87.866199 | 192.168.96.54 | 192.168.96.41 | TCP | 55 | 53 → 52618 [PSH, ACK] Seq=1 Ack=30 Win=65536 Len=1 [TCP segment of a reassembled PDU] |
| 1776 | 87.866199 | 192.168.96.54 | 192.168.96.41 | DNS | 212 | Standard query response 0x00c8 HTTPS b.6sc.co CNAME b2.6sc.co.edgekey.net CNAME e212585.b.akamaiedge.net SOA n0b.akamaiedge.net |
| 1777 | 87.866199 | 192.168.96.54 | 192.168.96.41 | DNS | 207 | Standard query response 0x4735 AAAA b.6sc.co CNAME b2.6sc.co.edgekey.net CNAME e212585.b.akamaiedge.net AAAA 64:ff9b:17c4:e7b AA... |
| 1778 | 87.866199 | 192.168.96.54 | 192.168.96.41 | TCP | 207 | [TCP Retransmission] 53 → 52618 [FIN, PSH, ACK] Seq=2 Ack=30 Win=65536 Len=153 |
| 1779 | 87.866199 | 192.168.96.54 | 192.168.96.41 | TCP | 212 | [TCP Retransmission] 53 → 52620 [FIN, PSH, ACK] Seq=2 Ack=30 Win=65536 Len=158 |
| 1780 | 87.866199 | 192.168.96.54 | 192.168.96.41 | TCP | 183 | [TCP Retransmission] 53 → 52619 [FIN, PSH, ACK] Seq=2 Ack=30 Win=65536 Len=129 |
| 2 | 2.951364 | 192.168.96.41 | 192.168.96.54 | DNS | 83 | Standard query 0x6dc8 A www.msftconnecttest.com |
| 3 | 2.951364 | 192.168.96.41 | 192.168.96.54 | DNS | 84 | Standard queryv 0x4941 A ipv6.msftconnecttest.com |

Source: a6:fc:22:a3:57:9d (a6:fc:22:a3:57:9d)

Type: IPv4 (0x0000)

Internet Protocol Version 4, Src: 192.168.96.54, Dst: 192.168.96.41

0100 = Version: 4

.... 0101 = Header Length: 20 bytes (5)

Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)

Total Length: 169

Identification: 0xa9b4 (43444)

010. = Flags: 0x2, Don't fragment

...0 0000 0000 0000 = Fragment Offset: 0

Time to Live: 64

Protocol: TCP (6)

Header checksum: 0xdea [validation disabled]

[Header checksum status: Unverified]

Source Address: 192.168.96.54

Destination Address: 192.168.96.41

Transmission Control Protocol, Src Port: 53, Dst Port: 52619, Seq: 2, Ack: 30, Len: 129

[2 Reassembled TCP Segments (130 bytes): #1773(1), #1774(129)]

Domain Name System (response)

Frame (183 bytes) Reassembled TCP (130 bytes)

Packets: 1863 · Displayed: 819 (44.0%)

