

EXERCISE - 5

The screenshot shows a Wireshark packet capture of a network session. The packet list on the left shows a sequence of packets, including a SYN exchange (packets 9, 10, 11) and subsequent data packets (packets 21-25). The packet details pane on the right shows the selected packet (packet 21) with its Ethernet II, Internet Protocol Version 6, and User Datagram Protocol (UDP) headers. The packet data pane on the right shows the raw data of the selected packet, which is a TCP segment. The status bar at the bottom indicates that 25 packets are displayed, representing 100.0% of the capture.

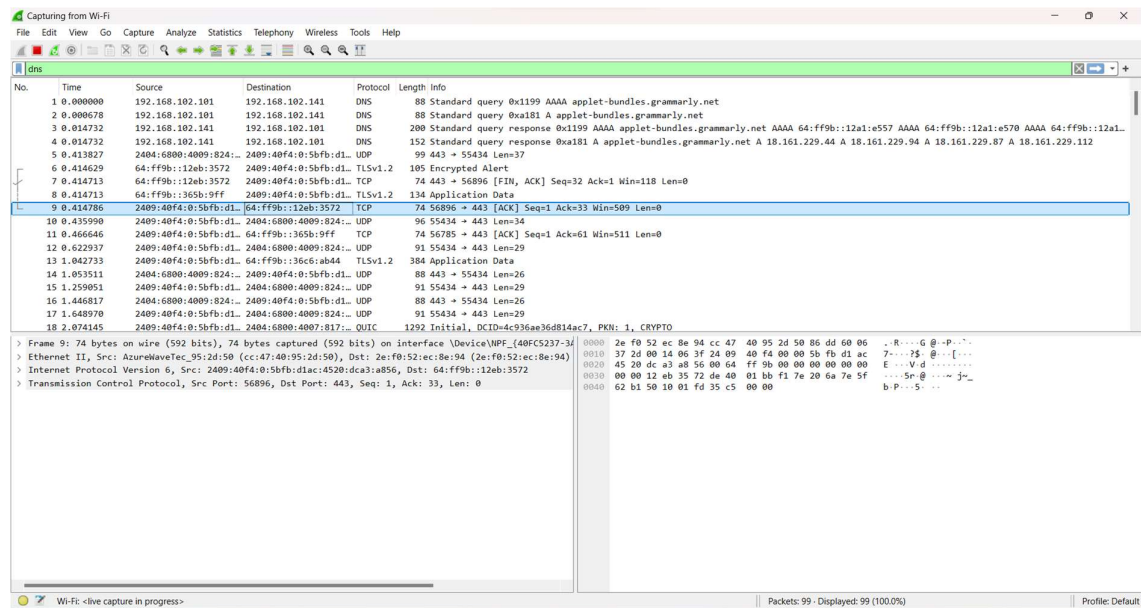
COLOR CODING:

The screenshot shows the same Wireshark packet capture as before, but with the "Wireshark - Coloring Rules" dialog box open. The dialog box displays a list of rules that are applied to the packet list. The rules are color-coded to match the packet list. The rules include:

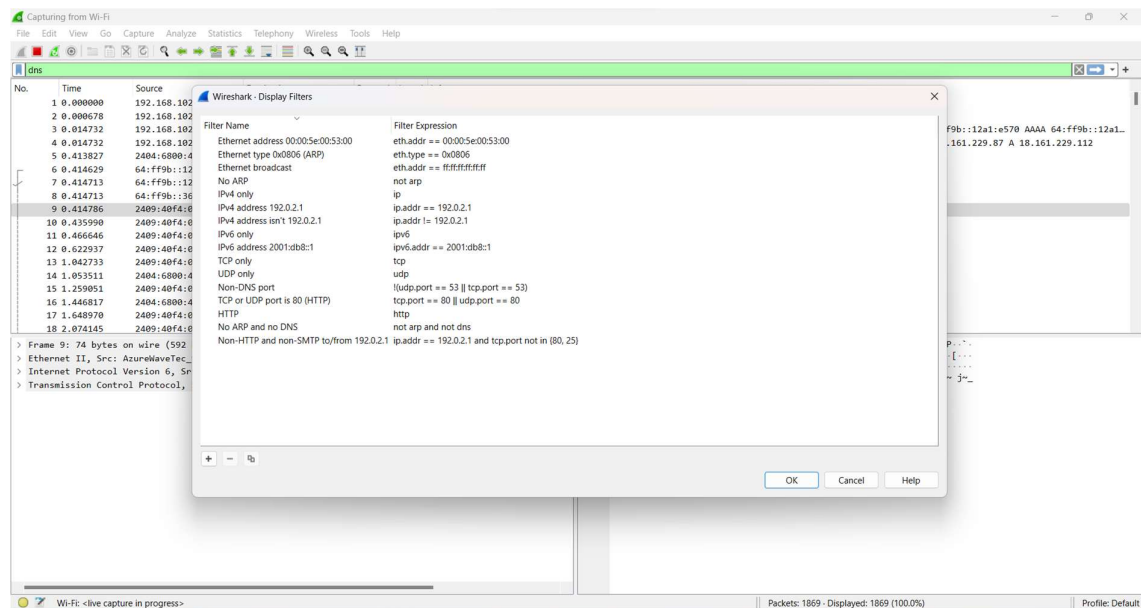
- Bad TCP
- HSRP State Change
- Spanning Tree Topology Change
- OSPF State Change
- ICMP errors
- ARP
- ICMP
- TCP RST
- SCIP ABORT
- IPv4 TTL low or unexpected
- IPv6 hop limit low or unexpected
- Checksum Errors
- SMB
- HTTP
- DICERPC
- Routing

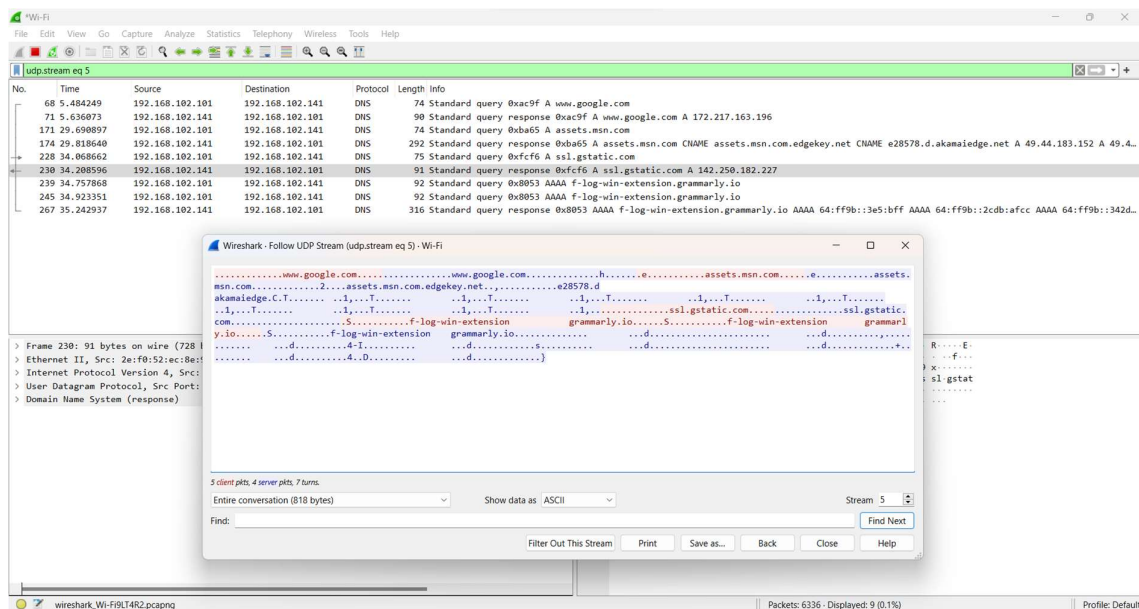
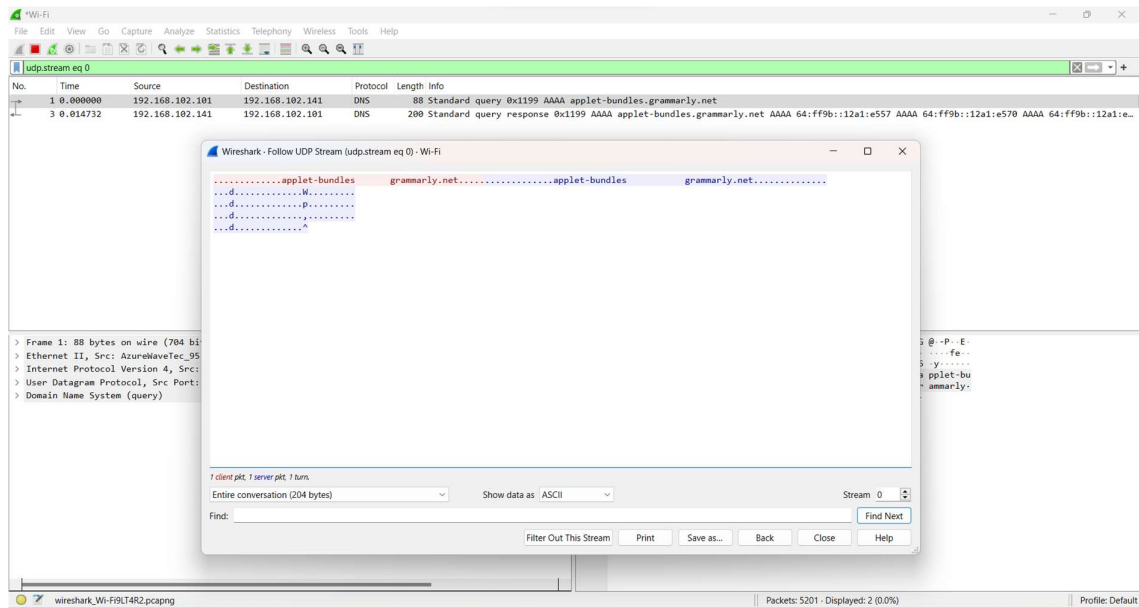
The dialog box also includes a "Filter" column and a "Name" column. The "Filter" column contains the rules, and the "Name" column contains the names of the rules. The "Filter" column is currently empty, and the "Name" column contains the names of the rules. The "Filter" column is currently empty, and the "Name" column contains the names of the rules. The "Filter" column is currently empty, and the "Name" column contains the names of the rules.

