

EXP NO: 4A STUDY OF WIRESHARK TOOL ENVIRONMENT

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DATE:13/08/2024

AIM:

To study packet sniffing concepts using Wireshark Tool.

DESCRIPTION:

Wireshark, a network analysis tool formerly known as Ethereal, captures packets in real time and display them in human-readable format. Wireshark includes filters, color coding, and other features that let you dig deep into network traffic and inspect individual packets. You can use Wireshark to inspect a suspicious program's network traffic, analyze the traffic flow on your network, or troubleshoot network problems.

What we can do with Wireshark:

- Capture network traffic
- Decode packet protocols using dissectors
- Define filters – capture and display
- Watch smart statistics
- Analyze problems
- Interactively browse that traffic

Wireshark used for:

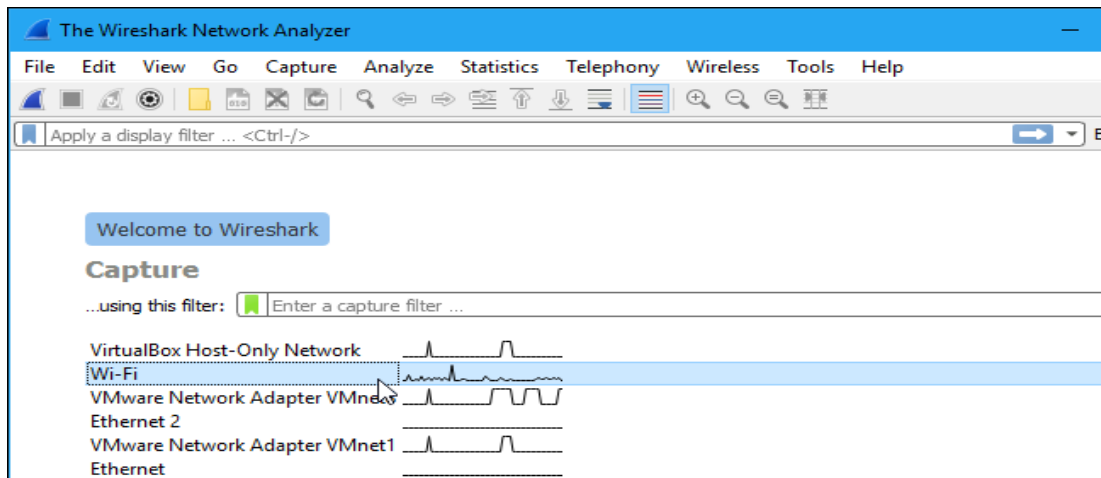
- Network administrators: troubleshoot network problems
- Network security engineers: examine security problems
- Developers: debug protocol implementations
- People: learn **network protocol internals**

Getting Wireshark

Wireshark can be downloaded for Windows or macOS from [its official website](#). For Linux or another UNIX-like system, Wireshark will be found in its package repositories. For Ubuntu, Wireshark will be found in the Ubuntu Software Center.

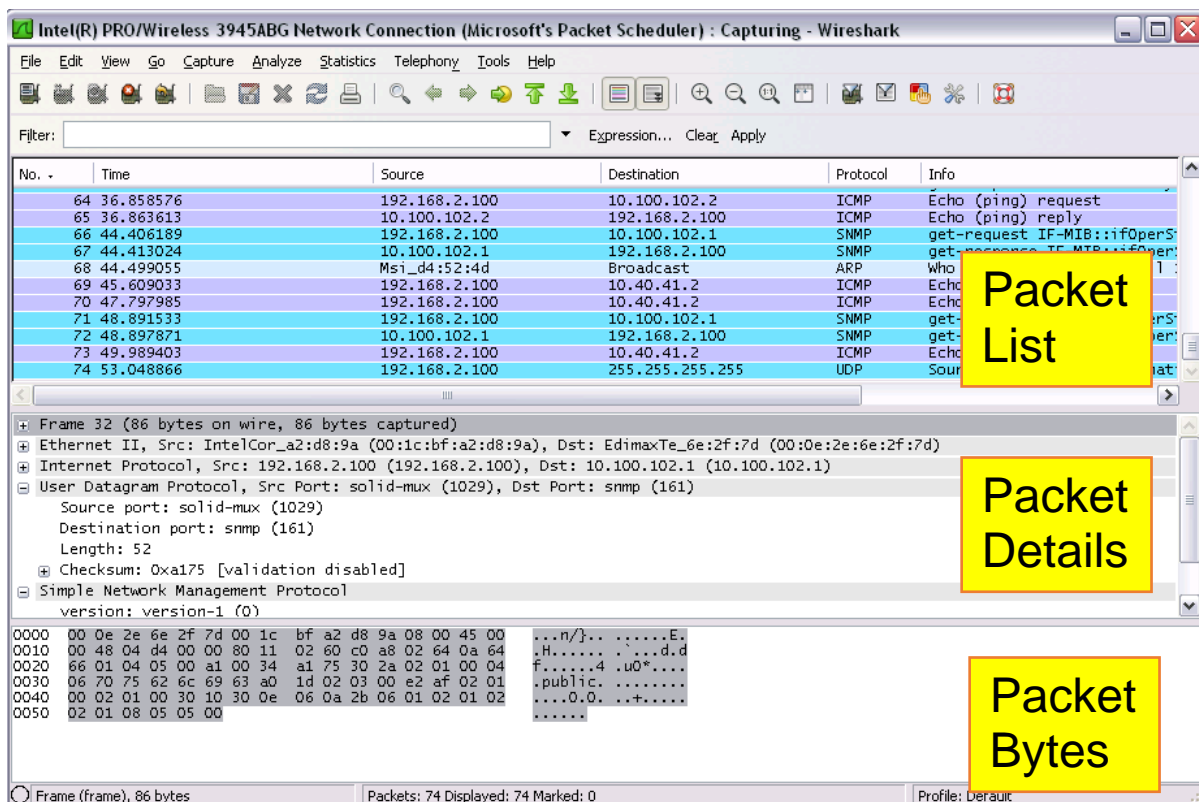
Capturing Packets

After downloading and installing Wireshark, launch it and double-click the name of a network interface under Capture to start capturing packets on that interface



As soon as you click the interface's name, you'll see the packets start to appear in real time. Wireshark captures each packet sent to or from your system.

If you have promiscuous mode enabled—it's enabled by default—you'll also see all the other packets on the network instead of only packets addressed to your network adapter. To check if promiscuous mode is enabled, click Capture > Options and verify the "Enable promiscuous mode on all interfaces" checkbox is activated at the bottom of this window.



Click the red “Stop” button near the top left corner of the window when you want to stop capturing traffic.

The “Packet List” Pane

The packet list pane displays all the packets in the current capture file. The “Packet List” pane Each line in the packet list corresponds to one packet in the capture file. If you select a line in this pane, more details will be displayed in the “Packet Details” and “Packet Bytes” panes.

The “Packet Details” Pane

The packet details pane shows the current packet (selected in the “Packet List” pane) in a more detailed form. This pane shows the protocols and protocol fields of the packet selected in the “Packet List” pane. The protocols and fields of the packet shown in a tree which can be expanded and collapsed.

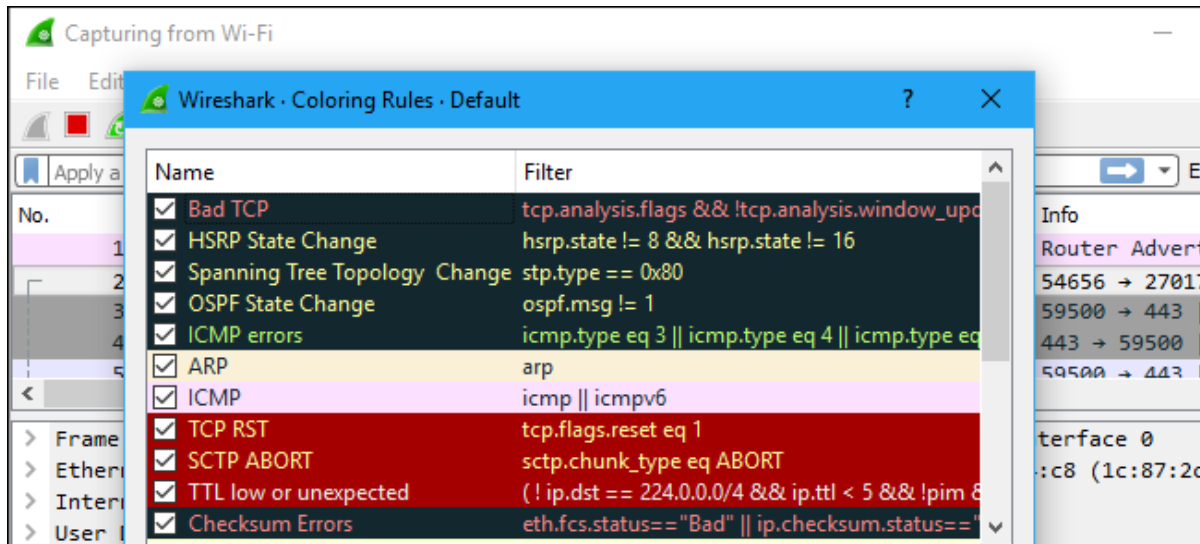
The “Packet Bytes” Pane

The packet bytes pane shows the data of the current packet (selected in the “Packet List” pane) in a hexdump style.

Color Coding

You’ll probably see packets highlighted in a variety of different colors. Wireshark uses colors to help you identify the types of traffic at a glance. By default, light purple is TCP traffic, light blue is UDP traffic, and black identifies packets with errors—for example, they could have been delivered out of order.

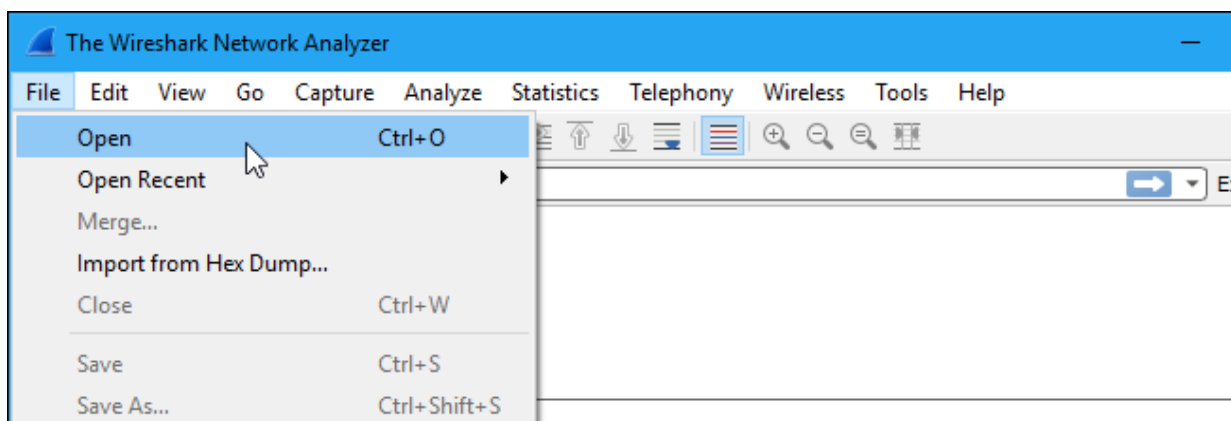
To view exactly what the color codes mean, click View > Coloring Rules. You can also customize and modify the coloring rules from here, if you like.



Sample Captures

If there's nothing interesting on your own network to inspect, Wireshark's wiki has you covered. The wiki contains a [page of sample capture files](#) that you can load and inspect. Click File > Open in Wireshark and browse for your downloaded file to open one.

You can also save your own captures in Wireshark and open them later. Click File > Save to save your captured packets.



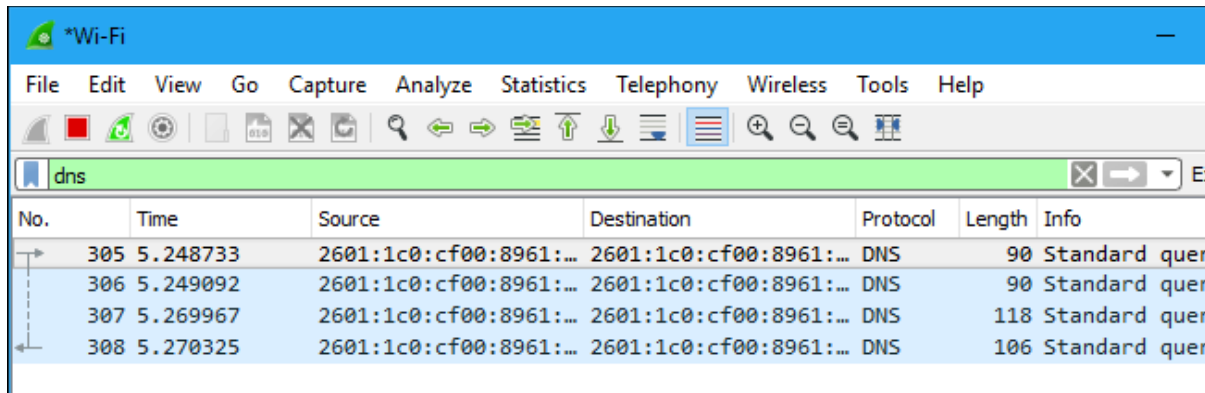
Filtering Packets

If you're trying to inspect something specific, such as the traffic a program sends when phoning home, it helps to close down all other applications using the network so you can narrow down the

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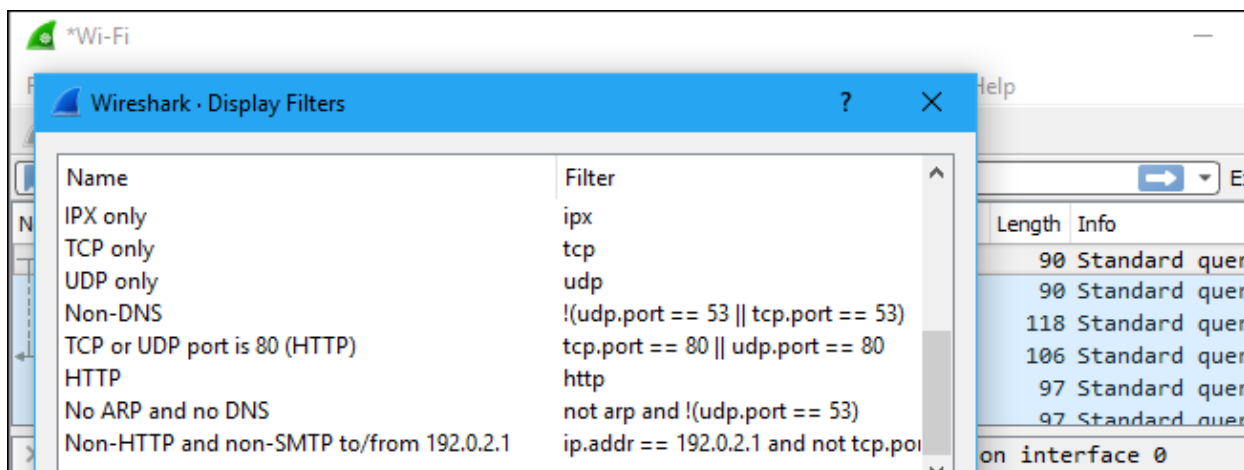
traffic. Still, you'll likely have a large amount of packets to sift through. That's where Wireshark's filters come in.