Profile: Default

Wi-Fi

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| No. | Time | Source | Destination | Protocol | Length | Info |
|------|-----------|---------------|---------------|----------|--------|--|
| 1753 | 87.763385 | 192.168.96.54 | 192.168.96.41 | DNS | 207 | Standard query response 0xaa43 AAAA b.6sc.co CNAME b2.6sc.co.edgekey.net CNAME e212585.b.akamaiedge.net AAAA 64:ff9b::17c4:e7b AA... |
| 1756 | 87.768108 | 192.168.96.54 | 192.168.96.41 | TCP | 54 | 53 → 52615 [FIN, ACK] Seq=155 Ack=30 Win=65536 Len=0 |
| 1759 | 87.777232 | 192.168.96.54 | 192.168.96.41 | DNS | 183 | Standard query response 0xad3e A b.6sc.co CNAME b2.6sc.co.edgekey.net CNAME e212585.b.akamaiedge.net A 23.196.14.123 A 23.196.14... |
| 1762 | 87.780716 | 192.168.96.54 | 192.168.96.41 | TCP | 54 | 53 → 52616 [FIN, ACK] Seq=131 Ack=30 Win=65536 Len=0 |
| 1765 | 87.805062 | 192.168.96.54 | 192.168.96.41 | DNS | 212 | Standard query response 0xd4ad HTTPS b.6sc.co CNAME b2.6sc.co.edgekey.net CNAME e212585.b.akamaiedge.net SOA n0b.akamaiedge.net |
| 1768 | 87.809408 | 192.168.96.54 | 192.168.96.41 | TCP | 54 | 53 → 52618 [ACK] Seq=1 Ack=30 Win=65536 Len=0 |
| 1769 | 87.812079 | 192.168.96.54 | 192.168.96.41 | TCP | 54 | 53 → 52617 [FIN, ACK] Seq=160 Ack=30 Win=65536 Len=0 |
| 1771 | 87.821807 | 192.168.96.54 | 192.168.96.41 | TCP | 54 | 53 → 52619 [ACK] Seq=1 Ack=30 Win=65536 Len=0 |
| 1772 | 87.866199 | 192.168.96.54 | 192.168.96.41 | TCP | 55 | 53 → 52620 [PSH, ACK] Seq=1 Ack=30 Win=65536 Len=1 [TCP segment of a reassembled PDU] |
| 1773 | 87.866199 | 192.168.96.54 | 192.168.96.41 | TCP | 55 | 53 → 52619 [PSH, ACK] Seq=1 Ack=30 Win=65536 Len=1 [TCP segment of a reassembled PDU] |
| 1774 | 87.866199 | 192.168.96.54 | 192.168.96.41 | DNS | 183 | Standard query response 0x5f01 A b.6sc.co CNAME b2.6sc.co.edgekey.net CNAME e212585.b.akamaiedge.net A 23.196.14.123 A 23.196.14... |
| 1775 | 87.866199 | 192.168.96.54 | 192.168.96.41 | TCP | 55 | 53 → 52618 [PSH, ACK] Seq=1 Ack=30 Win=65536 Len=1 [TCP segment of a reassembled PDU] |
| 1776 | 87.866199 | 192.168.96.54 | 192.168.96.41 | DNS | 212 | Standard query response 0xb0c0 HTTPS b.6sc.co CNAME b2.6sc.co.edgekey.net CNAME e212585.b.akamaiedge.net SOA n0b.akamaiedge.net |
| 1777 | 87.866199 | 192.168.96.54 | 192.168.96.41 | DNS | 207 | Standard query response 0x4735 AAAA b.6sc.co CNAME b2.6sc.co.edgekey.net CNAME e212585.b.akamaiedge.net AAAA 64:ff9b::17c4:e7b AA... |
| 1778 | 87.866199 | 192.168.96.54 | 192.168.96.41 | TCP | 207 | [TCP Retransmission] 53 → 52618 [FIN, PSH, ACK] Seq=2 Ack=30 Win=65536 Len=153 |
| 1779 | 87.866199 | 192.168.96.54 | 192.168.96.41 | TCP | 212 | [TCP Retransmission] 53 → 52620 [FIN, PSH, ACK] Seq=2 Ack=30 Win=65536 Len=158 |
| 1780 | 87.866199 | 192.168.96.54 | 192.168.96.41 | TCP | 183 | [TCP Retransmission] 53 → 52619 [FIN, PSH, ACK] Seq=2 Ack=30 Win=65536 Len=129 |
| 2 | 2.951364 | 192.168.96.41 | 192.168.96.54 | DNS | 83 | Standard query 0x6dcb A www.msftconnecttest.com |
| 3 | 2.951364 | 192.168.96.41 | 192.168.96.54 | DNS | 84 | Standard query 0x4941 A ipv6.msftconnecttest.com |

Internet Protocol Version 4, Src: 192.168.96.54, Dst: 192.168.96.41

0100 = Version: 4

.... 0101 = Header Length: 20 bytes (5)

✓ Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)

0000 00.. = Differentiated Services Codepoint: Default (0)

.... ..00 = Explicit Congestion Notification: Not ECN-Capable Transport (0)

Total Length: 169

Identification: 0xa9b4 (43444)

✓ 010. = Flags: 0x2, Don't fragment

0.... = Reserved bit: Not set

..1. = Don't fragment: Set

..0. = More fragments: Not set

...0 0000 0000 0000 = Fragment Offset: 0

Time to Live: 64

Protocol: TCP (6)

Header Checksum: 0x4eea [validation disabled]

[Header checksum status: Unverified]

Source Address: 192.168.96.54

Destination Address: 192.168.96.41

0000 34 6f 24 c5 a8 f5 a6 fc 22 a3 57 9d 08 00 45 40 40 00 a9 b4 40 00 40 06 de ea c0 a8 60 36 c0 a8 60 29 00 35 cd 8b 87 bb 01 a2 51 fa 40 5b 50 19 00 40 c1 de 00 00 80 5f 01 81 80 00 01 00 04 00 00 00 01 62 03 36 73 63 02 63 6f 00 00 01 00 01 c0 0c 00 05 00 01 00 00 64 00 17 02 62 32 03 36 73 63 02 63 6f 07 65 64 67 65 6b 65 79 83 6e 65 74 00 c0 26 00 05 00 01 00 00 4c 87 00 17 07 65 32 31 32 35 38 35 01 62 0a 61 6b 61 6d 61 69 65 64 67 65 c0 38 c0 49 00 01 00 01 00 00 00 10 00 04 17 c4 0e 7b c0 49 00 01 00 01 00 00 00 10 00 04 17 c4 0e 2b

40\$....."W...E...@...N...6...5...Q@P...b6s c co...d...b2...6sc co edgekey...net &...L...e212585 b akamaiedge: I...I...+

Frame (183 bytes) Reassembled TCP (130 bytes) Packets: 1892 · Displayed: 819 (43.3%) Profile: Default

Explicit Congestion Notification (p.dfwid.ecn), 1 byte

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ENG IN 00:35 30-10-2023