

# 1) Capture and analyse ARP packets using Wireshark. Inspect the ARP request and reply frames, and discuss the role of the sender's IP and MAC address in these packets.

The ARP protocol is used for mapping an IP address to a MAC address within a local network.

When a device needs to send data to another device within the same subnet but does not know its MAC address, it sends an **ARP Request**.

The target device responds with an **ARP Reply**, providing its MAC address.

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arp						
No.	Time	Source	Destination	Protocol	Length	Info
411	6.277483	82:92:3b:97:e4:e6	AzureWaveTec_9b:22:...	ARP	42	Who has 192.168.195.162? Tell 192.168.195.37
412	6.277514	AzureWaveTec_9b:22:...	82:92:3b:97:e4:e6	ARP	42	192.168.195.162 is at cc:47:40:9b:22:92
8504	56.452614	82:92:3b:97:e4:e6	AzureWaveTec_9b:22:...	ARP	42	Who has 192.168.195.162? Tell 192.168.195.37
8505	56.452661	AzureWaveTec_9b:22:...	82:92:3b:97:e4:e6	ARP	42	192.168.195.162 is at cc:47:40:9b:22:92
9246	63.120166	AzureWaveTec_9b:22:...	Broadcast	ARP	42	Who has 192.168.195.37? Tell 192.168.195.162
9247	63.126387	82:92:3b:97:e4:e6	AzureWaveTec_9b:22:...	ARP	42	192.168.195.37 is at 82:92:3b:97:e4:e6
10819	83.670684	82:92:3b:97:e4:e6	AzureWaveTec_9b:22:...	ARP	42	Who has 192.168.195.162? Tell 192.168.195.37
10820	83.670767	AzureWaveTec_9b:22:...	82:92:3b:97:e4:e6	ARP	42	192.168.195.162 is at cc:47:40:9b:22:92

> Frame 411: 42 bytes on wire (336 bits), 42 bytes captured (336 bits) on interface \Device\NPF\_{03EF3B24-0000-0000-0000-000000000000}

> Ethernet II, Src: 82:92:3b:97:e4:e6 (82:92:3b:97:e4:e6), Dst: AzureWaveTec\_9b:22:92 (cc:47:40:9b:22:92)

> Address Resolution Protocol (request)

0000 cc 47 40 9b 22 92 82 92 3b 97 e4 e6 08 06 00 01

0010 08 00 06 04 00 01 82 92 3b 97 e4 e6 c0 a8 c3 25

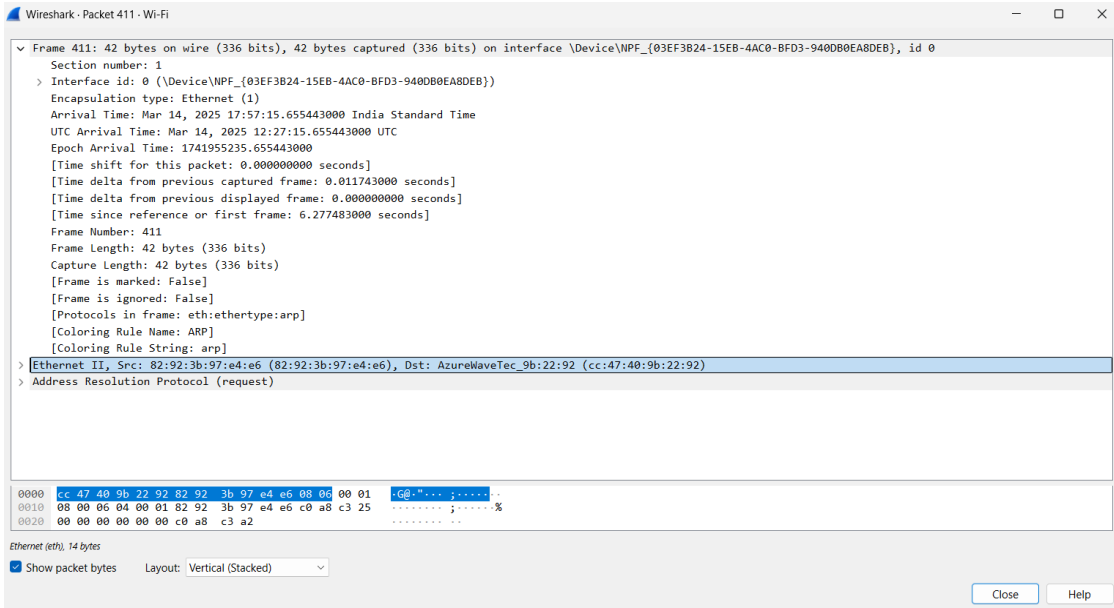
0020 00 00 00 00 00 00 c0 a8 c3 a2

The source MAC address: 82:92:3b:97:e4:e6

The sender is asking "Who has 192.168.195.162? Tell 192.168.195.37".

The device with 192.168.195.162 responds, saying "192.168.195.162 is at cc:47:40:9b:22:92".

## ARP Request



## ARP Reply