The most basic way to apply a filter is by typing it into the filter box at the top of the window and clicking Apply (or pressing Enter). For example, type "dns" and you'll see only DNS packets. When you start typing, Wireshark will help you autocomplete your filter.



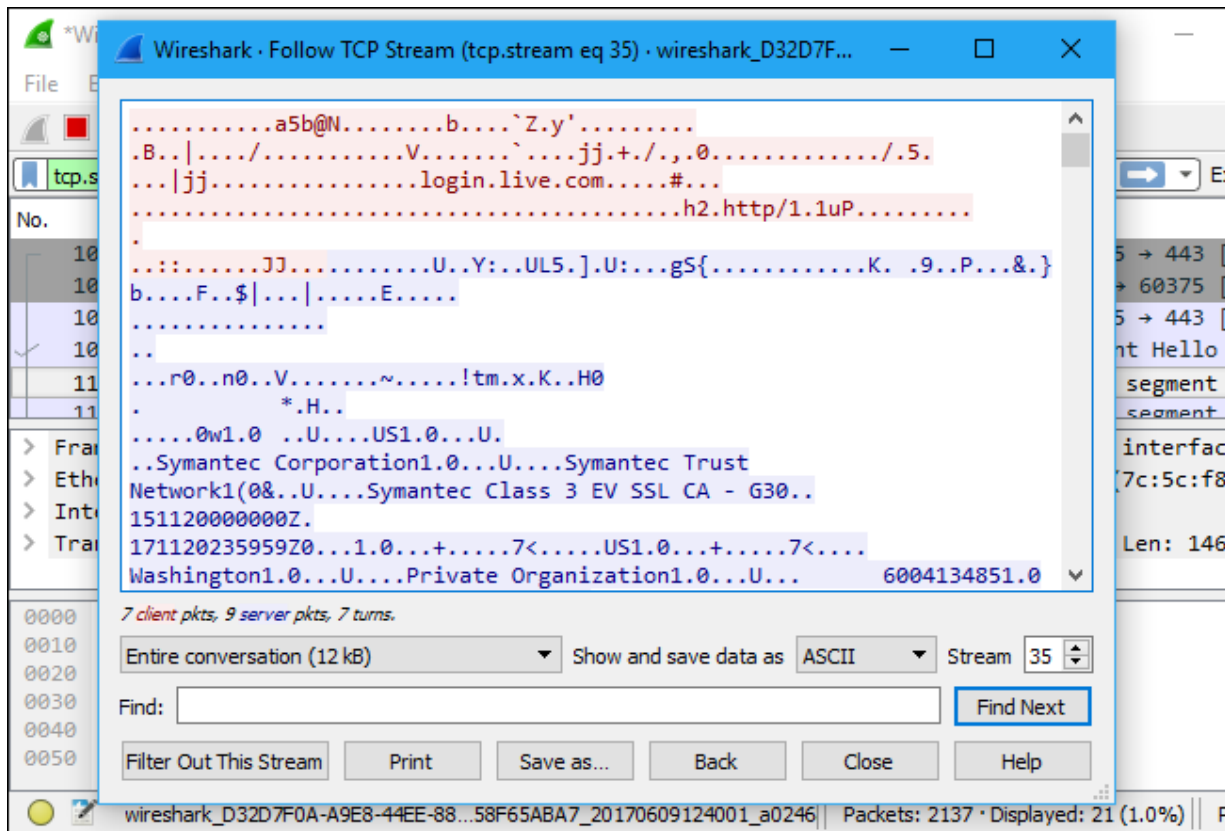
You can also click Analyze > Display Filters to choose a filter from among the default filters included in Wireshark. From here, you can add your own custom filters and save them to easily access them in the future.

For more information on Wireshark's display filtering language, read the [Building display filter expressions](#) page in the official Wireshark documentation.

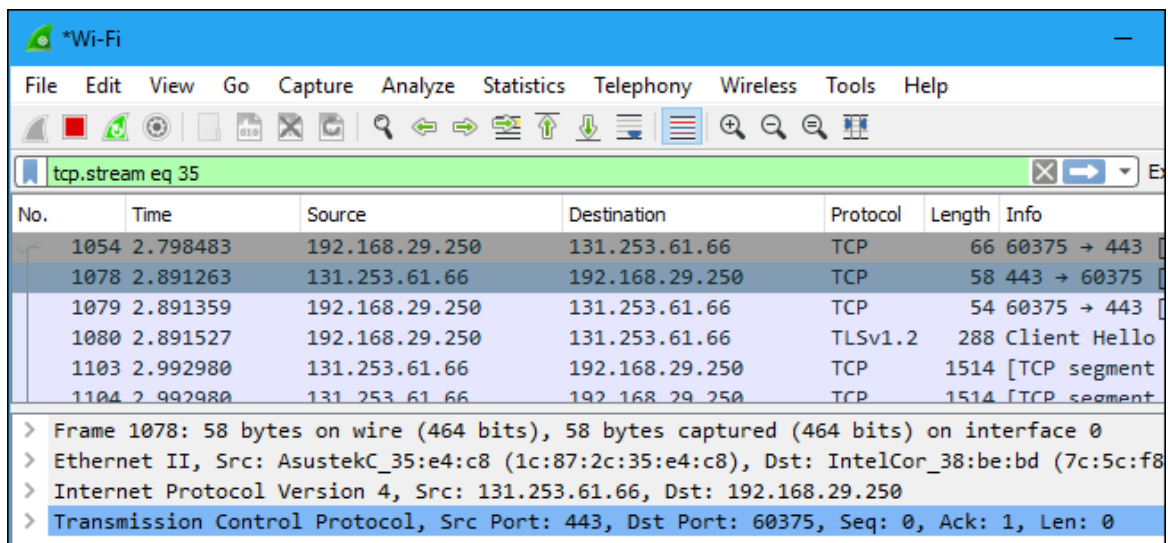


Another interesting thing you can do is right-click a packet and select Follow > TCP Stream.

You'll see the full TCP conversation between the client and the server. You can also click other protocols in the Follow menu to see the full conversations for other protocols, if applicable.



Close the window and you'll find a filter has been applied automatically. Wireshark is showing you the packets that make up the conversation.



Inspecting Packets

Click a packet to select it and you can dig down to view its details.

Wireshark interface showing a packet capture on a Wi-Fi interface. The packet list shows several TCP and TLSv1.2 packets. The packet details pane for frame 1054 shows Ethernet II encapsulation. The packet bytes pane shows the raw data in hexadecimal and ASCII.

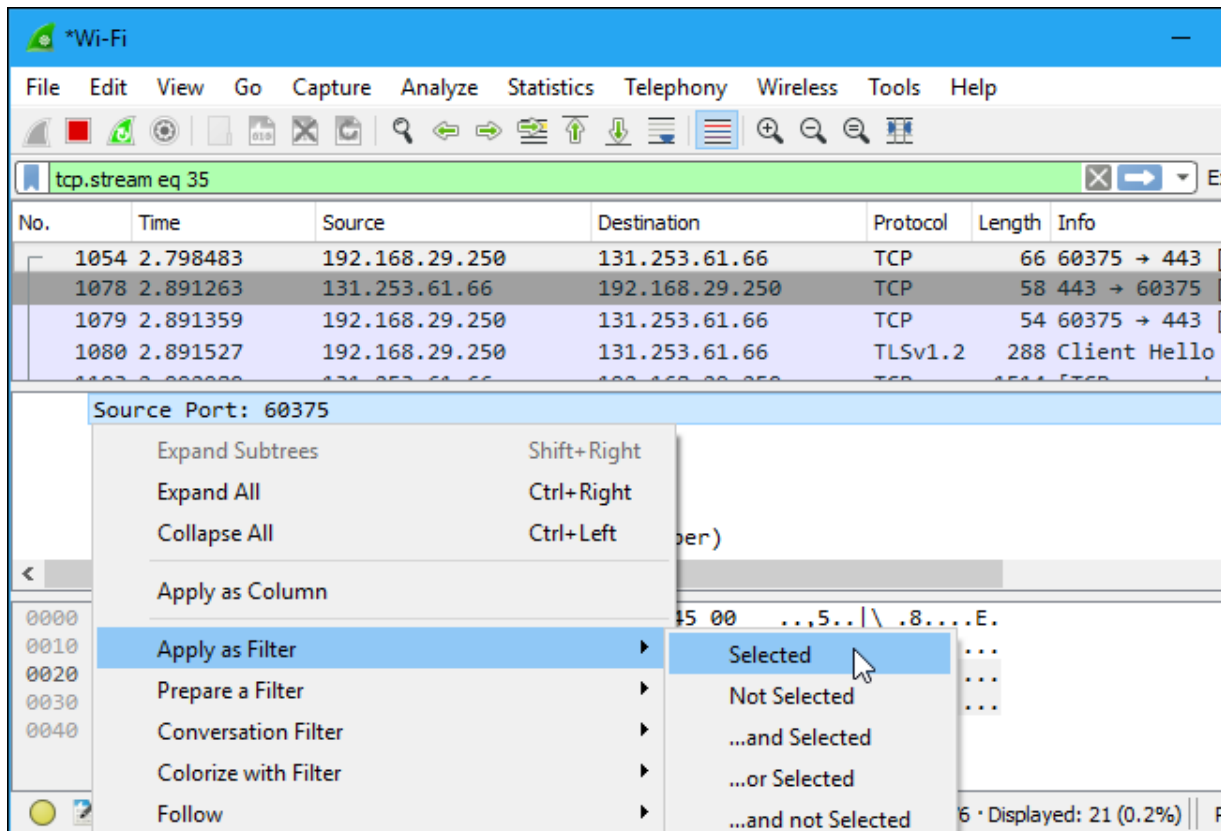
No.	Time	Source	Destination	Protocol	Length	Info
1054	2.798483	192.168.29.250	131.253.61.66	TCP	66	60375 → 443
1078	2.891263	131.253.61.66	192.168.29.250	TCP	58	443 → 60375
1079	2.891359	192.168.29.250	131.253.61.66	TCP	54	60375 → 443
1080	2.891527	192.168.29.250	131.253.61.66	TLSv1.2	288	Client Hello

▼ Frame 1054: 66 bytes on wire (528 bits), 66 bytes captured (528 bits) on interface 0
 Interface id: 0 (\Device\NPF_{D32D7F0A-A9E8-44EE-88DC-DFD58F65ABA7})
 Encapsulation type: Ethernet (1)
 Arrival Time: Jun 9, 2017 12:40:04.140141000 Pacific Daylight Time
 [Time shift for this packet: 0.000000000 seconds]
 Epoch Time: 1497037204.140141000 seconds

Offset	Hex	ASCII
0000	1c 87 2c 35 e4 c8 7c 5c f8 38 be bd 08 00 45 00	..,5.. \ .8....E.
0010	00 34 0b 5d 40 00 80 06 4f 85 c0 a8 1d fa 83 fd	.4.]@... O.....
0020	3d 42 eb d7 01 bb 22 52 7b 69 00 00 00 00 80 02	=B...."R {i.....
0030	fa f0 48 ef 00 00 02 04 05 b4 01 03 03 08 01 01	..H.....
0040	04 02	..

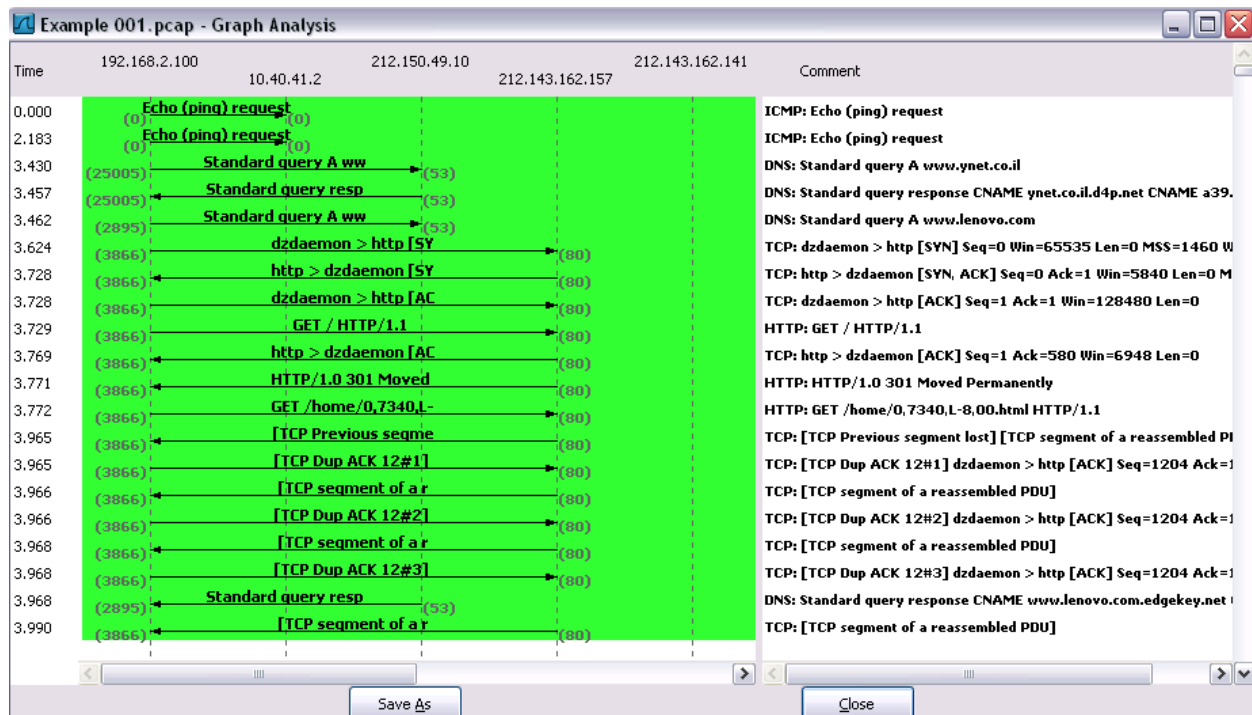
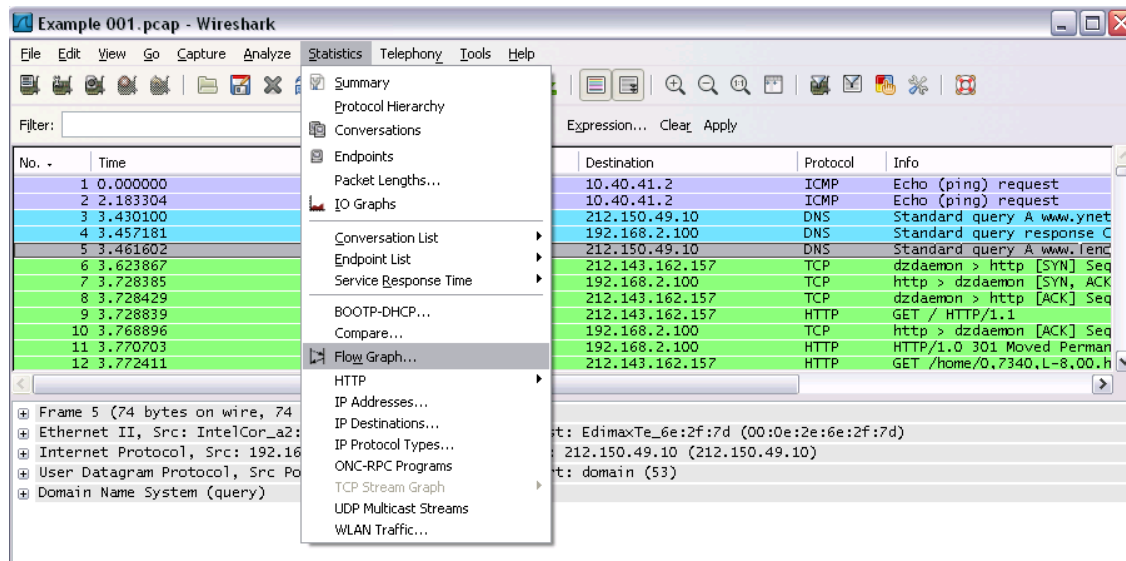
Encapsulation type (frame.encap_type) | Packets: 8136 · Displayed: 21 (0.3%)

You can also create filters from here — just right-click one of the details and use the Apply as Filter submenu to create a filter based on it.



Wireshark is an extremely powerful tool, and this tutorial is just scratching the surface of what you can do with it. Professionals use it to debug network protocol implementations, examine security problems and inspect network protocol internals.

Flow Graph: Gives a better understanding of what we see.




Result:

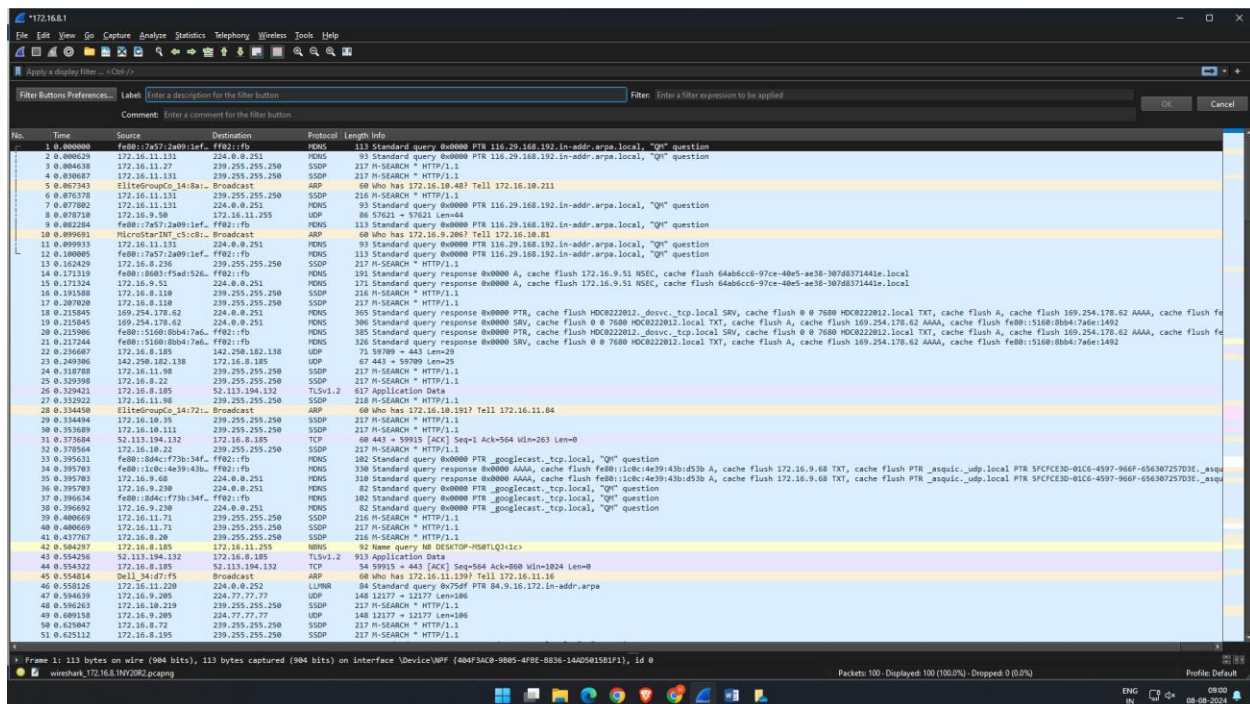
packet sniffing concepts using Wireshark Tool is studied.

EXP NO:4B ANALYZE NETWORK TRAFFIC USING WIRESHARK TOOL**DATE:19/08/2024****AIM:**

To capture, save, filter and analyze network traffic on TCP / UDP / IP / HTTP / ARP /DHCP /ICMP /DNS using Wireshark Tool

Exercises**1. Capture 100 packets from the Ethernet: IEEE 802.3 LAN Interface and save it.****Procedure**

- Select Local Area Connection in Wireshark.
- Go to capture  option
- Select stop capture automatically after 100 packets.
- Then click Start capture.
- Save the packets.

Output

No.	Time	Source	Destination	Protocol	Length	Info
50	0.625047	172.16.8.72	239.255.255.250	SSDP	217	M-SEARCH * HTTP/1.1
51	0.625112	172.16.8.195	239.255.255.250	SSDP	217	M-SEARCH * HTTP/1.1
52	0.626247	172.16.8.195	239.255.251	PNMS	77	Standard query 0x0000 PTR _dssvc_tcp.local, "QU" question
53	0.626247	fe80::b3c:2129:5652::ff02::fb		PNMS	97	Standard query 0x0000 PTR _dssvc_tcp.local, "QU" question
54	0.626944	0e11:3a:95:7a		Broadcast	ARP	00 who has 172.16.10.42? Tell 172.16.8.238
55	0.626944	fe80::d2:a8ff:5c61::f802::11	ff02::11:ff52::8f05	ICMPv6	86	Neighbor Solicitation for fe80::b3c:2129:5652::ff02::fb from 08:3e:1ba:2e:95:7a
56	0.627821	fe80::b3c:2129:5652::ff02::11	ff02::11:ff52::8f05	ICMPv6	86	Neighbor Solicitation for fe80::b3c:2129:5652::ff02::fb from 08:3e:1ba:2e:95:7a
57	0.627519	fe80::1a7b:5f4d:43b::f802::11	ff02::11:ff52::8f05	ICMPv6	86	Neighbor Solicitation for fe80::b3c:2129:5652::ff02::fb from 7c:157:5b:18:da:3
58	0.627519	172.16.8.42	224.0.0.251	PNMS	85	Standard query 0x0000 PTR _microsoft_msc_tcp.local, "QU" question
59	0.628805	fe80::d2:a8ff:5c61::f802::11	ff02::11:ff52::8f05	ICMPv6	86	Neighbor Solicitation for fe80::b3c:2129:5652::ff02::fb from 7c:157:5b:18:da:3
60	0.628805	fe80::b3c:2129:5652::ff02::fb		PNMS	185	Standard query 0x0000 PTR _microsoft_msc_tcp.local, "QU" question
61	0.663149	0e11:3a:95:7a		Broadcast	ARP	00 who has 172.16.11.165? Tell 172.16.9.189
62	0.667051	172.16.11.113	239.255.255.250	SSDP	217	M-SEARCH * HTTP/1.1
63	0.680926	172.16.9.74	172.16.11.255	UDP	186	0x0000 = 51007 Len=144
64	0.700495	172.16.8.38	239.255.255.250	SSDP	217	M-SEARCH * HTTP/1.1
65	0.739061	0a:1b:3d:60:cc:11		Broadcast	64	0x00000000
66	0.775564	Wargear-Wi6icb04		Broadcast	119	POST, Root = 32768/0/6c:bb:ce:86:icb0? Cost = 0 Port = 8000e
67	0.775564	MicroStar287_chica...		Broadcast	ARP	00 who has 172.16.10.48? Tell 172.16.10.15
68	0.776059	172.16.9.22	239.255.255.250	SSDP	216	M-SEARCH * HTTP/1.1
69	0.819053	011te0groupc_1418a...		Broadcast	ARP	00 who has 172.16.10.48? Tell 172.16.10.211
70	0.847182	172.16.9.137	239.255.255.250	SSDP	217	M-SEARCH * HTTP/1.1
71	0.957282	172.16.11.97	172.16.11.255	UDP	86	57621 = 57621 Len=44
72	0.977142	172.16.11.228	224.0.0.252	L1WRR	84	Standard query 0x75eff PTR 84.9.16.172.in-addr.arpa
73	1.403064	172.16.11.27	239.255.255.250	SSDP	217	M-SEARCH * HTTP/1.1
74	1.137197	172.16.9.51	224.0.0.251	PNMS	171	Standard query response 0x0000 A, cache flush 172.16.9.51 H5EC, cache flush 64ab6cc8-97cc-48e5-ae38-307d8371441e.local
75	1.137539	fe80::b8b7:f5ad:526::f802::fb		PNMS	191	Standard query response 0x0000 A, cache flush 172.16.9.51 H5EC, cache flush 64ab6cc8-97cc-48e5-ae38-307d8371441e.local
76	1.202205	172.16.8.119	239.255.255.250	SSDP	216	M-SEARCH * HTTP/1.1
77	1.211125	011te0groupc_14172...		Broadcast	ARP	00 who has 172.16.10.191? Tell 172.16.11.84
78	1.211125			Broadcast		
79	1.212784	172.16.8.118	239.255.255.250	SSDP	217	M-SEARCH * HTTP/1.1
80	1.222333	0e11:3a:12:1e		Broadcast	ARP	00 who has 172.16.11.129? Tell 172.16.8.88
81	1.265440	011te0groupc_64597...		Broadcast	ARP	00 who has 172.16.8.17? Tell 172.16.11.252
82	1.266948	172.16.8.185	172.16.11.255	PNMS	92	Name query 0x DESKTOP-HS8TLQ7ic<
83	1.318187	172.16.11.180	239.255.255.250	SSDP	217	M-SEARCH * HTTP/1.1
84	1.348327	172.16.10.35	239.255.255.250	SSDP	217	M-SEARCH * HTTP/1.1
85	1.344714	172.16.8.22	239.255.255.250	SSDP	217	M-SEARCH * HTTP/1.1
86	1.354966	172.16.10.111	239.255.255.250	SSDP	217	M-SEARCH * HTTP/1.1
87	1.388344	00maiprecis_8312d...		Broadcast	ARP	00 who has 172.16.8.17? Tell 172.16.8.224
88	1.390481	172.16.10.21	239.255.255.250	SSDP	217	M-SEARCH * HTTP/1.1
89	1.383714	172.16.11.11	239.255.255.250	SSDP	217	M-SEARCH * HTTP/1.1
90	1.403953	172.16.11.71	239.255.255.250	SSDP	216	M-SEARCH * HTTP/1.1
91	1.403953	172.16.11.71	239.255.255.250	SSDP	217	M-SEARCH * HTTP/1.1
92	1.418125	172.16.8.20	239.255.255.250	SSDP	216	M-SEARCH * HTTP/1.1
93	1.441279	172.16.8.11	239.255.255.250	SSDP	217	M-SEARCH * HTTP/1.1
94	1.500142	0p_2518:fb		Broadcast	ARP	00 who has 172.16.10.90? Tell 172.16.8.162
95	1.574710	00maiprecis_8312d...		Broadcast	ARP	00 who has 172.16.8.17? Tell 172.16.8.224
96	1.581118	172.16.9.147	239.255.255.250	SSDP	217	M-SEARCH * HTTP/1.1
97	1.581310	172.16.9.147	239.255.255.250	SSDP	216	M-SEARCH * HTTP/1.1
98	1.684689	172.16.10.219	239.255.255.250	SSDP	217	M-SEARCH * HTTP/1.1
99	1.688188	172.16.9.200	239.255.255.250	SSDP	217	M-SEARCH * HTTP/1.1
100	1.624821	172.16.9.200	239.255.255.250	SSDP	216	M-SEARCH * HTTP/1.1

2.Create a Filter to display only TCP/UDP packets, inspect the packets and provide the flow graph.

Procedure

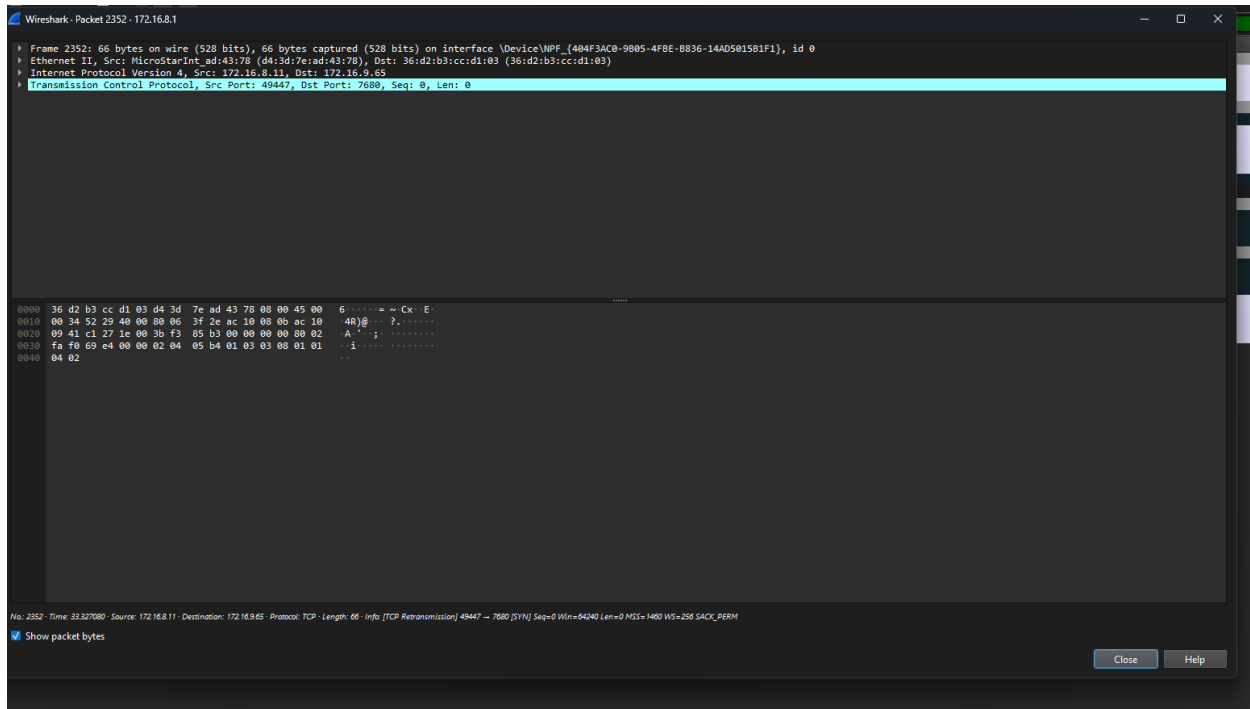
- Select Local Area Connection in Wireshark.
- Go to capture ☐ option
- Select stop capture automatically after 100 packets.
- Then click Start capture.
- Search TCP packets in search bar.
- To see flow graph click Statistics ☐ Flow graph.
- Save the packets.

Output:udp

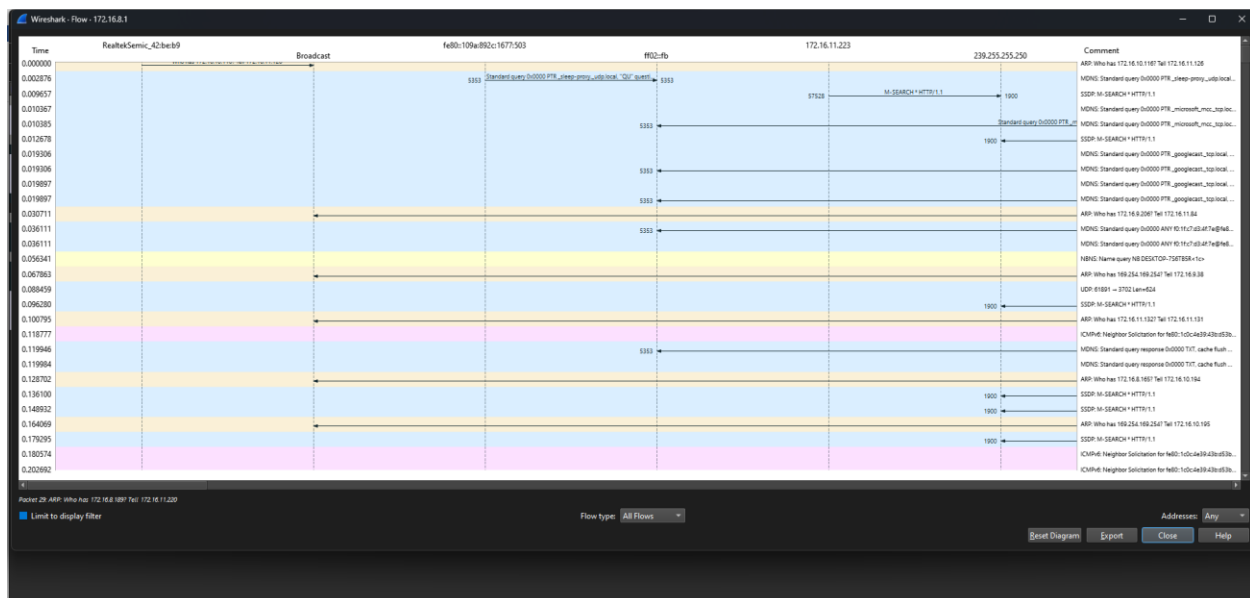
No.	Time	Source	Destination	Protocol	Length	Info
915	12.158257	172.16.8.185	52.113.194.132	TCP	54	59968 → 443 [FIN, ACK] Seq=1 Ack=1 Win=1818 Len=0
916	12.159399	52.113.194.132	172.16.8.185	TCP	60	443 → 59968 [ACK] Seq=1 Ack=2 Win=205 Len=0
1425	21.421611	172.16.8.185	172.217.107.138	TCP	55	59968 → 443 [ACK] Seq=1 Ack=1 Win=1802 Len=1 [TCP segment of a reassembled PDU]
1426	21.423511	172.217.107.138	172.16.8.185	TCP	66	443 → 59968 [ACK] Seq=1 Ack=2 Win=257 Len=0 SLE=1 SRE=2
1516	26.117217	172.16.9.11	172.16.9.65	TCP	66	49447 → 7680 [WIN] Seq=0 Win=64240 Len=0 H5=1408 US=256 SACK PERM
1518	26.119111	172.16.8.113	172.16.9.65	TCP	66	TCP Retransmission 49447 → 7680 [WIN] Seq=0 Win=64240 Len=0 H5=1408 US=256 SACK PERM
1968	27.727258	172.16.8.185	142.251.18.188	TLV1.2	80	Application Data
1973	27.763773	142.251.18.188	172.16.8.185	TLV1.2	80	5228 → 59870 [ACK] Seq=1 Ack=27 Win=290 Len=0
1976	27.765175	142.251.18.188	172.16.8.185	TLV1.2	80	Application Data
3082	27.886526	172.16.8.185	142.251.18.188	TCP	54	59870 → 5228 [ACK] Seq=27 Ack=27 Win=1823 Len=0
2019	28.225224	172.16.8.185	172.16.9.65	TCP	66	TCP Retransmission 49447 → 7680 [WIN] Seq=0 Win=64240 Len=0 H5=1408 US=256 SACK PERM
2052	31.327088	172.16.8.11	172.16.9.65	TCP	66	TCP Retransmission 49447 → 7680 [WIN] Seq=0 Win=64240 Len=0 H5=1408 US=256 SACK PERM
2258	33.869095	172.16.8.11	172.16.9.65	TCP	66	TCP Retransmission 49447 → 7680 [WIN] Seq=0 Win=64240 Len=0 H5=1408 US=256 SACK PERM
2404	34.204438	172.16.8.208	172.16.11.40	TCP	66	TCP Retransmission 64979 → 7680 [WIN] Seq=0 Win=64240 Len=0 H5=1408 US=256 SACK PERM
2611	36.938966	172.16.8.208	172.16.11.40	TCP	66	TCP Retransmission 64979 → 7680 [WIN] Seq=0 Win=64240 Len=0 H5=1408 US=256 SACK PERM
2639	40.933265	172.16.8.208	172.16.11.40	TCP	66	TCP Retransmission 64979 → 7680 [WIN] Seq=0 Win=64240 Len=0 H5=1408 US=256 SACK PERM
5704	56.703516	172.16.9.173	172.16.11.40	TCP	66	TCP Retransmission 52637 → 7680 [WIN] Seq=0 Win=64240 Len=0 H5=1408 US=256 SACK PERM
5740	57.747881	172.16.9.173	172.16.11.40	TCP	66	TCP Retransmission 52637 → 7680 [WIN] Seq=0 Win=64240 Len=0 H5=1408 US=256 SACK PERM
5842	59.742451	172.16.9.173	172.16.11.40	TCP	66	TCP Retransmission 52637 → 7680 [WIN] Seq=0 Win=64240 Len=0 H5=1408 US=256 SACK PERM
6313	57.203274	172.16.8.113	172.16.9.65	TCP	66	TCP Retransmission 52637 → 7680 [WIN] Seq=0 Win=64240 Len=0 H5=1408 US=256 SACK PERM
6354	67.444413	172.16.8.185	172.217.107.138	TCP	55	TCP Keep-Alive 59969 → 443 [ACK] Seq=1 Ack=1 Win=1822 Len=1
6355	67.444139	172.217.107.138	172.16.8.185	TCP	66	TCP Keep-Alive ACK 443 → 59969 [ACK] Seq=1 Ack=2 Win=257 Len=0 SLE=1 SRE=2
6631	72.774755	172.16.8.185	142.251.18.188	TCP	55	TCP Keep-Alive 59870 → 5228 [ACK] Seq=26 Ack=27 Win=1823 Len=1
6634	72.818088	142.251.18.188	172.16.8.185	TCP	66	TCP Keep-Alive ACK 5228 → 59870 [ACK] Seq=27 Ack=27 Win=290 Len=0 SLE=26 SRE=27

Inspecting the packets

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Flow Graph output



No.	Time	Source	Destination	Protocol	Length	Info
3	0.009863	172.16.11.126	239.255.255.250	SSDP	216	N-SEARCH * HTTP/1.1
5	0.831978	172.16.18.211	239.255.255.250	SSDP	216	N-SEARCH * HTTP/1.1
7	0.853898	172.16.8.185	142.250.182.142	UDP	71	63346 → 443 Len=20
8	0.858881	142.250.182.142	172.16.8.185	UDP	68	443 → 63346 Len=20
9	0.871925	142.250.182.142	172.16.8.185	UDP	148	443 → 63346 Len=186
10	0.872709	142.250.182.142	172.16.8.185	UDP	262	443 → 63346 Len=220
11	0.873920	172.16.11.126	239.255.255.250	SSDP	217	N-SEARCH * HTTP/1.1
12	0.873130	172.16.8.185	142.250.182.142	UDP	71	63346 → 443 Len=20
13	0.874281	172.16.9.128	239.255.255.250	SSDP	216	N-SEARCH * HTTP/1.1
14	0.877633	142.250.182.142	172.16.8.185	UDP	68	443 → 63346 Len=20
18	0.180149	172.16.8.212	239.255.255.250	SSDP	217	N-SEARCH * HTTP/1.1
19	0.289299	172.16.11.129	239.255.255.250	SSDP	216	N-SEARCH * HTTP/1.1
21	0.265666	172.16.11.239	239.255.255.250	SSDP	218	N-SEARCH * HTTP/1.1
22	0.266689	172.16.8.226	239.255.255.250	SSDP	218	N-SEARCH * HTTP/1.1
23	0.265689	172.16.11.83	239.255.255.250	SSDP	216	N-SEARCH * HTTP/1.1
24	0.269677	172.16.8.231	172.16.11.255	NDNS	92	Name query NB LAPTOP-FHFD31E1C1<ic>
25	0.279369	172.16.8.185	142.250.182.142	UDP	71	63346 → 443 Len=20
26	0.284225	142.250.182.142	172.16.8.185	UDP	68	443 → 63346 Len=20
27	0.316533	172.16.8.37	239.255.255.250	SSDP	216	N-SEARCH * HTTP/1.1
29	0.342098	172.16.8.189	239.255.255.250	SSDP	217	N-SEARCH * HTTP/1.1
30	0.353555	172.16.9.89	239.255.255.250	SSDP	217	N-SEARCH * HTTP/1.1
31	0.360149	172.16.18.190	239.255.255.250	SSDP	216	N-SEARCH * HTTP/1.1
32	0.367863	172.16.11.4	239.255.255.250	SSDP	216	N-SEARCH * HTTP/1.1
35	0.419262	172.16.9.192	239.255.255.250	SSDP	216	N-SEARCH * HTTP/1.1
36	0.440731	172.16.18.196	239.255.255.250	SSDP	217	N-SEARCH * HTTP/1.1
37	0.443881	172.16.9.219	239.255.255.250	SSDP	216	N-SEARCH * HTTP/1.1
38	0.447340	172.16.8.32	239.255.255.250	SSDP	217	N-SEARCH * HTTP/1.1
39	0.588999	172.16.8.185	142.250.182.142	UDP	71	63346 → 443 Len=20
41	0.589941	142.250.182.142	172.16.8.185	UDP	68	443 → 63346 Len=20
44	0.543334	172.16.18.43	239.255.255.250	SSDP	216	N-SEARCH * HTTP/1.1
47	0.619959	172.16.11.138	239.255.255.250	SSDP	217	N-SEARCH * HTTP/1.1
48	0.626380	172.16.18.172	239.255.255.250	SSDP	212	N-SEARCH * HTTP/1.1
49	0.627664	172.16.8.163	172.16.11.255	NDNS	92	Name query NB DESKTOP-BKFDK1C1<ic>
50	0.649654	172.16.8.16	239.255.255.250	SSDP	217	N-SEARCH * HTTP/1.1
51	0.649162	172.16.9.171	239.255.255.250	SSDP	217	N-SEARCH * HTTP/1.1
52	0.651986	172.16.8.112	239.255.255.250	SSDP	216	N-SEARCH * HTTP/1.1
53	0.683616	172.16.8.112	239.255.255.250	SSDP	217	N-SEARCH * HTTP/1.1
54	0.686278	172.16.8.178	239.255.255.250	SSDP	217	N-SEARCH * HTTP/1.1
55	0.686362	172.16.9.6	239.255.255.250	SSDP	216	N-SEARCH * HTTP/1.1
56	0.787180	172.16.8.185	142.250.182.142	UDP	71	63346 → 443 Len=20
57	0.712818	142.250.182.142	172.16.8.185	UDP	68	443 → 63346 Len=20
59	0.731196	172.16.8.238	239.255.255.250	SSDP	216	N-SEARCH * HTTP/1.1
60	0.737464	172.16.18.219	224.0.0.252	LLMNR	70	Standard query 0xcff1 A HDC181744
61	0.737557	f68b:0597:787:97fe::f682:1:1:3	LLMNR	98	Standard query 0xcff1 A HDC181744	
62	0.738582	172.16.18.219	224.0.0.252	LLMNR	70	Standard query 0xcff7 AAAA HDC181744
63	0.738684	f68b:0597:787:97fe::f682:1:1:3	LLMNR	98	Standard query 0xcff7 AAAA HDC181744	
64	0.739707	172.16.9.75	239.255.255.250	SSDP	216	N-SEARCH * HTTP/1.1
65	0.750110	172.16.18.219	224.0.0.252	LLMNR	70	Standard query 0x4662 A HDC181744
66	0.750170	f68b:0597:787:97fe::f682:1:1:3	LLMNR	98	Standard query 0x4662 A HDC181744	
67	0.751187	172.16.18.219	224.0.0.252	LLMNR	70	Standard query 0x58dd AAAA HDC181744
68	0.751267	f68b:0597:787:97fe::f682:1:1:3	LLMNR	98	Standard query 0x58dd AAAA HDC181744	
69	0.764152	172.16.18.219	172.16.11.255	BROWSER	230	Request Announcement VSSFL2
70	0.769820	172.16.8.218	224.0.0.251	PDNS	229	Standard query response 0x0000 PTR Jodes-ZBook-15_dosvc_tcp.local SRV 0 0 7680 Jodes-ZBook-15.local TXT
71	0.771821	f68b:0597:787:97fe::f682:1:1:3	PDNS	219	Standard query response 0x0000 PTR Jodes-ZBook-15_dosvc_tcp.local SRV 0 0 7680 Jodes-ZBook-15.local TXT	
72	0.771823	172.16.8.218	224.0.0.251	PDNS	92	Standard query 0x0000 ANY Jodes-ZBook-15_dosvc_tcp.local, "Q" question
73	0.771629	f68b:0597:787:97fe::f682:1:1:3	PDNS	112	Standard query 0x0000 ANY Jodes-ZBook-15_dosvc_tcp.local, "Q" question	

Frame 3: 216 bytes on wire (1728 bits), 216 bytes captured (1728 bits) on Interface Device\NPF {40AF3ACB-9085-4F3E-8B3C-142D501501F1}, Id 0

User Datagram Protocol Protocol

Packets 845, Displayed 69 (73.3%), Dropped 0 (0.0%)

Profile: Default

Inspecting the packets

Wireshark - Packet 48 - 172.16.8.1

Frame 48: 212 bytes on wire (1696 bits), 212 bytes captured (1696 bits) on interface \Device\NPF{40AF3AC0-9805-4FBE-8B36-14AD501581F1}, id 0

Ethernet II, Src: EliteGroupCo, Id: 72:47: (88:ac:dd:14:72:47), Dst: IPv4cast_7f:ff:fa (01:00:5e:7f:ff:fa)

Internet Protocol Version 4, Src: 172.16.10.172, Dst: 239.255.255.250

User Datagram Protocol, Src Port: 61774, Dst Port: 1900

Simple Service Discovery Protocol

```

0000  01 00 5e 7f ff fa 88 ae dd 14 72 47 08 00 45 00  --> IPv4cast_7f:ff:fa
0010  00 c6 8b 02 00 00 01 11 87 6e ac 10 0a ac ef ff  --> IPv4cast_7f:ff:fa
0020  ff fa f1 4e 07 6c 00 b2 63 62 4d 2d 53 45 41 52  --N 1: cbm-SEAR
0030  43 48 20 2a 20 40 54 54 50 2f 31 2e 31 0d 0a 40  --CH * HTTP/1.1 M
0040  4f 53 54 3a 20 32 33 30 2e 32 35 35 2e 32 35 35  --OST: 239.255.255
0050  2e 32 35 30 3a 31 39 30 30 0d 0a 4d 41 4e 3a 20  --.250:190 0 MAN:
0060  22 73 73 64 70 3a 64 69 73 63 6f 76 65 72 22 0d  --"ssdp:discover"
0070  0a 4d 58 3a 20 31 0d 0a 53 54 3a 20 75 72 6e 3a  --MX: 1: ST: urn:
0080  64 69 61 6c 2d 6d 76 6c 74 69 73 63 72 65 6e 6e  --d1:multicastres
0090  2d 6f 72 67 3a 73 65 72 76 69 63 65 3a 64 69 61  --org:service:dis
00a0  6c 3a 31 0d 0a 55 53 45 52 2d 41 47 45 4e 54 3a  --1:1 USE R-AGENT:
00b0  20 4f 70 65 72 61 20 47 58 2f 31 32 33 2e 30 2e  --Opera G X/123.0
00c0  50 33 31 32 2e 31 32 34 20 57 69 6e 64 6f 77 73  --812.124 windows
00d0  0d 0a 0d 0a  --

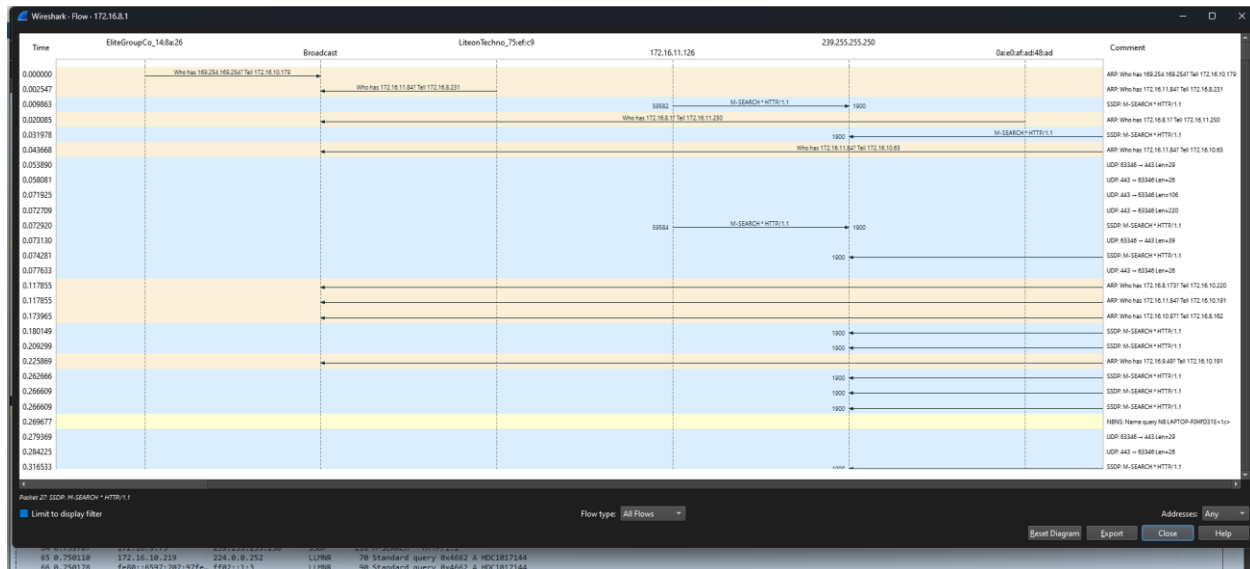
```

No. 48 - Time: 0.626380 - Source: 172.16.10.172 - Destination: 239.255.255.250 - Protocol: SSDP - Length: 212 - Info: M-SEARCH * HTTP/1.1

Show packet bytes


Close Help

Flow chart output



3.Create a Filter to display only ARP packets and inspect the packets.

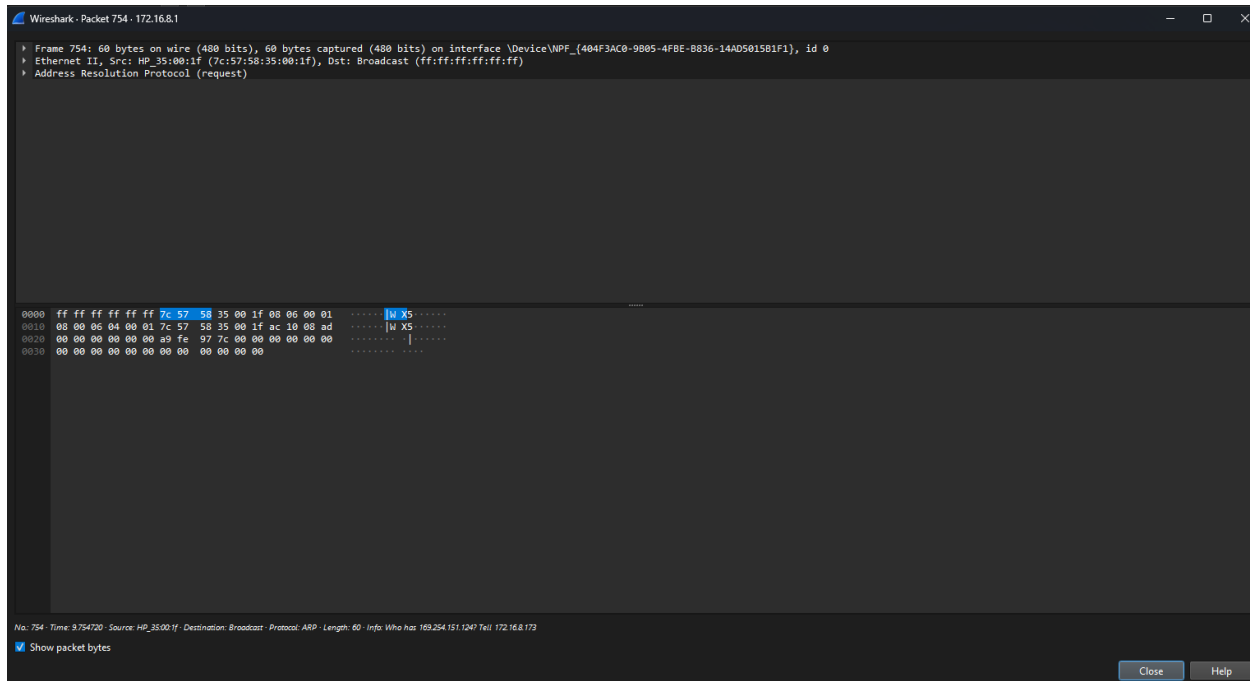
Procedure

- Select Local Area Connection in Wireshark.
- Go to capture  option
- Select stop capture automatically after 100 packets.
- Then click Start capture.
- Search ARP packets in search bar.
- Save the packets.

