Computer Networks - UE23CS252B

4th Semester, Academic Year 2024-25

Lab 3

Exploring UDP with DNS and Sockets using Wireshark

Experiment 3.2: Exploring UDP with Sockets – Wireshark

Date: 10-03-2025

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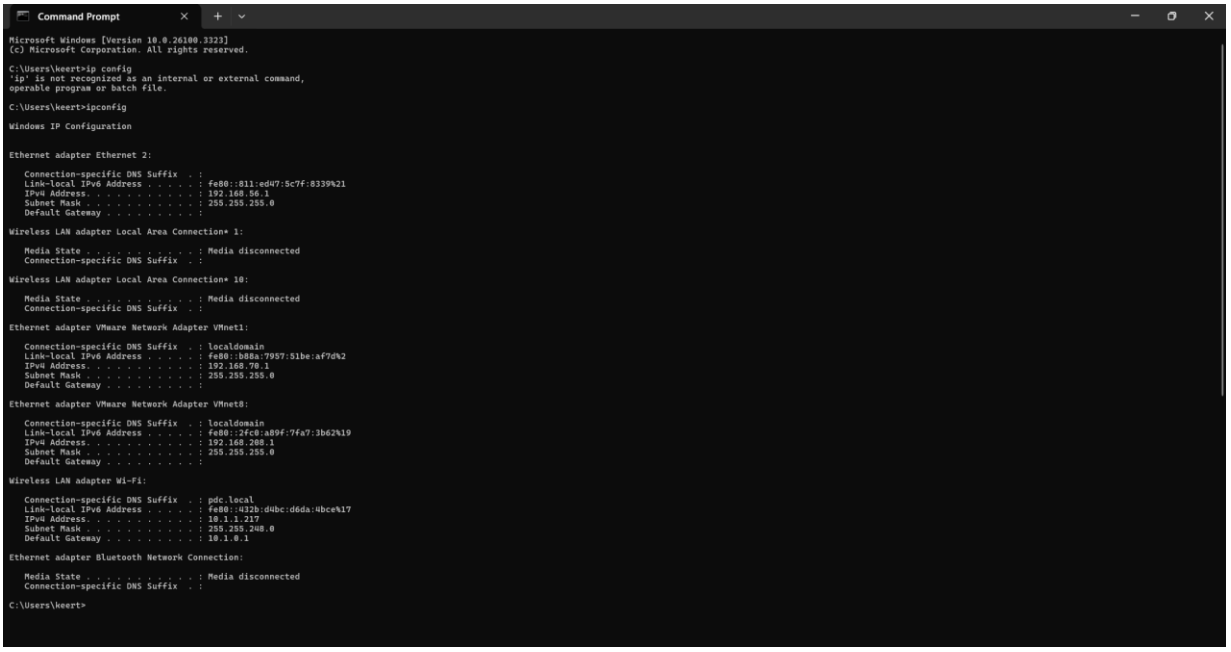
Steps to Execute:-