SAMPLE CAPTURES:



FILTERING PACKETS:





INSPECTING PACKETS:

The screenshot shows the Wireshark interface with a packet capture of DNS traffic. The packet list on the left shows several DNS queries and responses. Packet 7451 is selected, and a context menu is open over it. The menu options include: Mark/Unmark Packet (Ctrl+M), Ignore/Unignore Packet (Ctrl+D), Set/Unset Time Reference (Ctrl+T), Time Shift... (Ctrl+Shift+T), Packet Comments, Edit Resolved Name, Apply as Filter (selected), Prepare as Filter, Conversation Filter, Colorize Conversation, SCTP, Follow, Copy, Protocol Preferences, Decode As..., and Show Packet in New Window. The 'Apply as Filter' option is highlighted, and a sub-menu is visible showing 'Selected' as the chosen filter.

No.	Time	Source	Destination	Protocol	Length	Info
7340	997.141158	192.168.102.101	192.168.102.141	DNS	86	Standard query 0x6410 A waa-pa.clients6.google.com
7341	997.141339	192.168.102.101	192.168.102.141	DNS	86	Standard query 0x04a0 AAAA waa-pa.clients6.google.com
7342	997.141342	192.168.102.101	192.168.102.141	DNS	75	Standard query 0x23b1 AAAA play.google.com
7343	997.304884	192.168.102.141	192.168.102.101	DNS	91	Standard query response 0x16d4 A play.google.com A 142.250.182.142
7344	997.304884	192.168.102.141	192.168.102.101	DNS	103	Standard query response 0x23b1 AAAA play.google.com AAAA 2404:6800:4007:828::200e
7348	997.306228	192.168.102.141	192.168.102.101	DNS	114	Standard query response 0x04a0 AAAA waa-pa.clients6.google.com AAAA 2404:6800:4007:806::200a
7349	997.306228	192.168.102.141	192.168.102.101	DNS	102	Standard query response 0x6410 A waa-pa.clients6.google.com A 142.250.182.10
7450	1005.075861	192.168.102.101	192.168.102.141	DNS	75	Standard query 0x4bc8 A mail.google.com
7451	1005.076762	192.168.102.101	192.168.102.141	DNS	75	Standard query 0x6c18 AAAA mail.google.com
7452	1005.245792	192.168.102.101	192.168.102.141	DNS	75	Standard query 0x4bc8 A mail.google.com
7453	1005.246857	192.168.102.101	192.168.102.141	DNS	75	Standard query 0x6c18 AAAA mail.google.com
7454	1005.259167	192.168.102.141	192.168.102.101	DNS	75	Standard query response 0x4bc8 A mail.google.com A 142.250.195.133
7455	1005.259167	192.168.102.141	192.168.102.101	DNS	75	Standard query response 0x4bc8 A mail.google.com A 142.250.195.133
7456	1005.400510	192.168.102.141	192.168.102.101	DNS	75	Standard query response 0x6c18 AAAA mail.google.com AAAA 2404:6800:4007:825::2005
7627	1044.074436	192.168.102.101	192.168.102.141	DNS	75	Standard query 0x6bc6 AAAA ssl.gstatic.com
7628	1044.232457	192.168.102.101	192.168.102.141	DNS	75	Standard query 0x6bc6 AAAA ssl.gstatic.com
7629	1044.717187	192.168.102.141	192.168.102.101	DNS	75	Standard query response 0x6bc6 AAAA ssl.gstatic.com AAAA 2404:6800:4007:821::2003

The screenshot shows the Wireshark interface with a packet capture of DNS traffic. The packet list on the left shows several DNS queries and responses. Packet 7451 is selected, and a context menu is open over it. The menu options include: Mark/Unmark Packet (Ctrl+M), Ignore/Unignore Packet (Ctrl+D), Set/Unset Time Reference (Ctrl+T), Time Shift... (Ctrl+Shift+T), Packet Comments, Edit Resolved Name, Apply as Filter (selected), Prepare as Filter, Conversation Filter, Colorize Conversation, SCTP, Follow, Copy, Protocol Preferences, Decode As..., and Show Packet in New Window. The 'Apply as Filter' option is highlighted, and a sub-menu is visible showing 'Selected' as the chosen filter.