Output



No.	Time	Source	Destination	Protocol	Length	Info
9	0.025042	GigabyteTech_Bc1b4...	Broadcast	ARP	60	who has 172.16.11.216? Tell 172.16.11.222
15	0.182076	EliteGroupC515ee...	Broadcast	ARP	60	who has 169.254.169.254? Tell 172.16.10.178
16	0.236007	HP_3518ef7b	Broadcast	ARP	60	who has 172.16.10.93? Tell 172.16.8.189
17	0.278540	MicroStarINT_C5ica...	Broadcast	ARP	60	who has 172.16.9.63? Tell 172.16.10.118
18	0.359883	MicroStarINT_C5icf...	Broadcast	ARP	60	who has 172.16.9.280? Tell 172.16.10.49
20	0.364115	Dell_3518ef7b	Broadcast	ARP	60	who has 172.16.9.180? Tell 172.16.8.188
21	0.364115	Dell_3518ef7b	Broadcast	ARP	60	who has 172.16.8.183? Tell 172.16.8.188
22	0.388779	Dell_2e19517a	Broadcast	ARP	60	who has 172.16.8.139? Tell 172.16.8.238
23	0.486227	HP_3518ef7b	Broadcast	ARP	60	who has 172.16.10.97? Tell 172.16.8.162
24	0.451338	MicroStarINT_C5icb...	Broadcast	ARP	60	who has 172.16.10.48? Tell 172.16.10.43
26	0.477771	EliteGroupC14721...	Broadcast	ARP	60	who has 169.254.169.254? Tell 172.16.10.198
28	0.494357	0a:eb:af:a2:5d:15	Broadcast	ARP	60	who has 172.16.9.67? Tell 172.16.9.219
30	0.555043	MicroStarINT_C5icd...	Broadcast	ARP	60	who has 172.16.9.283? Tell 172.16.10.115
32	0.564951	Dell_371fb776	Broadcast	ARP	60	who has 172.16.10.21? Tell 172.16.8.203
33	0.569354	MicroStarINT_ad3e...	Broadcast	ARP	60	who has 172.16.9.61? Tell 172.16.10.224
35	0.750917	MicroStarINT_C5icb...	Broadcast	ARP	60	who has 172.16.8.183? Tell 172.16.10.11
36	0.750917	Dell_34:d3:b3c	Broadcast	ARP	60	who has 172.16.8.137? Tell 172.16.11.8
38	0.752825	06:c7:71:37:4d:7b	06:1b:2a:ad:56:96:c1	ARP	60	Gratuitous ARP for 172.16.11.184 (Reply)
39	0.760795	0a:eb:af:a2:5d:15	Broadcast	ARP	60	who has 172.16.8.1? Tell 172.16.11.206
47	0.890024	Dell_2e19517a	Broadcast	ARP	60	who has 172.16.10.39? Tell 172.16.8.238
51	1.420436	Intel_77:25:9f	Broadcast	ARP	60	who has 172.16.8.1? Tell 172.16.9.214
52	1.826436	Intel_77:25:9f	Broadcast	ARP	60	who has 172.16.8.1? Tell 172.16.9.214
53	1.877841	HomeIprecis_B1321...	Broadcast	ARP	60	who has 172.16.9.17? Tell 172.16.11.229
54	1.880386	Intel_77:25:9f	Broadcast	ARP	60	who has 172.16.8.1? Tell 172.16.9.219
63	1.238551	HP_38:e6:f2	Broadcast	ARP	60	who has 172.16.10.99? Tell 172.16.8.189
64	1.255278	MicroStarINT_C5icf...	Broadcast	ARP	60	who has 172.16.9.280? Tell 172.16.10.49
65	1.255278	EliteGroupC14721...	Broadcast	ARP	60	who has 169.254.169.254? Tell 172.16.10.198
66	1.427223	MicroStarINT_C5icb...	Broadcast	ARP	60	who has 172.16.10.48? Tell 172.16.10.31
74	1.576548	MicroStarINT_ad3e...	Broadcast	ARP	60	who has 172.16.8.63? Tell 172.16.10.224
75	1.576548	MicroStarINT_C5icb...	Broadcast	ARP	60	who has 172.16.10.48? Tell 172.16.10.43
79	1.751248	Dell_34:d3:b3c	Broadcast	ARP	60	who has 172.16.8.137? Tell 172.16.11.8
81	1.852082	Intel_77:25:9f	Broadcast	ARP	60	who has 172.16.8.1? Tell 172.16.9.214
84	1.864562	MicroStarINT_C5icb...	Broadcast	ARP	60	who has 172.16.10.72? Tell 172.16.11.120
85	1.864562	MicroStarINT_C5icb...	Broadcast	ARP	60	who has 172.16.10.93? Tell 172.16.11.120
87	1.872276	RealtekSemiC_42:b...	Broadcast	ARP	60	who has 172.16.8.1? Tell 172.16.11.126
108	2.003928	Dell_35111f9	Broadcast	ARP	60	who has 172.16.8.138? Tell 172.16.9.235
115	2.239518	MicroStarINT_C5icb...	Broadcast	ARP	60	who has 172.16.10.72? Tell 172.16.10.18
117	2.249588	MicroStarINT_C5icf...	Broadcast	ARP	60	who has 172.16.9.280? Tell 172.16.10.49
118	2.251398	EliteGroupC14721...	Broadcast	ARP	60	who has 169.254.169.254? Tell 172.16.10.198
124	2.451858	MicroStarINT_C5icb...	Broadcast	ARP	60	who has 172.16.10.48? Tell 172.16.10.43
125	2.459718	MicroStarINT_C5icd...	Broadcast	ARP	60	who has 172.16.11.80? Tell 172.16.10.30
131	2.645248	MicroStarINT_C5icb...	Broadcast	ARP	60	who has 172.16.10.72? Tell 172.16.11.120
132	2.645248	MicroStarINT_C5icb...	Broadcast	ARP	60	who has 172.16.10.93? Tell 172.16.11.120
135	2.781874	MicroStarINT_C5icd...	Broadcast	ARP	60	who has 172.16.10.48? Tell 172.16.10.20
148	2.825386	EliteGroupC14721...	Broadcast	ARP	60	who has 169.254.169.254? Tell 172.16.10.211
151	2.839549	ASUSTekCOMPU_94:c...	Broadcast	ARP	60	who has 172.16.9.55? Tell 172.16.11.220
155	3.059809	HP_3518ef7b	Broadcast	ARP	60	who has 172.16.10.97? Tell 172.16.8.162
162	3.239662	MicroStarINT_C5icb...	Broadcast	ARP	60	who has 172.16.10.48? Tell 172.16.10.31
164	3.317749	MicroStarINT_C5icd...	Broadcast	ARP	60	who has 172.16.9.165? Tell 172.16.10.31
167	3.374558	MicroStarINT_C5icb...	Broadcast	ARP	60	who has 172.16.10.48? Tell 172.16.10.30
170	3.450973	MicroStarINT_C5icb...	Broadcast	ARP	60	who has 172.16.10.78? Tell 172.16.10.43
171	3.470618	HomeIprecis_B1321...	Broadcast	ARP	60	who has 172.16.9.1? Tell 172.16.11.229
174	3.497980	MicroStarINT_C5icc...	Broadcast	ARP	60	who has 172.16.9.75? Tell 172.16.10.42
178	3.525921	MicroStarINT_C5icd...	Broadcast	ARP	60	who has 172.16.9.283? Tell 172.16.10.115
189	3.640925	MicroStarINT_C5icb...	Broadcast	ARP	60	who has 172.16.10.72? Tell 172.16.11.120
190	3.640925	MicroStarINT_C5icb...	Broadcast	ARP	60	who has 172.16.10.93? Tell 172.16.11.120
Frame 75: 60 bytes on wire (480 bits), 60 bytes captured (480 bits) on interface \Device\NPF {404F3ACB-9805-4F8C-8036-1A4D501501F1}, Id 0						
Address Resolution Protocol Protocol						
					Packets: 508	Displayed: 112 (22.0%) - Dropped: 0 (0.0%)
Profile: Default						
No.	Time	Source	Destination	Protocol	Length	Info
197	3.782228	EliteGroupC14721...	Broadcast	ARP	60	who has 169.254.169.254? Tell 172.16.10.211
204	3.908041	RealtekSemiC_42:b...	Broadcast	ARP	60	who has 172.16.8.1? Tell 172.16.11.126
205	3.912005	HP_3518ef7b	Broadcast	ARP	60	who has 172.16.10.97? Tell 172.16.8.162
206	3.915866	Dell_34:d3:b3c	Broadcast	ARP	60	who has 172.16.8.137? Tell 172.16.11.8
209	4.051399	MicroStarINT_C5icd...	Broadcast	ARP	60	who has 172.16.9.283? Tell 172.16.10.115
210	4.064088	ASUSTekCOMPU_94:c...	Broadcast	ARP	60	who has 172.16.11.48? Tell 172.16.11.120
212	4.068754	ASUSTekCOMPU_94:c...	Broadcast	ARP	60	who has 172.16.8.178? Tell 172.16.11.220
214	4.167784	76:7a:e5:ef:f7:40	Broadcast	ARP	60	who has 172.16.9.78? Tell 172.16.11.120
215	4.167784	76:7a:e5:ef:f7:40	Broadcast	ARP	60	who has 172.16.11.97? Tell 172.16.11.79
217	4.239862	MicroStarINT_C5icb...	Broadcast	ARP	60	who has 172.16.10.48? Tell 172.16.10.31
220	4.268808	RealtekSemiC_42:b...	Broadcast	ARP	60	who has 172.16.9.133? Tell 172.16.11.126
222	4.318414	MicroStarINT_C5icc...	Broadcast	ARP	60	who has 172.16.9.75? Tell 172.16.10.42
226	4.374603	MicroStarINT_C5icb...	Broadcast	ARP	60	who has 172.16.10.48? Tell 172.16.10.30
247	4.773297	EliteGroupC14721...	Broadcast	ARP	60	who has 169.254.169.254? Tell 172.16.10.211
251	4.907494	HP_3518ef7b	Broadcast	ARP	60	who has 172.16.10.97? Tell 172.16.8.162
258	5.051380	MicroStarINT_C5icd...	Broadcast	ARP	60	who has 172.16.9.283? Tell 172.16.10.115
259	5.061841	ASUSTekCOMPU_94:c...	Broadcast	ARP	60	who has 172.16.11.48? Tell 172.16.11.120
267	5.191623	ASUSTekCOMPU_94:c...	Broadcast	ARP	60	who has 172.16.10.282? Tell 172.16.11.120
268	5.191623	ASUSTekCOMPU_94:c...	Broadcast	ARP	60	who has 172.16.8.39? Tell 172.16.11.220
269	5.239554	MicroStarINT_C5icb...	Broadcast	ARP	60	who has 172.16.9.165? Tell 172.16.10.31
274	5.310875	MicroStarINT_C5icc...	Broadcast	ARP	60	who has 172.16.9.75? Tell 172.16.10.42
284	5.428839	MicroStarINT_C5icb...	Broadcast	ARP	60	who has 172.16.10.48? Tell 172.16.10.31
291	5.598957	MicroStarINT_C5icb...	Broadcast	ARP	60	who has 172.16.10.48? Tell 172.16.10.43
294	5.595780	76:7a:e5:ef:f7:40	Broadcast	ARP	60	who has 172.16.9.78? Tell 172.16.11.79
305	5.747521	Dell_34:d3:b3c	Broadcast	ARP	60	who has 172.16.8.137? Tell 172.16.11.8
313	5.878898	MicroStarINT_C5icb...	Broadcast	ARP	60	who has 172.16.10.72? Tell 172.16.11.120
314	5.878898	MicroStarINT_C5icb...	Broadcast	ARP	60	who has 172.16.10.93? Tell 172.16.11.120
320	5.931452	RealtekSemiC_42:b...	Broadcast	ARP	60	who has 172.16.8.1? Tell 172.16.11.126
326	6.055884	ASUSTekCOMPU_94:c...	Broadcast	ARP	60	who has 172.16.11.48? Tell 172.16.11.120
335	6.142793	76:7a:e5:ef:f7:40	Broadcast	ARP	60	who has 172.16.9.78? Tell 172.16.11.79
337	6.241525	MicroStarINT_C5icb...	Broadcast	ARP	60	who has 172.16.10.48? Tell 172.16.10.31
341	6.319075	EliteGroupC14721...	Broadcast	ARP	60	who has 169.254.169.254? Tell 172.16.10.171
344	6.342561	RealtekSemiC_42:b...	Broadcast	ARP	60	who has 172.16.8.42? Tell 172.16.11.126
351	6.409550	MicroStarINT_C5ica...	Broadcast	ARP	60	who has 172.16.9.63? Tell 172.16.10.118
354	6.449725	MicroStarINT_C5icb...	Broadcast	ARP	60	who has 172.16.10.48? Tell 172.16.10.43
370	6.644242	MicroStarINT_C5icb...	Broadcast	ARP	60	who has 172.16.10.72? Tell 172.16.11.120
371	6.644242	MicroStarINT_C5icb...	Broadcast	ARP	60	who has 172.16.10.93? Tell 172.16.11.120
392	6.818491	HP_3518ef7b	Broadcast	ARP	60	who has 172.16.10.97? Tell 172.16.8.166
396	6.842867	Dell_3518ef7b	Broadcast	ARP	60	who has 172.16.10.183? Tell 172.16.8.188
397	6.842867	Dell_3518ef7b	Broadcast	ARP	60	who has 172.16.10.97? Tell 172.16.8.188
420	7.064344	HP_3518ef7b	Broadcast	ARP	60	who has 172.16.10.97? Tell 172.16.8.162
441	7.195416	0a:eb:af:a2:5d:15	Broadcast	ARP	60	who has 172.16.8.1? Tell 172.16.11.206
442	7.242690	MicroStarINT_C5icb...	Broadcast	ARP	60	who has 172.16.10.48? Tell 172.16.10.31
449	7.275779	EliteGroupC14721...	Broadcast	ARP	60	who has 169.254.169.254? Tell 172.16.10.171
450	7.278715	MicroStarINT_C5ica...	Broadcast	ARP	60	who has 172.16.9.63? Tell 172.16.10.118
452	7.321413	MicroStarINT_C5icb...	Broadcast	ARP	60	who has 172.16.9.165? Tell 172.16.10.31
453	7.356848	Dell_3518ef7b	Broadcast	ARP	60	who has 172.16.25.180? Tell 172.16.8.188
454	7.356848	Dell_3518ef7b	Broadcast	ARP	60	who has 172.16.8.183? Tell 172.16.8.188
464	7.448499	MicroStarINT_C5icb...	Broadcast	ARP	60	who has 172.16.10.48? Tell 172.16.10.43
480	7.538140	MicroStarINT_C5icd...	Broadcast	ARP	60	who has 172.16.9.283? Tell 172.16.10.115
485	7.643612	MicroStarINT_C5icb...	Broadcast	ARP	60	who has 172.16.10.72? Tell 172.16.11.120
487	7.643612	MicroStarINT_C5icb...	Broadcast	ARP	60	who has 172.16.10.93? Tell 172.16.11.120
492	7.769878	0a:eb:af:a2:5d:15	Broadcast	ARP	60	who has 172.16.8.1? Tell 172.16.11.206
506	7.983718	HP_3518ef7b	Broadcast	ARP	60	who has 172.16.10.97? Tell 172.16.8.162
508	7.933862	Pegatron_08:04:32	Broadcast	ARP	60	who has 172.16.10.69? Tell 172.16.9.147
Frame 75: 60 bytes on wire (480 bits), 60 bytes captured (480 bits) on interface \Device\NPF {404F3ACB-9805-4F8C-8036-1A4D501501F1}, Id 0						
Address Resolution Protocol Protocol						
					Packets: 508	Displayed: 112 (22.0%) - Dropped: 0 (0.0%)
Profile: Default						

Inspecting the packets



4. Create a Filter to display only DNS packets and provide the flow graph.

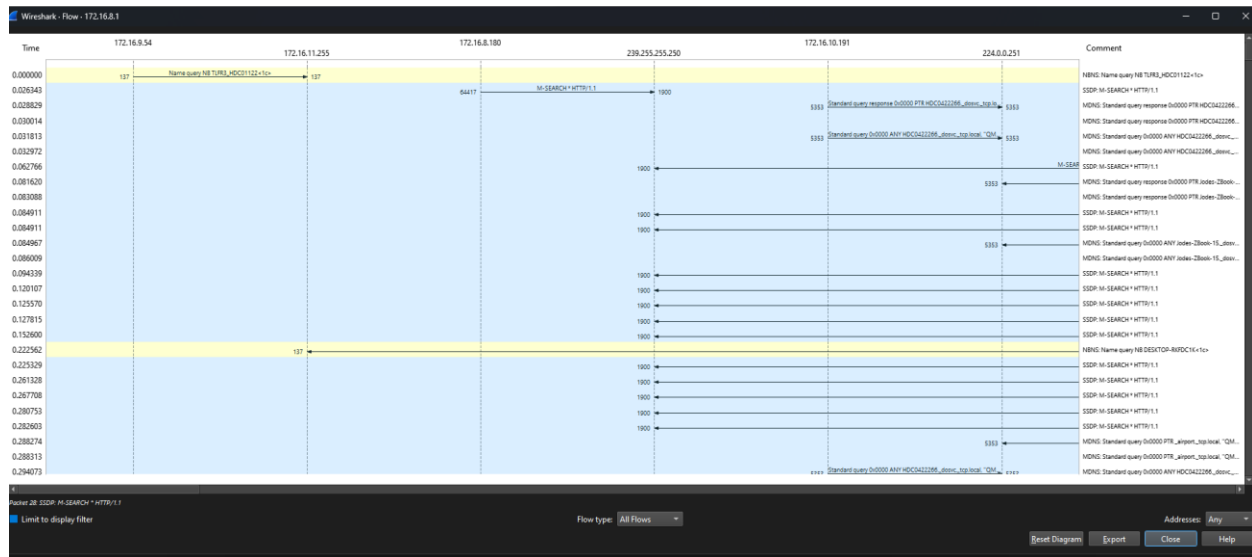
Procedure

- Select Local Area Connection in Wireshark.
- Go to capture  option
- Select stop capture automatically after 100 packets.
- Then click Start capture.
- Search DNS packets in search bar.
- To see flow graph click Statistics  Flow graph.
- Save the packets.

Output


dns					
No.	Time	Source	Destination	Protocol	Length Info
805	5.920690	172.16.8.185	172.16.8.1	DNS	74 Standard query 0x61ca A www.google.com
806	5.920859	172.16.8.185	172.16.8.1	DNS	74 Standard query 0xdcea HTTPS www.google.com
807	5.922217	172.16.8.1	172.16.8.185	DNS	90 Standard query response 0x61ca A www.google.com A 142.250.196.36
808	5.922217	172.16.8.1	172.16.8.185	DNS	99 Standard query response 0xdcea HTTPS www.google.com HTTPS

Flow Graph output



5.Create a Filter to display only HTTP packets and inspect the packets

Procedure

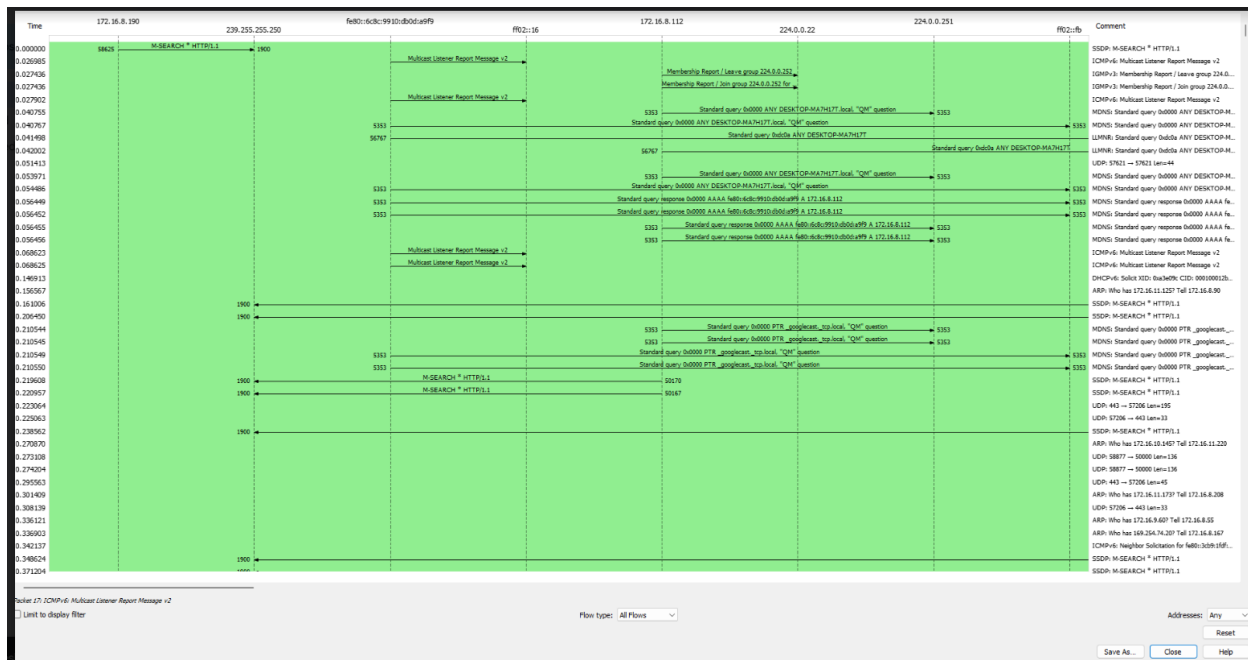
- Select Local Area Connection in Wireshark.
- Go to capture  option
- Select stop capture automatically after 100 packets.
- Then click Start capture.
- Search HTTP packets in the search bar.
- Save the packets.