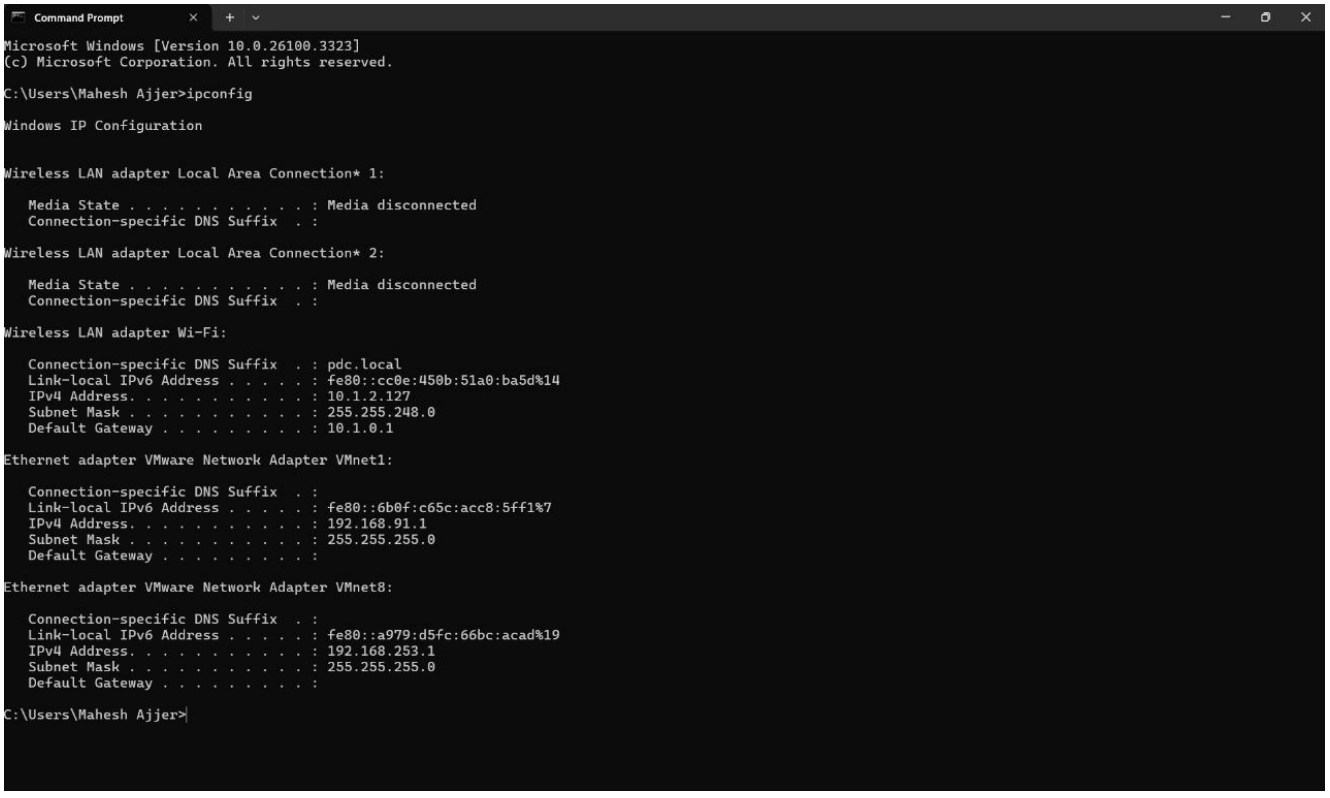
Step 1: Find the IP Addresses

1. Open Command Prompt on both laptops.

2. Run the following command:

```
ipconfig
```

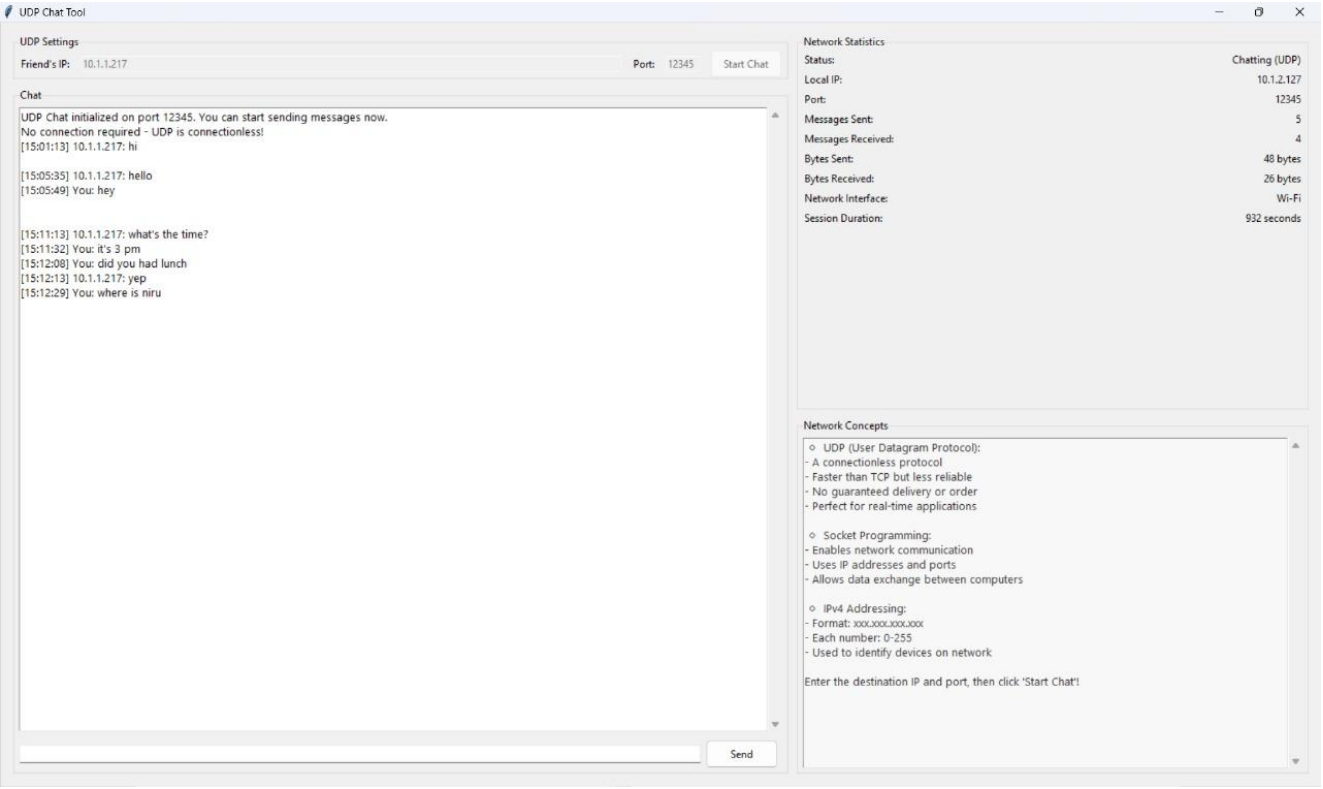


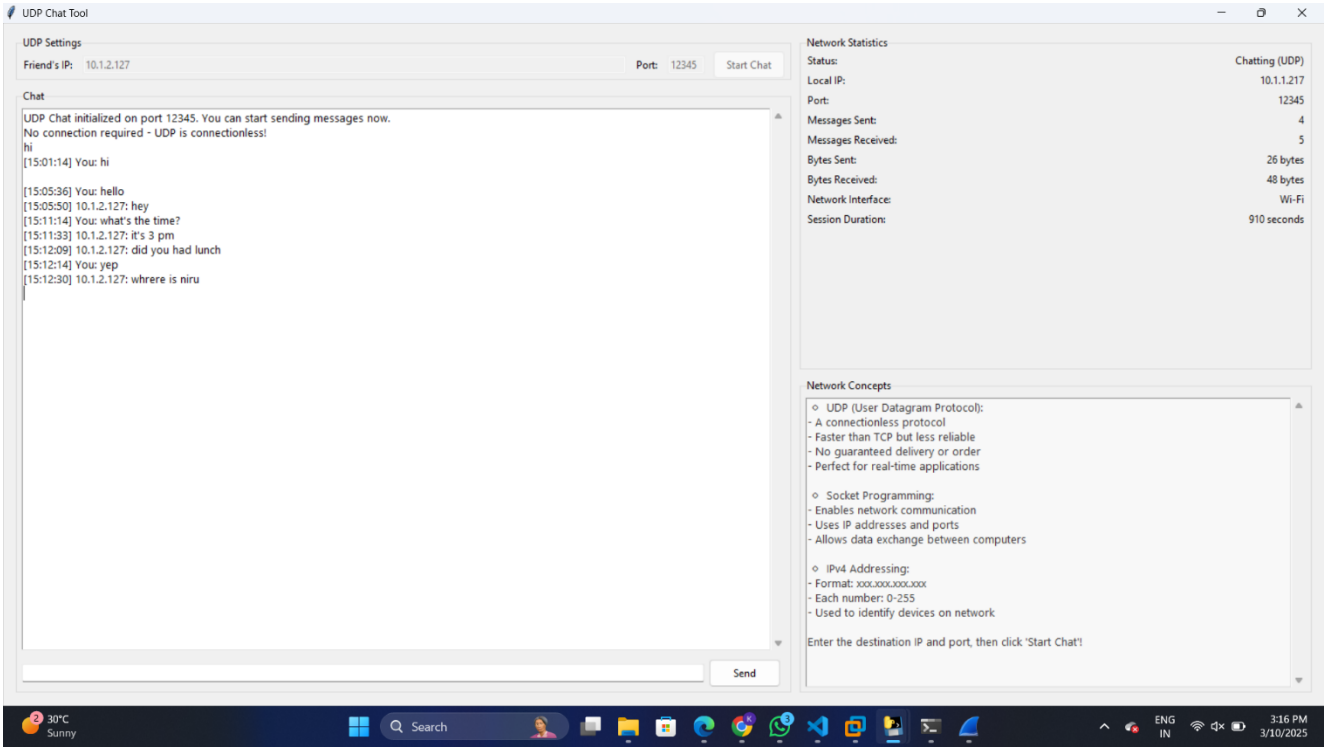