No.	Time	Source	Destination	Protocol	Length	Info
8339	1125.228425	192.168.102.141	192.168.102.101	DNS	218	Standard query response 0x4bcd AAAA dsadata.intel.com CNAME dsadata.intel.com.edgesuite.net CNAME a1421.dscd.akamai.net AAAA 2405:2...
8340	1125.228892	192.168.102.101	192.168.102.141	DNS	77	Standard query 0x4bcd AAAA dsadata.intel.com
8342	1125.236343	192.168.102.141	192.168.102.101	DNS	213	Standard query response 0x4bcd AAAA dsadata.intel.com CNAME dsadata.intel.com.edgesuite.net CNAME a1421.dscd.akamai.net AAAA 2405:2...
8403	1137.774459	192.168.102.101	192.168.102.141	DNS	88	Standard query 0x6929 AAAA applet-bundles.grammarly.net
8404	1137.774711	192.168.102.101	192.168.102.141	DNS	88	Standard query 0x0b24 A applet-bundles.grammarly.net
8405	1137.774885	192.168.102.101	192.168.102.141	DNS	88	Standard query 0xb69e HTTPS applet-bundles.grammarly.net
8406	1137.776652	192.168.102.101	192.168.102.141	DNS	88	Standard query 0x255a AAAA applet-bundles.grammarly.net
8407	1137.776873	192.168.102.101	192.168.102.141	DNS	88	Standard query 0xf09a A applet-bundles.grammarly.net
8410	1137.790510	192.168.102.141	192.168.102.101	DNS	152	Standard query response 0x0b24 A applet-bundles.grammarly.net A 18.161.229.94 A 18.161.229.44 A 18.161.229.87 A 18.161.229.112
8411	1137.792207	192.168.102.141	192.168.102.101	DNS	152	Standard query response 0xf09a A applet-bundles.grammarly.net A 18.161.229.112 A 18.161.229.94 A 18.161.229.44 A 18.161.229.87
8422	1138.520468	192.168.102.141	192.168.102.101	DNS	200	Standard query response 0x6929 AAAA applet-bundles.grammarly.net AAAA 64:ff9b::12a1:e557 AAAA 64:ff9b::12a1:e52c AAAA 64:ff9b::12a1...
8424	1138.520468	192.168.102.141	192.168.102.101	DNS	200	Standard query response 0x255a AAAA applet-bundles.grammarly.net AAAA 64:ff9b::12a1:e52c AAAA 64:ff9b::12a1:e570 AAAA 64:ff9b::12a1...
8426	1138.520468	192.168.102.141	192.168.102.101	DNS	173	Standard query response 0xb69e HTTPS applet-bundles.grammarly.net SOA ns-1253.awsdns-28.org
8497	1143.536100	192.168.102.101	192.168.102.141	DNS	88	Standard query 0x7851 AAAA applet-bundles.grammarly.net
8498	1143.536359	192.168.102.101	192.168.102.141	DNS	88	Standard query 0xb262 A applet-bundles.grammarly.net
8499	1143.550937	192.168.102.141	192.168.102.101	DNS	200	Standard query response 0x7851 AAAA applet-bundles.grammarly.net AAAA 64:ff9b::12a1:e55e AAAA 64:ff9b::12a1:e557 AAAA 64:ff9b::12a1...
8501	1143.576936	192.168.102.141	192.168.102.101	DNS	152	Standard query response 0xb262 A applet-bundles.grammarly.net A 18.161.229.87 A 18.161.229.44 A 18.161.229.94 A 18.161.229.112

Wireshark - Flow - Wi-Fi

Time: 192.168.102.101 192.168.102.141 2404:6800:4009:824:200e 2409:40f4:05bfbd1ac4520dca3a856 64f99b:12eb:3572

Comment

0.000000 540x Standard query 0x1199 AAAA applnet-bundles.grammarly.net 53
 0.000678 5962 Standard query 0x181 A applnet-bundles.grammarly.net 53
 0.014732 540x Standard query response 0x1199 AAAA applnet-bundles.grammarly.net 53
 0.014732 5962 Standard query response 0x181 A applnet-bundles.grammarly.net 53
 0.413827 443 → 5434 Len=37 Encrypted Alert
 0.414629 56896 → 5434 (ACK) Seq=32 Ack=1 Win=118 Len=0
 0.414713 56896 → 5434 (ACK) Seq=32 Ack=1 Win=118 Len=0
 0.414713 56785 Application Data
 0.414786 56896 → 443 (ACK) Seq=1 Ack=33 Win=509 Len=0
 0.435990 5434 → 443 Len=34
 0.466646 56785 → 5434 (ACK) Seq=1 Ack=61 Win=511 Len=0
 0.622937 5434 → 443 Len=29
 1.042733 56805 Application Data
 1.053511 443 → 5434 Len=26
 1.259051 5434 → 443 Len=29
 1.446817 443 → 5434 Len=26
 1.648970 5434 → 443 Len=29
 2.074145 55747
 2.074284 55747
 2.074982 Initial: DCD=4c936ae368f14ac7; Pkts: 3, PADDING, CRYPTO, PNG, PAD
 2.075897 55747
 2.076404 55747
 2.085116 443 → 56805 (ACK) Seq=1 Ack=1
 2.085189 56805 Application Data
 2.085299 56805 Application Data

Packet 3: DNS Standard query response 0x1199 AAAA applnet-bundles.grammarly.net AAAA 64f99b:12a1e57c AAAA 64f99b:12a1e57c AAAA 64f99b:12a1e57c AAAA 64f99b:12a1e57c