Output

Id.	Time	Source	Destination	Protocol	Length	Info
614	7.685024	172.16.8.184	34.104.35.123	HTTP	520	GET /edgedl/diffgen-puffin/lmelglejhemejginpboagddgdfbepgmp/1.54491a53303afa6612e...
617	7.698858	34.104.35.123	172.16.8.184	HTTP	731	HTTP/1.1 416 Requested range not satisfiable
618	7.700353	172.16.8.184	34.104.35.123	HTTP	500	HEAD /edgedl/diffgen-puffin/lmelglejhemejginpboagddgdfbepgmp/1.54491a53303afa6612e...
619	7.709986	34.104.35.123	172.16.8.184	HTTP	667	HTTP/1.1 200 OK
624	7.742844	172.16.8.184	34.104.35.123	HTTP	520	GET /edgedl/diffgen-puffin/lmelglejhemejginpboagddgdfbepgmp/1.54491a53303afa6612e...
626	7.752652	34.104.35.123	172.16.8.184	HTTP	731	HTTP/1.1 416 Requested range not satisfiable
627	7.754181	172.16.8.184	34.104.35.123	HTTP	500	HEAD /edgedl/diffgen-puffin/lmelglejhemejginpboagddgdfbepgmp/1.54491a53303afa6612e...
630	7.764711	34.104.35.123	172.16.8.184	HTTP	706	HTTP/1.1 200 OK
634	7.790436	172.16.8.184	34.104.35.123	HTTP	520	GET /edgedl/diffgen-puffin/lmelglejhemejginpboagddgdfbepgmp/1.54491a53303afa6612e...
635	7.799687	34.104.35.123	172.16.8.184	HTTP	731	HTTP/1.1 416 Requested range not satisfiable
636	7.801361	172.16.8.184	34.104.35.123	HTTP	500	HEAD /edgedl/diffgen-puffin/lmelglejhemejginpboagddgdfbepgmp/1.54491a53303afa6612e...
637	7.809151	34.104.35.123	172.16.8.184	HTTP	667	HTTP/1.1 200 OK
639	7.838248	172.16.8.184	34.104.35.123	HTTP	520	GET /edgedl/diffgen-puffin/lmelglejhemejginpboagddgdfbepgmp/1.54491a53303afa6612e...
642	7.852555	34.104.35.123	172.16.8.184	HTTP	692	HTTP/1.1 416 Requested range not satisfiable
643	7.854134	172.16.8.184	34.104.35.123	HTTP	500	HEAD /edgedl/diffgen-puffin/lmelglejhemejginpboagddgdfbepgmp/1.54491a53303afa6612e...
645	7.871249	34.104.35.123	172.16.8.184	HTTP	706	HTTP/1.1 200 OK
648	7.901837	172.16.8.184	34.104.35.123	HTTP	520	GET /edgedl/diffgen-puffin/lmelglejhemejginpboagddgdfbepgmp/1.54491a53303afa6612e...
649	7.912361	34.104.35.123	172.16.8.184	HTTP	731	HTTP/1.1 416 Requested range not satisfiable
650	7.914442	172.16.8.184	34.104.35.123	HTTP	500	HEAD /edgedl/diffgen-puffin/lmelglejhemejginpboagddgdfbepgmp/1.54491a53303afa6612e...
651	7.922388	34.104.35.123	172.16.8.184	HTTP	667	HTTP/1.1 200 OK
652	7.949279	172.16.8.184	34.104.35.123	HTTP	520	GET /edgedl/diffgen-puffin/lmelglejhemejginpboagddgdfbepgmp/1.54491a53303afa6612e...
654	7.961780	34.104.35.123	172.16.8.184	HTTP	731	HTTP/1.1 416 Requested range not satisfiable
655	7.963277	172.16.8.184	34.104.35.123	HTTP	500	HEAD /edgedl/diffgen-puffin/lmelglejhemejginpboagddgdfbepgmp/1.54491a53303afa6612e...
658	7.973876	34.104.35.123	172.16.8.184	HTTP	706	HTTP/1.1 200 OK
5969	68.003432	172.16.8.184	34.104.35.123	HTTP	520	GET /edgedl/diffgen-puffin/lmelglejhemejginpboagddgdfbepgmp/1.54491a53303afa6612e...
5975	68.021813	34.104.35.123	172.16.8.184	HTTP	692	HTTP/1.1 416 Requested range not satisfiable
5977	68.022279	172.16.8.184	34.104.35.123	HTTP	500	HEAD /edgedl/diffgen-puffin/lmelglejhemejginpboagddgdfbepgmp/1.54491a53303afa6612e...
5982	68.037182	34.104.35.123	172.16.8.184	HTTP	706	HTTP/1.1 200 OK
6000	68.060979	172.16.8.184	34.104.35.123	HTTP	520	GET /edgedl/diffgen-puffin/lmelglejhemejginpboagddgdfbepgmp/1.54491a53303afa6612e...
6009	68.075015	34.104.35.123	172.16.8.184	HTTP	731	HTTP/1.1 416 Requested range not satisfiable
6010	68.075735	172.16.8.184	34.104.35.123	HTTP	500	HEAD /edgedl/diffgen-puffin/lmelglejhemejginpboagddgdfbepgmp/1.54491a53303afa6612e...
6012	68.095897	34.104.35.123	172.16.8.184	HTTP	706	HTTP/1.1 200 OK
6016	68.113543	172.16.8.184	34.104.35.123	HTTP	520	GET /edgedl/diffgen-puffin/lmelglejhemejginpboagddgdfbepgmp/1.54491a53303afa6612e...
6020	68.127351	34.104.35.123	172.16.8.184	HTTP	692	HTTP/1.1 416 Requested range not satisfiable
6022	68.128754	172.16.8.184	34.104.35.123	HTTP	500	HEAD /edgedl/diffgen-puffin/lmelglejhemejginpboagddgdfbepgmp/1.54491a53303afa6612e...
6026	68.147978	34.104.35.123	172.16.8.184	HTTP	706	HTTP/1.1 200 OK
6027	68.165225	172.16.8.184	34.104.35.123	HTTP	520	GET /edgedl/diffgen-puffin/lmelglejhemejginpboagddgdfbepgmp/1.54491a53303afa6612e...
6031	68.178231	34.104.35.123	172.16.8.184	HTTP	692	HTTP/1.1 416 Requested range not satisfiable
6032	68.179227	172.16.8.184	34.104.35.123	HTTP	500	HEAD /edgedl/diffgen-puffin/lmelglejhemejginpboagddgdfbepgmp/1.54491a53303afa6612e...
6033	68.191504	34.104.35.123	172.16.8.184	HTTP	667	HTTP/1.1 200 OK
6036	68.212702	172.16.8.184	34.104.35.123	HTTP	520	GET /edgedl/diffgen-puffin/lmelglejhemejginpboagddgdfbepgmp/1.54491a53303afa6612e...
6037	68.221863	34.104.35.123	172.16.8.184	HTTP	731	HTTP/1.1 416 Requested range not satisfiable
6038	68.222707	172.16.8.184	34.104.35.123	HTTP	500	HEAD /edgedl/diffgen-puffin/lmelglejhemejginpboagddgdfbepgmp/1.54491a53303afa6612e...
6040	68.232365	34.104.35.123	172.16.8.184	HTTP	667	HTTP/1.1 200 OK
6047	68.260625	172.16.8.184	34.104.35.123	HTTP	520	GET /edgedl/diffgen-puffin/lmelglejhemejginpboagddgdfbepgmp/1.54491a53303afa6612e...
6048	68.269573	34.104.35.123	172.16.8.184	HTTP	692	HTTP/1.1 416 Requested range not satisfiable
6049	68.270838	172.16.8.184	34.104.35.123	HTTP	500	HEAD /edgedl/diffgen-puffin/lmelglejhemejginpboagddgdfbepgmp/1.54491a53303afa6612e...
6050	68.282851	34.104.35.123	172.16.8.184	HTTP	706	HTTP/1.1 200 OK
13471	128.310870	172.16.8.184	34.104.35.123	HTTP	520	GET /edgedl/diffgen-puffin/lmelglejhemejginpboagddgdfbepgmp/1.54491a53303afa6612e...
13475	128.326936	34.104.35.123	172.16.8.184	HTTP	731	HTTP/1.1 416 Requested range not satisfiable

Inspecting the packets





6. Create a Filter to display only IP/ICMP packets and inspect the packets.

Procedure

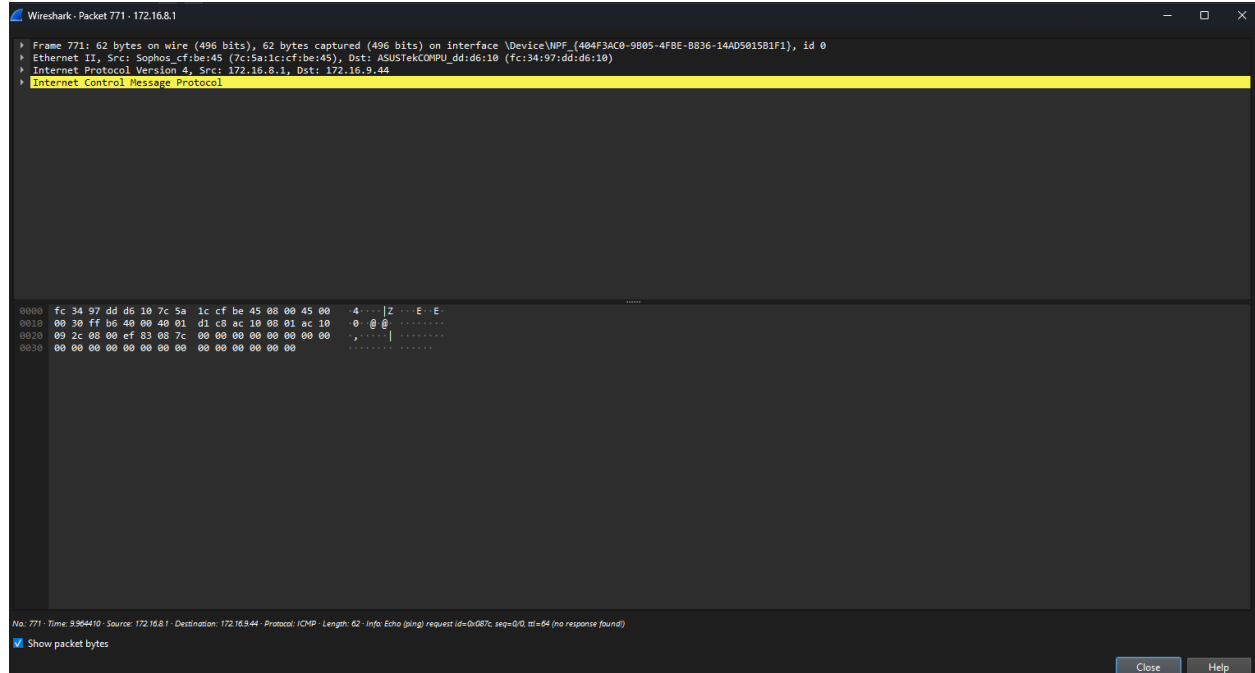
- Select Local Area Connection in Wireshark.
- Go to capture □ option
- Select stop capture automatically after 100 packets.
- Then click Start capture.
- Search ICMP/IP packets in search bar.
- Save the packets

Output:icmp

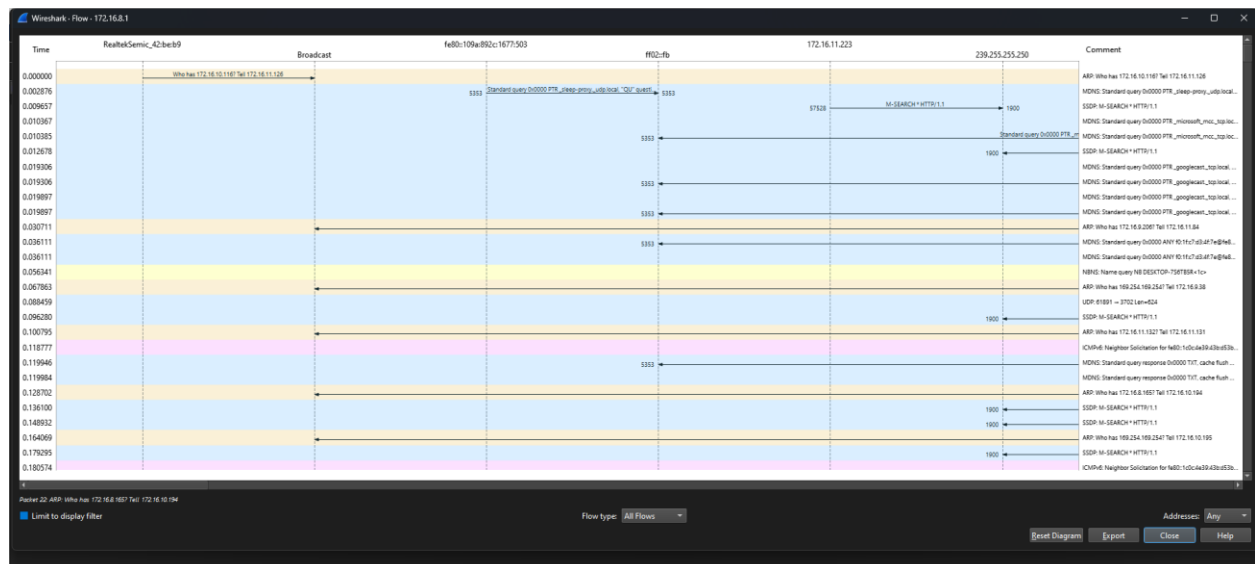
icmp					
No.	Time	Source	Destination	Protocol	Length Info
771	9.964410	172.16.8.1	172.16.9.44	ICMP	62 Echo (ping) request id=0x087c, seq=0/0, ttl=64 (no response found!)