3. Note the IPv4 Address (e.g., 192.168.x.x) and share it with the other user.

Step 2: Launch the Chat Application (Make sure to run as Administrator)

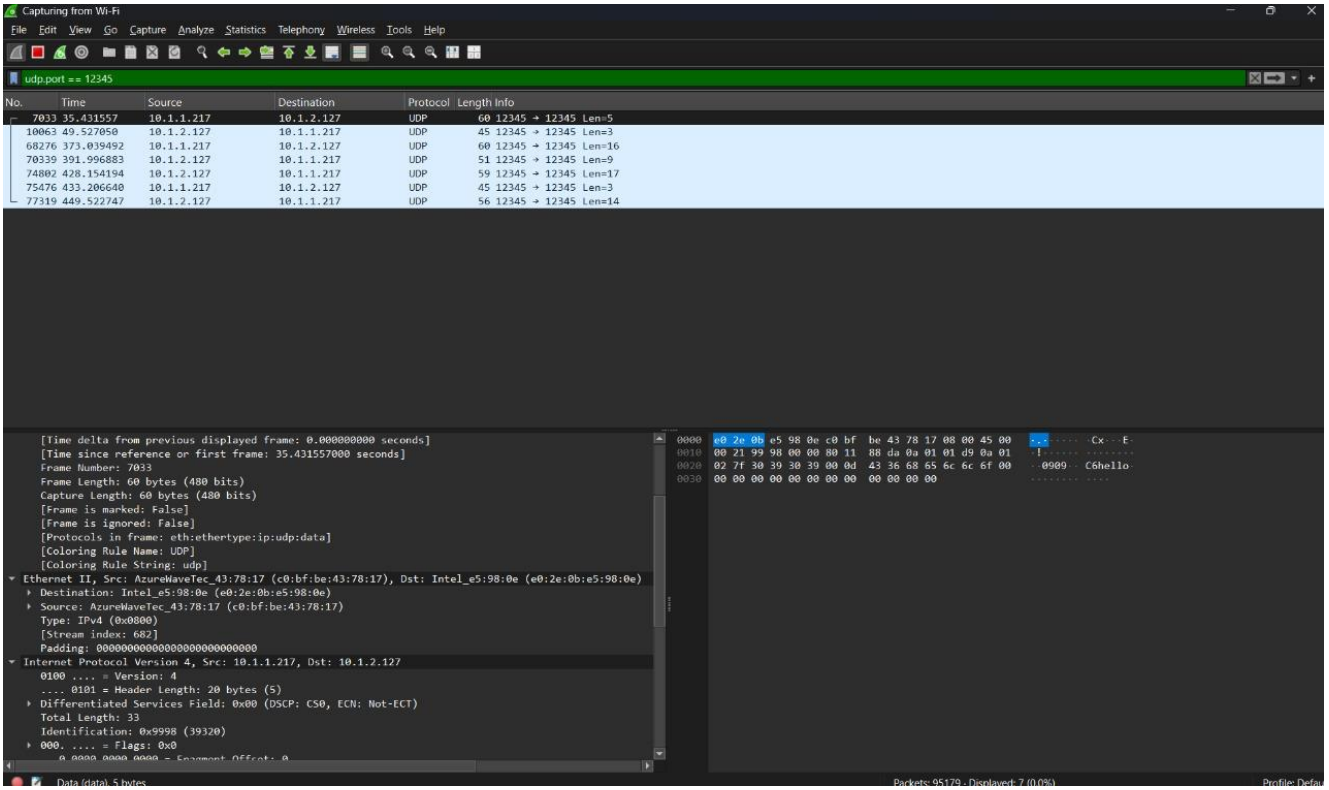
1. Open Computer Networks Lab 3 Tool on both laptops.
2. Enter your friend's IPv4 Address in the provided field.
3. Enter the desired Port Number (for example = 12345), make sure both of you both the same port number.
4. Click on Start chat to begin the Chat. 5. Start sending and receiving messages in real-time.

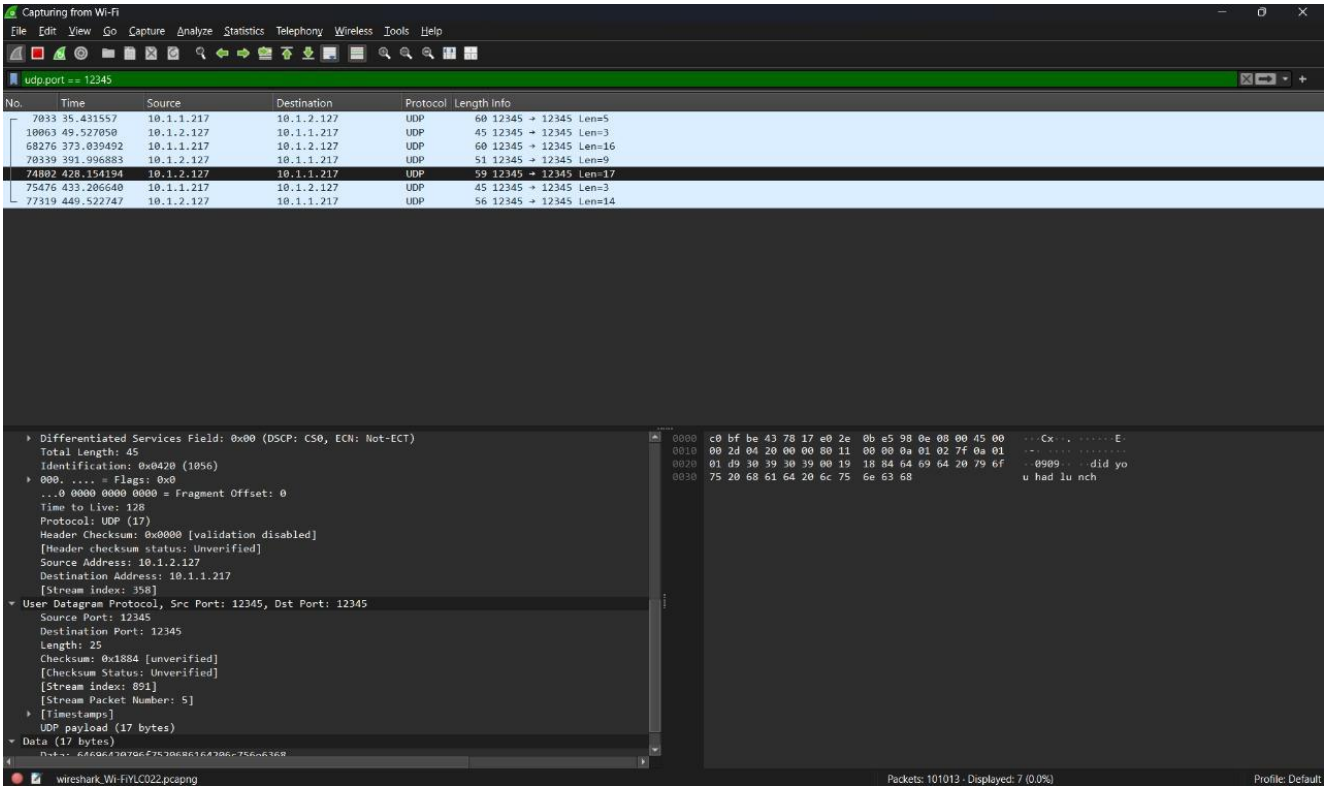




Step 3: Capture UDP Packets in Wireshark

1. Open Wireshark on both laptops.
2. Select the active network adapter (Wi-Fi or Ethernet).
3. Apply the following filter to see only UDP packets related to the chat: udp.port == (port number of your choice eg:12345)
4. Start capturing packets and observe the data being transmitted.


Capturing from Wi-Fi
File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help
udp.port == 12345
No. Time Source Destination Protocol Length Info
7033 35.431557 10.1.1.217 10.1.2.127 UDP 60 12345 → 12345 Len=5
10063 49.527050 10.1.2.127 10.1.1.217 UDP 45 12345 → 12345 Len=3
68276 373.039492 10.1.1.217 10.1.2.127 UDP 60 12345 → 12345 Len=16
70339 391.996883 10.1.2.127 10.1.1.217 UDP 51 12345 → 12345 Len=9
74802 428.154194 10.1.2.127 10.1.1.217 UDP 59 12345 → 12345 Len=17
75476 433.206640 10.1.1.217 10.1.2.127 UDP 45 12345 → 12345 Len=3
77319 449.522747 10.1.2.127 10.1.1.217 UDP 56 12345 → 12345 Len=14
[Time delta from previous displayed frame: 0.000000000 seconds]
[Time since reference or first frame: 35.431557000 seconds]
Frame Number: 7033
Frame Length: 60 bytes (480 bits)
Capture Length: 60 bytes (480 bits)
[Frame is marked: False]
[Frame is ignored: False]
[Protocols in frame: eth:ethertype:ip:udp:data]
[Coloring Rule Name: UDP]
[Coloring Rule String: udp]
Ethernet II, Src: AzureWaveTec_43:78:17 (c0:bf:be:43:78:17), Dst: Intel_e5:98:0e (e0:2e:0b:e5:98:0e)
Destination: Intel_e5:98:0e (e0:2e:0b:e5:98:0e)
Source: AzureWaveTec_43:78:17 (c0:bf:be:43:78:17)
Type: IPv4 (0x0800)
[Stream index: 682]
Padding: 00000000000000000000000000
Internet Protocol Version 4, Src: 10.1.1.217, Dst: 10.1.2.127
0100 .... = Version: 4
.... 0101 = Header Length: 20 bytes (5)
Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)
Total Length: 33
Identification: 0x9998 (39320)
000. .... = Flags: 0x0
0000 e0 2e 0b e5 98 0e c0 bf be 43 78 17 08 00 45 00
0010 00 21 99 98 00 00 80 11 88 da 0a 01 01 d9 0a 01
0020 02 7f 30 39 30 39 00 0d 43 36 68 65 6c 6c 6f 00
0030 00 00 00 00 00 00 00 00 00 00 00 00
Packets: 95179 · Displayed: 7 (0.0%)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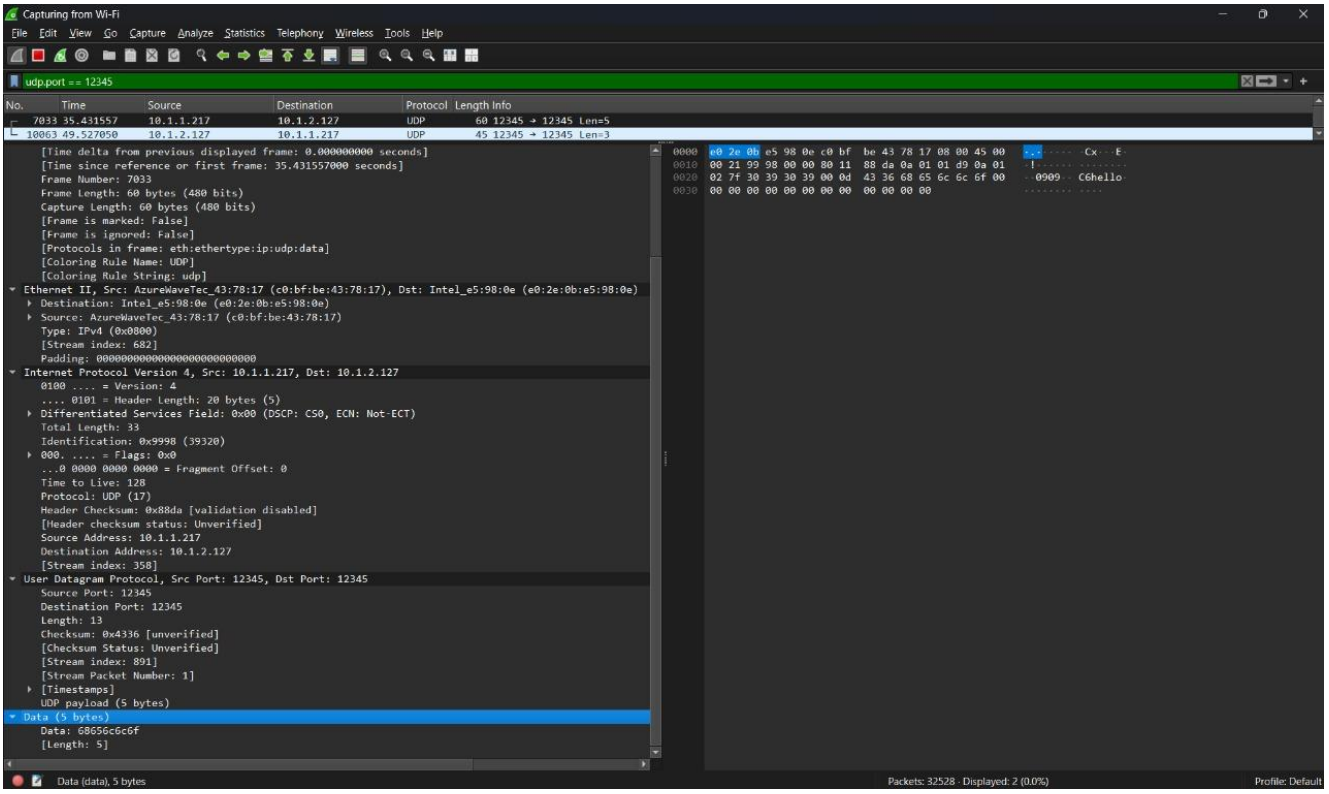
Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)
Total Length: 45
Identification: 0x0420 (1056)
000. .... = Flags: 0x0
...0 0000 0000 0000 = Fragment Offset: 0
Time to Live: 128
Protocol: UDP (17)
Header Checksum: 0x0000 [validation disabled]
[Header checksum status: Unverified]
Source Address: 10.1.2.127
Destination Address: 10.1.1.217
[Stream index: 358]
User Datagram Protocol, Src Port: 12345, Dst Port: 12345
Source Port: 12345
Destination Port: 12345
Length: 25
Checksum: 0x1884 [unverified]
[Checksum Status: Unverified]
[Stream index: 891]
[Stream Packet Number: 5]
[Timestamps]
UDP payload (17 bytes)
Data (17 bytes)
0000 c0 bf be 43 78 17 e0 2e 0b e5 98 0e 08 00 45 00
0010 00 2d 04 20 00 00 80 11 00 00 0a 01 02 7f 0a 01
0020 01 d9 30 39 30 39 00 19 18 84 64 69 64 20 79 6f
0030 75 20 68 61 64 20 6c 75 6e 63 68
wireshark_Wi-FiYLC022.pcapng
Packets: 101013 · Displayed: 7 (0.0%)
Profile: Default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Total Length: 33
Identification: 0x9998 (39320)
000. .... = Flags: 0x0
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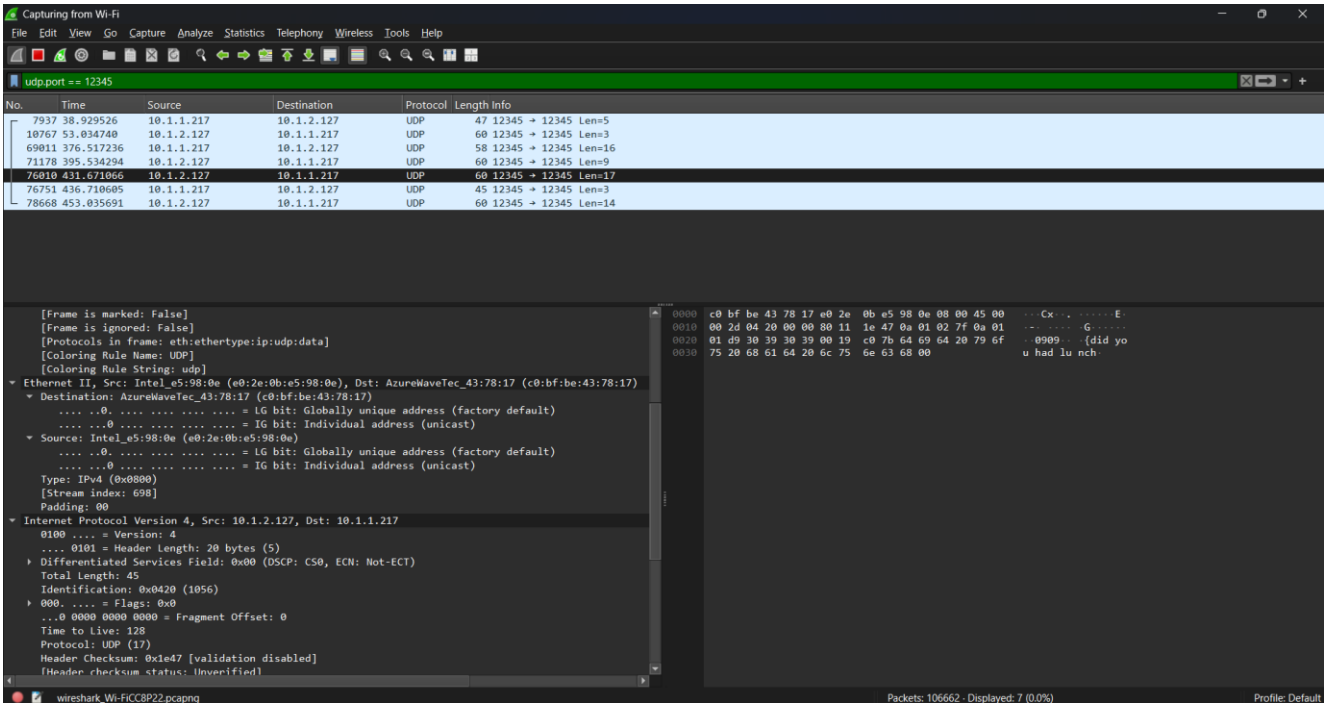
Time to Live: 128
Protocol: UDP (17)
Header Checksum: 0x88da [validation disabled]
[Header checksum status: Unverified]
Source Address: 10.1.1.217
Destination Address: 10.1.2.127
[Stream index: 358]
User Datagram Protocol, Src Port: 12345, Dst Port: 12345
Source Port: 12345
Destination Port: 12345
Length: 13
Checksum: 0x4336 [unverified]