☐ Limit to display filter

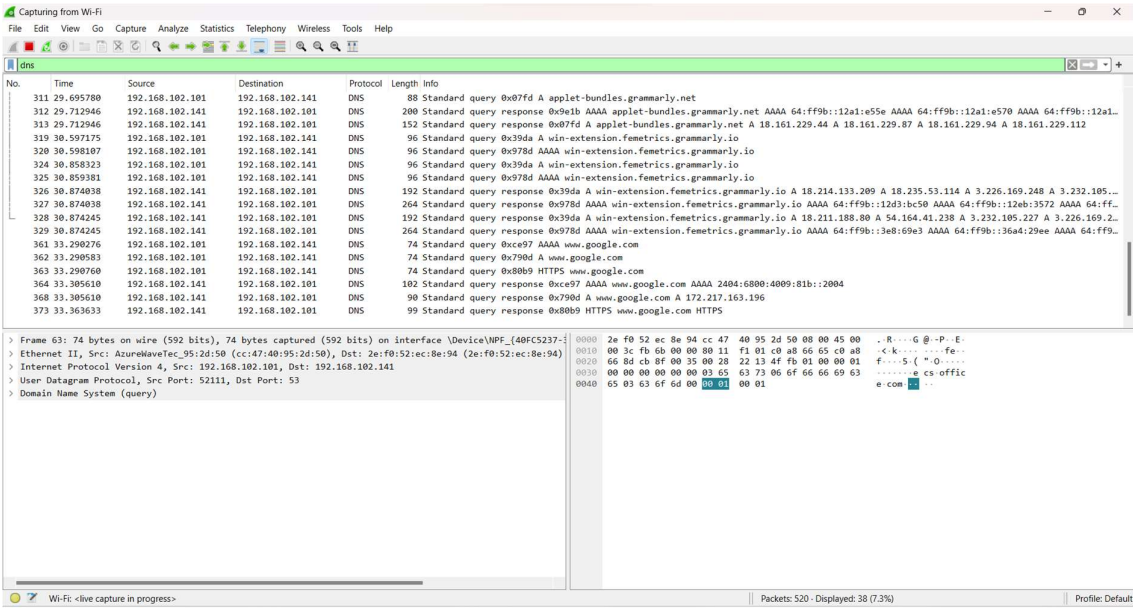
Flow type: All Flows

Addresses: Any

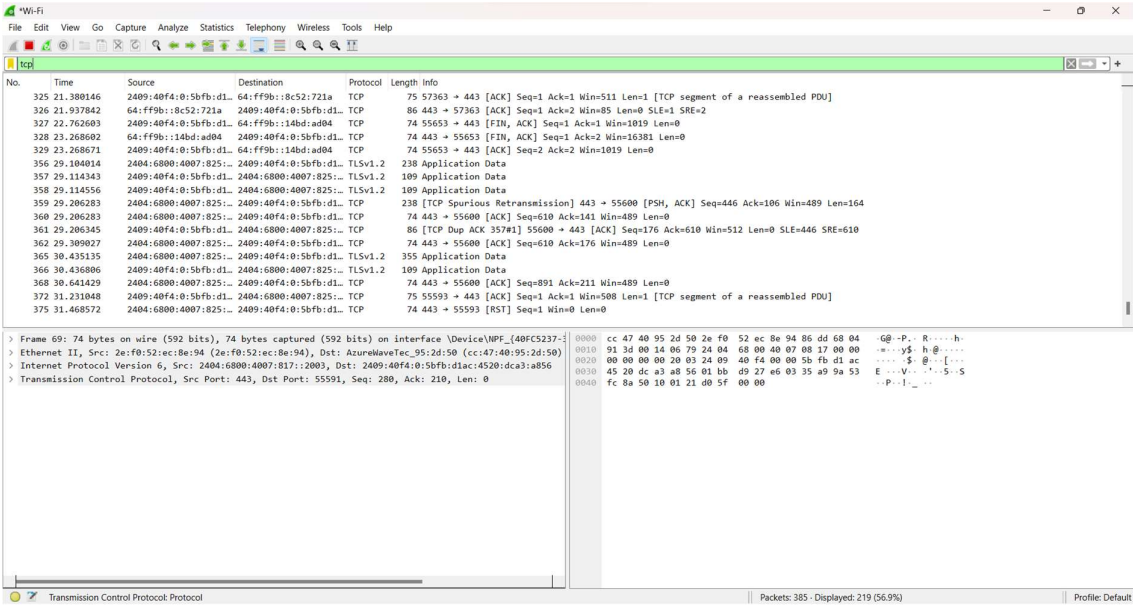
Reset Diagram Export Close Help

The screenshot displays the Wireshark network protocol analyzer interface. The top menu bar includes File, Edit, View, Go, Capture, Analyze, Statistics, Telephony, Wireless, Tools, and Help. The main packet list pane shows a capture of DNS traffic on interface eth0. Two packets are visible, both of type Standard query, originating from 192.168.102.141 and destined for 192.168.102.101. The packet details pane shows the structure of a DNS query, including the question section with a query for 'gnar.grammarly.com'. The packet bytes pane shows the raw data in hexadecimal and ASCII. Overlaid