Inspecting the packets

CS23532-COMPUTER NETWORKS



Flow Graph output



Output:ip

No.	Time	Source	Destination	Protocol	Length	Info
8	0.850881	142.250.182.142	172.16.0.185	UDP	68	443 → 63346 Len=26
9	0.871925	142.250.182.142	172.16.0.185	UDP	148	443 → 63346 Len=106
10	0.872709	142.250.182.142	172.16.0.185	UDP	262	443 → 63346 Len=230
11	0.872920	172.16.11.126	239.255.255.250	SSDP	217	N-SEARCH * HTTP/1.1
12	0.873130	172.16.0.185	142.250.182.142	UDP	81	63346 → 443 Len=39
13	0.874281	172.16.9.128	239.255.255.250	SSDP	216	N-SEARCH * HTTP/1.1
14	0.877033	142.250.182.142	172.16.0.185	UDP	68	443 → 63346 Len=26
18	0.180149	172.16.0.232	239.255.255.250	SSDP	217	N-SEARCH * HTTP/1.1
19	0.209299	172.16.11.129	239.255.255.250	SSDP	216	N-SEARCH * HTTP/1.1
21	0.262665	172.16.11.239	239.255.255.250	SSDP	216	N-SEARCH * HTTP/1.1
22	0.266689	172.16.8.226	239.255.255.250	SSDP	218	N-SEARCH * HTTP/1.1
23	0.266689	172.16.11.83	239.255.255.250	SSDP	216	N-SEARCH * HTTP/1.1
24	0.269077	172.16.8.231	172.16.11.255	NRPS	52	Name query 00 L0P0P-F0W0D1E1c<
25	0.279369	172.16.8.185	142.250.182.142	UDP	71	63346 → 443 Len=29
26	0.284226	142.250.182.142	172.16.0.185	UDP	68	443 → 63346 Len=26
27	0.316513	172.16.8.137	239.255.255.250	SSDP	216	N-SEARCH * HTTP/1.1
29	0.342050	172.16.8.169	239.255.255.250	SSDP	217	N-SEARCH * HTTP/1.1
30	0.353355	172.16.9.89	239.255.255.250	SSDP	217	N-SEARCH * HTTP/1.1
31	0.360149	172.16.10.190	239.255.255.250	SSDP	216	N-SEARCH * HTTP/1.1
32	0.367863	172.16.11.4	239.255.255.250	SSDP	216	N-SEARCH * HTTP/1.1
33	0.419262	172.16.9.182	239.255.255.250	SSDP	216	N-SEARCH * HTTP/1.1
36	0.448731	172.16.10.196	239.255.255.250	SSDP	217	N-SEARCH * HTTP/1.1
37	0.442081	172.16.9.219	239.255.255.250	SSDP	216	N-SEARCH * HTTP/1.1
38	0.447340	172.16.8.32	239.255.255.250	SSDP	217	N-SEARCH * HTTP/1.1
39	0.500999	172.16.8.185	142.250.182.142	UDP	71	63346 → 443 Len=29
41	0.509941	142.250.182.142	172.16.0.185	UDP	68	443 → 63346 Len=26
44	0.543334	172.16.10.43	239.255.255.250	SSDP	216	N-SEARCH * HTTP/1.1
47	0.632959	172.16.11.138	239.255.255.250	SSDP	217	N-SEARCH * HTTP/1.1
48	0.626380	172.16.10.172	239.255.255.250	SSDP	212	N-SEARCH * HTTP/1.1
49	0.627654	172.16.8.163	172.16.11.255	NRPS	92	Name query 00 DESKTOP-RK7DC1K1c<
50	0.649554	172.16.8.16	239.255.255.250	SSDP	217	N-SEARCH * HTTP/1.1
51	0.649162	172.16.9.171	239.255.255.250	SSDP	217	N-SEARCH * HTTP/1.1
52	0.651086	172.16.0.112	239.255.255.250	SSDP	216	N-SEARCH * HTTP/1.1
53	0.683616	172.16.8.112	239.255.255.250	SSDP	217	N-SEARCH * HTTP/1.1
54	0.696278	172.16.8.178	239.255.255.250	SSDP	217	N-SEARCH * HTTP/1.1
55	0.696362	172.16.9.6	239.255.255.250	SSDP	216	N-SEARCH * HTTP/1.1
56	0.707180	172.16.8.185	142.250.182.142	UDP	71	63346 → 443 Len=29
57	0.712836	142.250.182.142	172.16.0.185	UDP	68	443 → 63346 Len=26
59	0.721196	172.16.8.238	239.255.255.250	SSDP	216	N-SEARCH * HTTP/1.1
60	0.737464	172.16.10.219	224.0.0.252	LUNWR	70	Standard query 0xc6f1 A HDC1817444
62	0.739562	172.16.10.219	224.0.0.252	LUNWR	70	Standard query 0xc6f7 AAAA HDC1817444
64	0.739707	172.16.9.75	239.255.255.250	SSDP	216	N-SEARCH * HTTP/1.1
65	0.750119	172.16.10.219	224.0.0.252	LUNWR	70	Standard query 0x4662 A HDC1817444
67	0.751187	172.16.10.219	224.0.0.252	LUNWR	70	Standard query 0x5666 AAAA HDC1817444
69	0.764152	172.16.10.219	172.16.11.255	BROADCAST	220	Request Announcement VISFEL2
70	0.769628	172.16.8.218	224.0.0.251	PINGS	220	Standard query response 0x0000 PTR Jodes-ZBook-15._dovnc_tcp.local SRV 0 7680 Jodes-ZBook-15.local TXT
72	0.771823	172.16.8.218	224.0.0.251	PINGS	82	Standard query 0x0000 ANY Jodes-ZBook-15._dovnc_tcp.local, "QM" question
74	0.775339	172.16.9.174	172.16.11.255	BROADCAST	243	Local Master Announcement HDC1817444, Workstation, Server, NT Workstation, Potential Browser, Backup Browser, Master Browser
76	0.786882	172.16.10.219	224.0.0.252	LUNWR	70	Standard query 0xc244 A HDC1817444
76	0.786882	172.16.10.219	224.0.0.252	LUNWR	70	Standard query 0x7645 AAAA HDC1817444
77	0.786882	172.16.10.219	224.0.0.252	LUNWR	70	Standard query 0xc572 A HDC1817444
78	0.786882	172.16.10.219	224.0.0.252	LUNWR	70	Standard query 0xc791 AAAA HDC1817444
79	0.786882	172.16.10.219	224.0.0.252	LUNWR	70	Standard query 0x4816 A HDC1817444
80	0.786882	172.16.10.219	224.0.0.252	LUNWR	70	Standard query 0xc41d AAAA HDC1817444
83	0.786964	172.16.8.238	239.255.255.250	SSDP	217	N-SEARCH * HTTP/1.1
88	0.786964	172.16.10.219	172.16.11.255	BROADCAST	220	Request Announcement VISFEL2

Inspecting the packets

Wireshark - Packet 47 - 172.16.8.1

Frame 47: 217 bytes on wire (1736 bits), 217 bytes captured (1736 bits) on interface \Device\NPF{404F3AC0-9B05-4FBE-B836-14A05015B1F1}, id 0

Ethernet II, Src: 0a:0e:b1:a1:01:9e (0a:0e:b1:a1:01:9e), Dst: 01:00:5e:7f:ff:fa (01:00:5e:7f:ff:fa)

Internet Protocol Version 4, Src: 172.16.11.138, Dst: 239.255.255.250

User Datagram Protocol, Src Port: 59614, Dst Port: 1900

Simple Service Discovery Protocol

```

0000  01 00 5e 7f ff fa 0a e0 af ca 01 9e 08 00 45 00  ..A.....E
0010  00 cb c9 88 00 00 01 11 48 05 ac 10 0b 8a ef ff  ....H.....
0020  ff fa e8 de 07 6c 00 b7 e1 fe 4d 2d 53 45 41 52  ...I...N-SEAR
0030  43 45 20 2a 20 42 54 54 50 2f 31 2e 31 0d 0a 4b  CH * HTTP/1.1 N
0040  4f 53 54 3a 20 32 33 39 2e 32 35 35 2e 32 35 35  OST: 239.255.255
0050  2e 32 35 30 3a 31 39 30 30 0d 0a 4d 41 4e 3a 20  .250:190 0 MAN:
0060  22 73 73 64 70 3a 64 69 73 6f 76 65 72 22 0d  "ssdp:discover"
0070  0a 4d 50 3a 20 31 0d 0a 63 64 3a 20 75 72 6e 3a  PKG: 1 ST: urn:
0080  64 69 61 6c 2d 6d 75 6c 74 69 73 63 72 65 65 6e  dial-multiscreen
0090  2d 6f 72 67 3a 73 65 72 76 69 63 65 3a 64 69 61  -org:serviceid:
00a0  6c 3a 31 0d 0a 55 53 45 52 2d 41 47 45 4e 54 3a  I:1: USER-AGENT:
00b0  20 4d 69 63 72 64 72 6f 66 74 20 45 64 67 65 2f  Microsof Edge/
00c0  31 37 2e 30 2e 32 36 35 31 2e 38 36 20 57 69  127.0.26.51.86 W
00d0  6e 64 6f 77 73 0d 0a 0d 0a  ndows

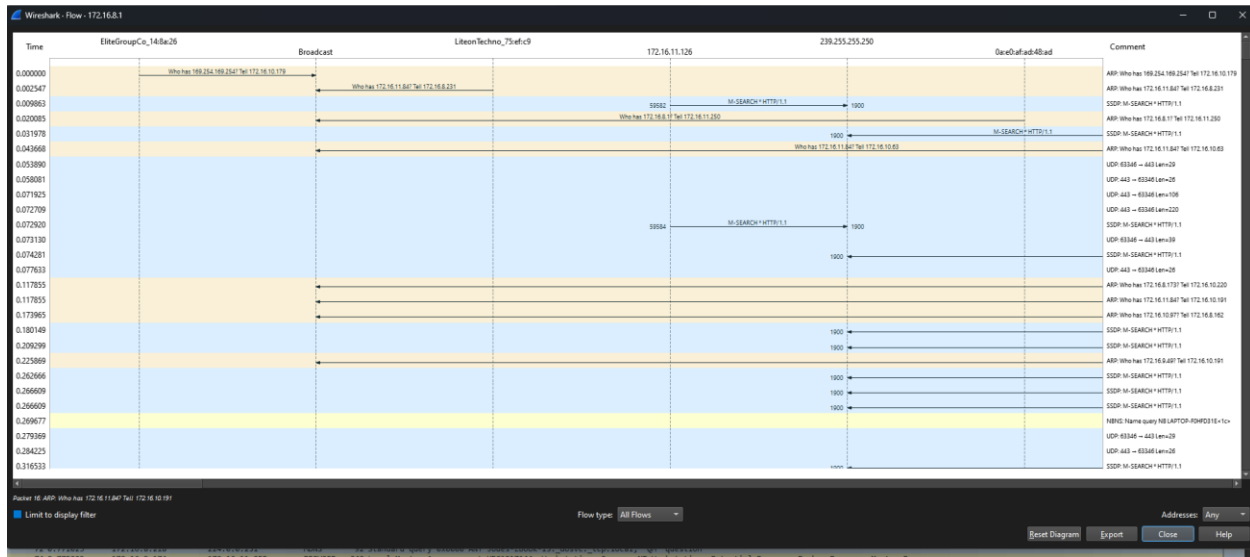
```

No. 47: Time: 0.619969 Source: 172.16.11.138 Destination: 239.255.255.250 Protocol: SSDP Length: 217 Info: N-SEARCH * HTTP/1.1

Show packet bytes

Close Help

Flow chart output



7.Create a Filter to display only DHCP packets and inspect the packets.

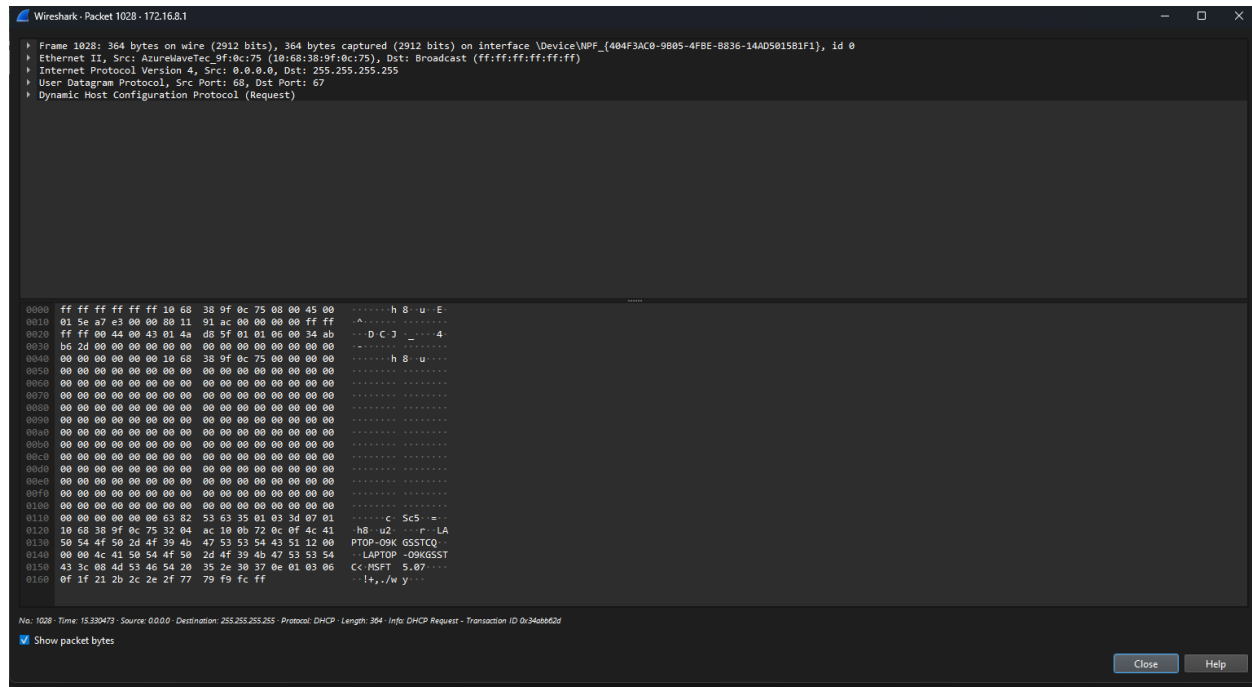
Procedure

- Select Local Area Connection in Wireshark.
- Go to capture option
- Select stop capture automatically after 100 packets.
- Then click Start capture.
- Search DHCP packets in search bar.
- Save the packets

Output

No.	Time	Source	Destination	Protocol	Length	Info
770	9.964409	0.0.0.0	255.255.255.255	DHCP	340	DHCP Discover - Transaction ID 0xf19cf3d1
852	10.953009	0.0.0.0	255.255.255.255	DHCP	350	DHCP Request - Transaction ID 0xf19cf3d1
1023	15.330473	0.0.0.0	255.255.255.255	DHCP	364	DHCP Request - Transaction ID 0x34abb62d

Inspecting the packets



Result:

Network traffic on TCP / UDP / IP / HTTP / ARP /DHCP /ICMP /DNS using Wireshark Tool is analyzed.