[Checksum Status: Unverified]
[Stream index: 891]
[Stream Packet Number: 1]
[Timestamps]
UDP payload (5 bytes)
Data (5 bytes)
Data: 68656c6c6f
[Length: 5]
0000 e0 2e 0b e5 98 0e c0 bf be 43 78 17 08 00 45 00
0010 00 21 99 98 00 00 80 11 88 da 0a 01 01 d9 0a 01
0020 02 7f 30 39 30 39 00 0d 43 36 68 65 6c 6c 6f 00
0030 00 00 00 00 00 00 00 00 00 00 00 00
Data (data), 5 bytes
Packets: 32528 · Displayed: 2 (0.0%)
Profile: Default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69011 376.517236 10.1.1.217 10.1.2.127 UDP 58 12345 → 12345 Len=16
71178 395.534294 10.1.2.127 10.1.1.217 UDP 60 12345 → 12345 Len=9
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Destination: AzureWaveTec_43:78:17 (c0:bf:be:43:78:17)
.... ..0. .... = LG bit: Globally unique address (factory default)
....0 .... = IG bit: Individual address (unicast)
Source: Intel_e5:98:0e (e0:2e:0b:e5:98:0e)
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[Stream index: 698]
Padding: 00
Internet Protocol Version 4, Src: 10.1.2.127, Dst: 10.1.1.217
0100 .... = Version: 4
.... 0101 = Header Length: 20 bytes (5)
Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)
Total Length: 45
Identification: 0x0420 (1056)
000. .... = Flags: 0x0
...0 0000 0000 0000 = Fragment Offset: 0
Time to Live: 128
Protocol: UDP (17)
Header Checksum: 0x1e47 [validation disabled]
[Header checksum status: Unverified]
0000 c0 bf be 43 78 17 e0 2e 0b e5 98 0e 08 00 45 00
0010 00 2d 04 20 00 00 80 11 1e 47 0a 01 02 7f 0a 01
0020 01 d9 30 39 30 39 00 19 c0 7b 64 69 64 20 79 6f
0030 75 20 68 61 64 20 6c 75 6e 63 68 00
wireshark_Wi-FiCC8P22.pcapng
Packets: 106662 · Displayed: 7 (0.0%)
Profile: Default