on the main window is the 'WireShark - Capture Options' dialog box. This dialog allows users to configure which interfaces are monitored for capture. It features a table with columns for Interface, Traffic, Link-layer Header, Promiscuous mode, Snaplen (B), Buffer (MB), Monitor, and Capture Filter. The 'Wi-Fi' interface is selected, and its 'Promiscuous mode' checkbox is checked. The 'Capture filter for selected interfaces' field is empty, and the 'Compile BPFs' button is visible. The dialog also includes checkboxes for 'Enable promiscuous mode on all interfaces' and 'Manage interfaces...'. The status bar at the bottom indicates that 1957 packets have been captured, with 127 (6.5%) dropped and 0 (0.0%) dropped.

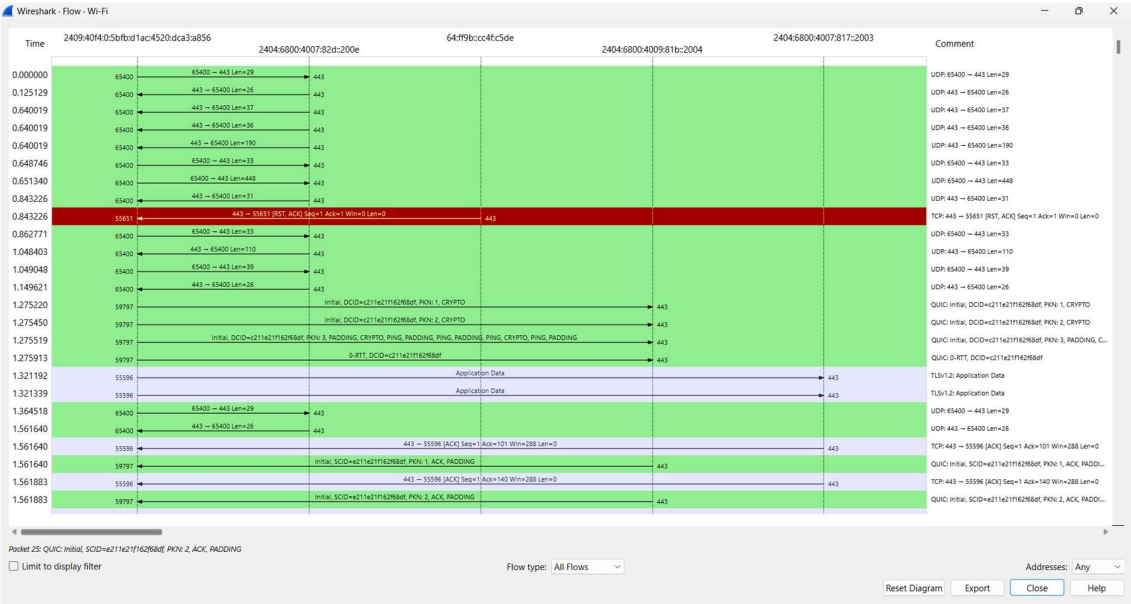
Output:



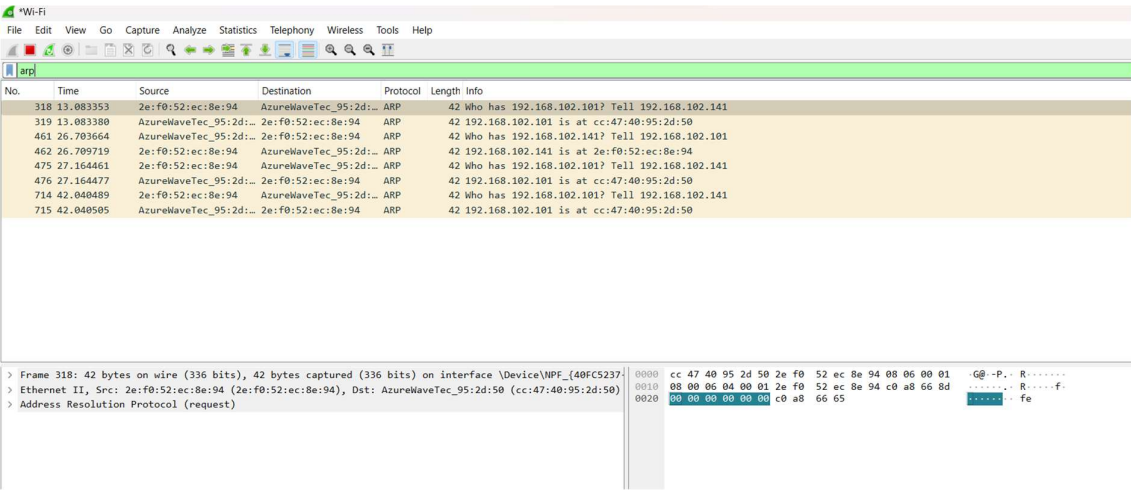
TCP/UDP packets flow graph:



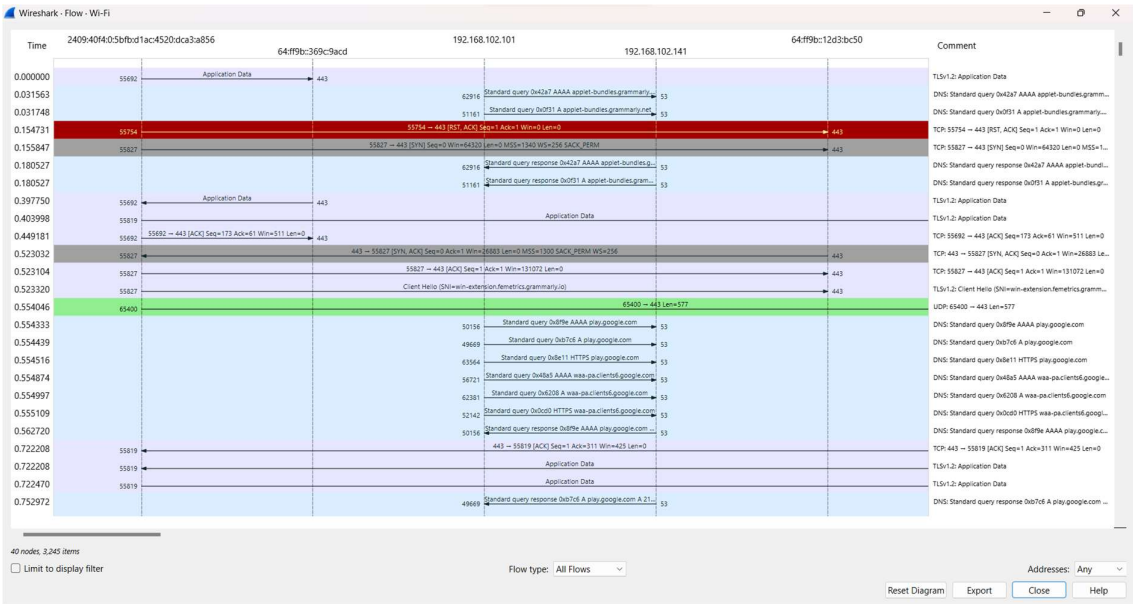
FLOW GRAPH:



OUTPUT:



ARP packets:



Output:

