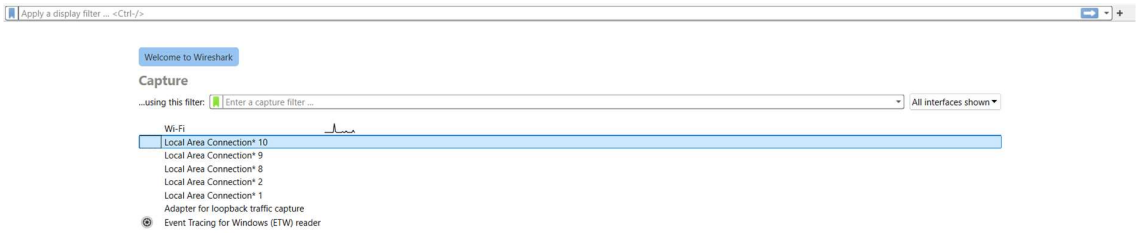
ROLL NUMBER-220701049

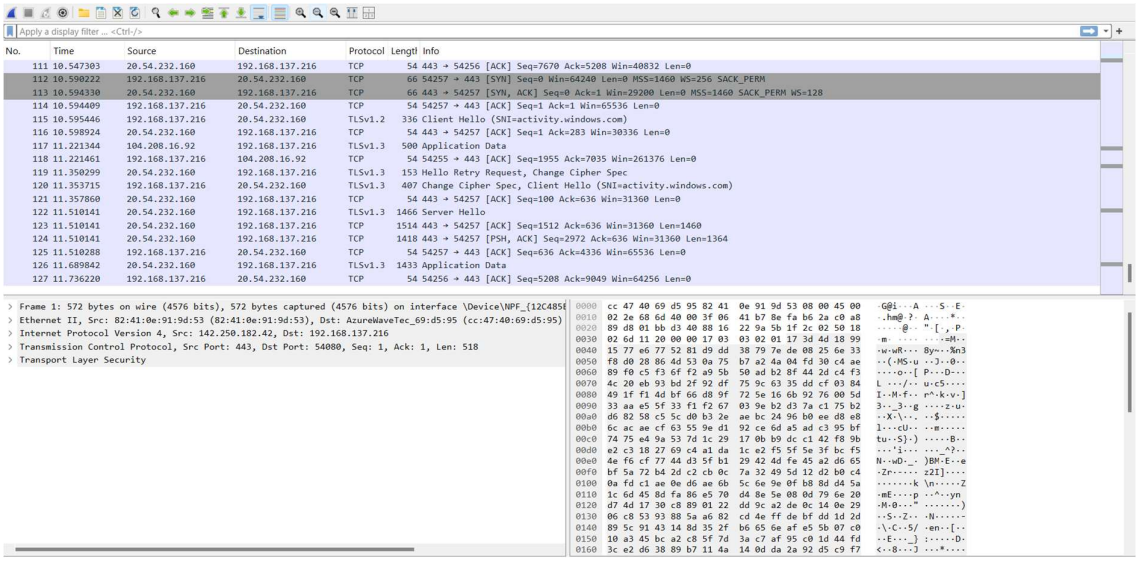
Practical 5

Aim:

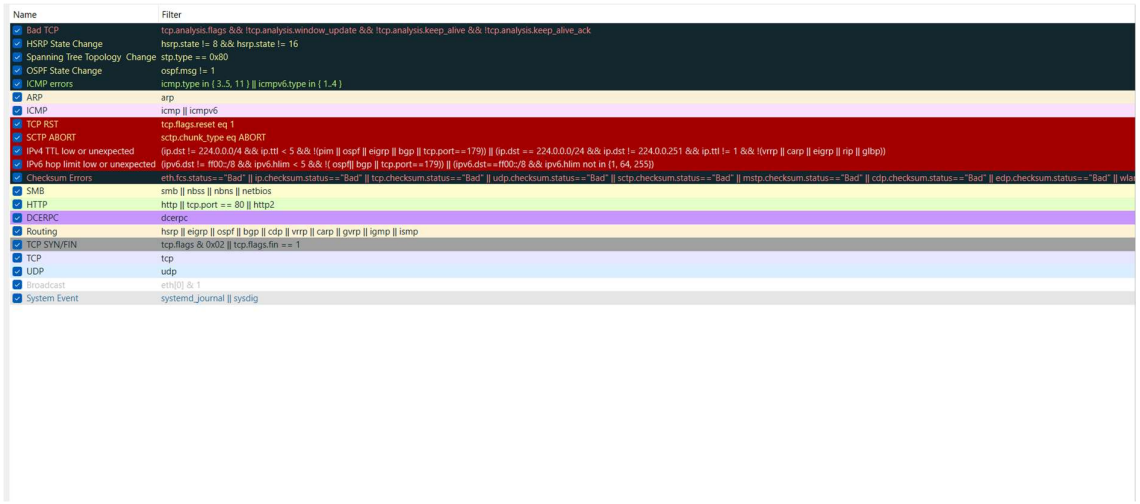
Experiments on Packet capture tool: Wireshark



Capturing Packets:

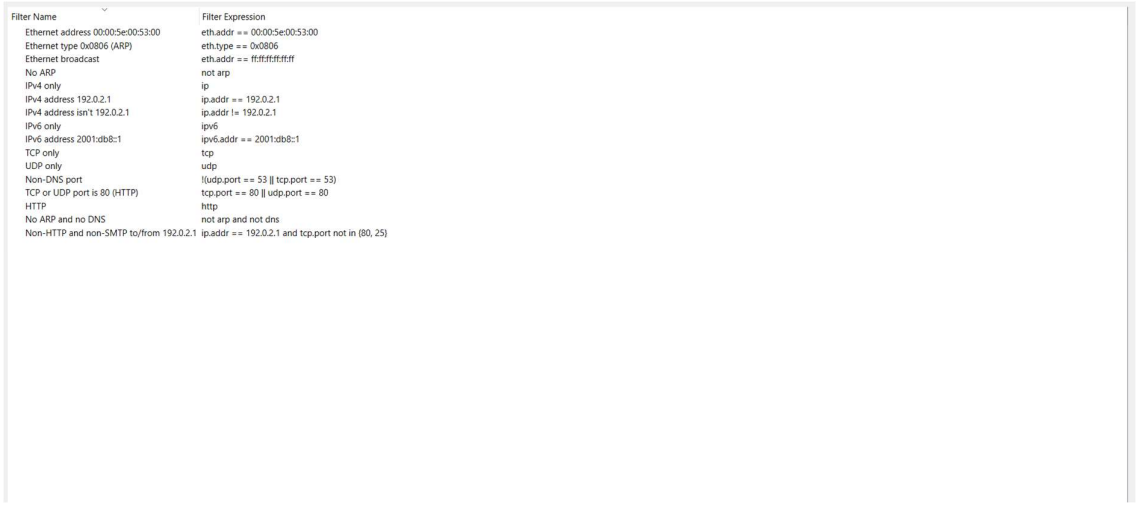


Color Coding:



Name	Filter
Bad TCP	tcp.analysis.flags && !tcp.analysis.window_update && !tcp.analysis.keep_alive && !tcp.analysis.keep_alive_ack
HSRP State Change	hsrp.state != 8 && hsrp.state != 16
Spanning Tree Topology Change	stp.type == 0x80
OSPF State Change	ospf.msg != 1
ICMP errors	icmp.type in { 3..5, 11 } || icmpv6.type in { 1..4 }
ARP	arp
ICMP	icmp || icmpv6
TCP RST	tcp.flags.reset eq 1
SCTP ABORT	sctp.chunk_type eq ABORT
IPv4 TTL low or unexpected	(ip.dst != 224.0.0.0/4 && ip.ttl < 5 && !(pim || ospf || eigrp || bgp || tcp.port==179)) || (ip.dst == 224.0.0.0/24 && ip.dst != 224.0.0.251 && ip.ttl != 1 && !(vrrp || carp || eigrp || rip || glbp))
IPv6 hop limit low or unexpected	(ipv6.dst != ff00::/8 && ipv6.hlim < 5 && !(ospf|| bgp || tcp.port==179)) || (ipv6.dst==ff00::/8 && ipv6.hlim not in {1, 64, 255})
Checksum Errors	eth.fcs.status=="Bad" || ip.checksum.status=="Bad" || tcp.checksum.status=="Bad" || udp.checksum.status=="Bad" || sctp.checksum.status=="Bad" || mstp.checksum.status=="Bad" || cdp.checksum.status=="Bad" || edp.checksum.status=="Bad" || wla
SMB	smb || nbss || nbns || netbios
HTTP	http || tcp.port == 80 || http2
DCERPC	dcerpc
Routing	hsrp || eigrp || ospf || bgp || cdp || vrrp || carp || gvrp || igmp || ismp
TCP SYN/FIN	tcp.flags & 0x02 || tcp.flags.fin == 1
TCP	tcp
UDP	udp
Broadcast	eth[0] & 1
System Event	systemd_journal || sysdig

Display Filters:



Filter Name	Filter Expression
Ethernet address 00:00:5e:00:53:00	eth.addr == 00:00:5e:00:53:00
Ethernet type 0x0806 (ARP)	eth.type == 0x0806
Ethernet broadcast	eth.addr == ff:ff:ff:ff:ff:ff
No ARP	not arp
IPv4 only	ip
IPv4 address 192.0.2.1	ip.addr == 192.0.2.1
IPv4 address isn't 192.0.2.1	ip.addr != 192.0.2.1
IPv6 only	ipv6
IPv6 address 2001:db8::1	ipv6.addr == 2001:db8::1
TCP only	tcp
UDP only	udp
Non-DNS port	!(udp.port == 53 || tcp.port == 53)
TCP or UDP port is 80 (HTTP)	tcp.port == 80 || udp.port == 80
HTTP	http
No ARP and no DNS	not arp and not dns
Non-HTTP and non-SMTP to/from 192.0.2.1	ip.addr == 192.0.2.1 and tcp.port not in {80, 25}

1. 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

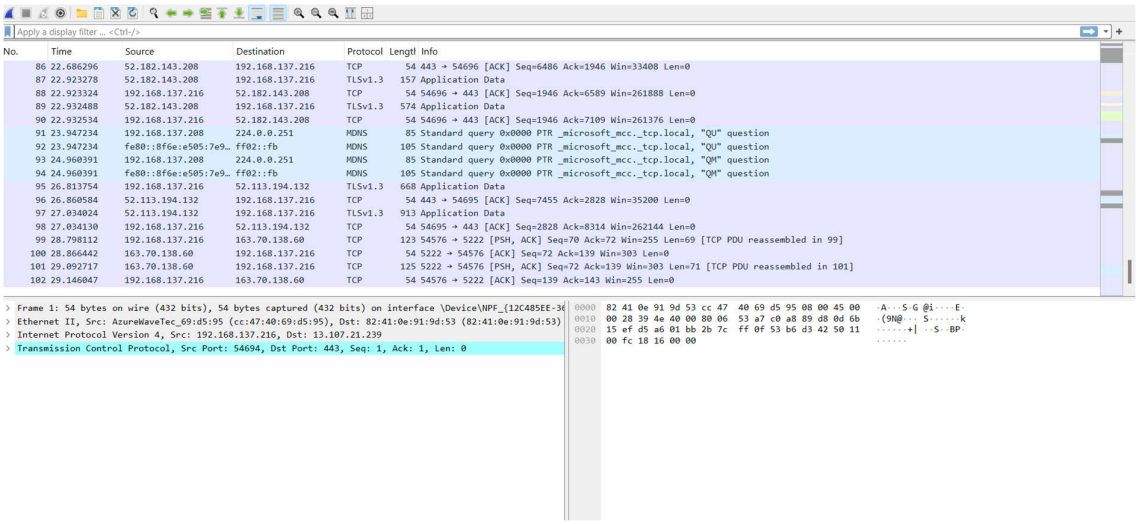
Select stop capture automatically after 100 packets.

Then click Start capture.

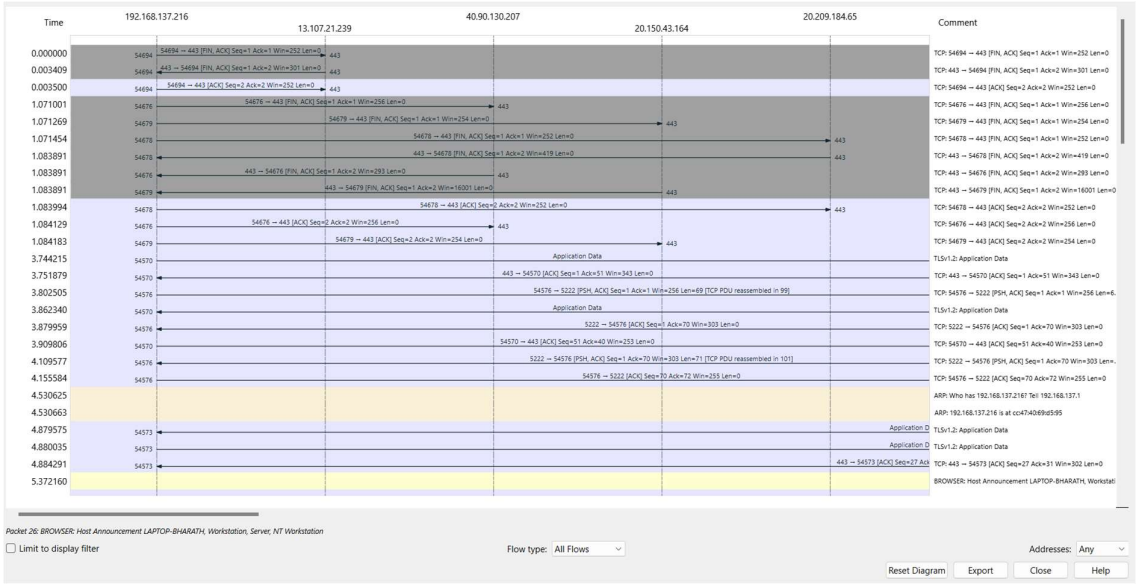
Search TCP packets in search bar.

To see flow graph click Statistics →Flow graph.

Save the packets.



Flowgraph:



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

Procedure

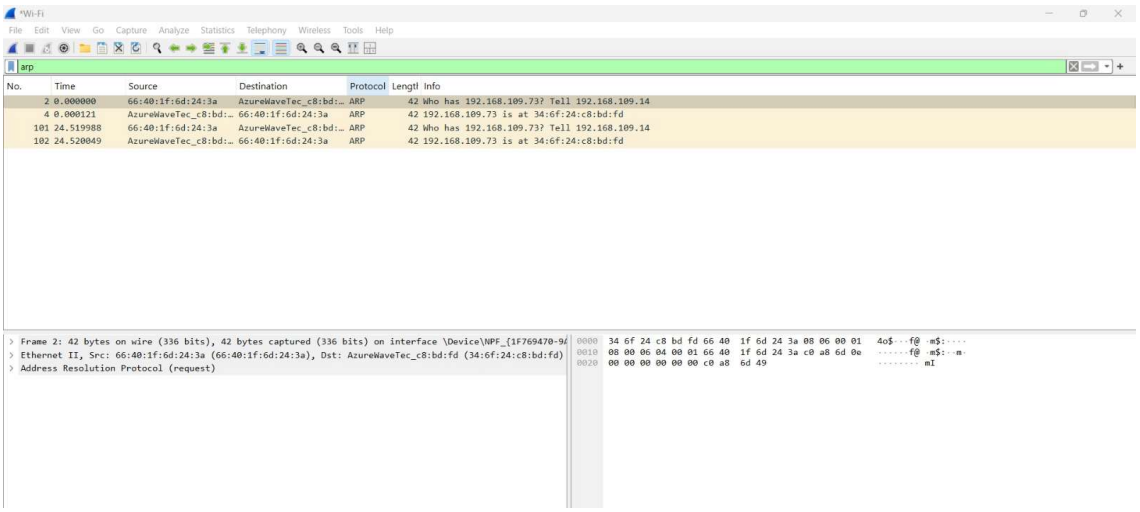
Go to capture →option

Select stop capture automatically after 100 packets.

Then click Start capture.

Search ARP packets in search bar.

Save the packets.



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

Procedure

Go to capture→option

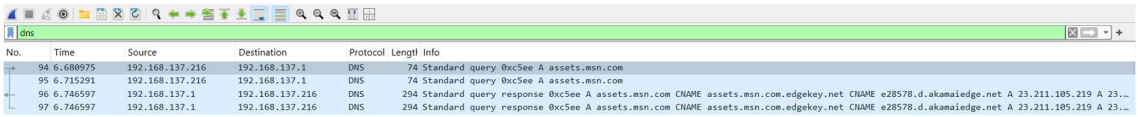
Select stop capture automatically after 100 packets.

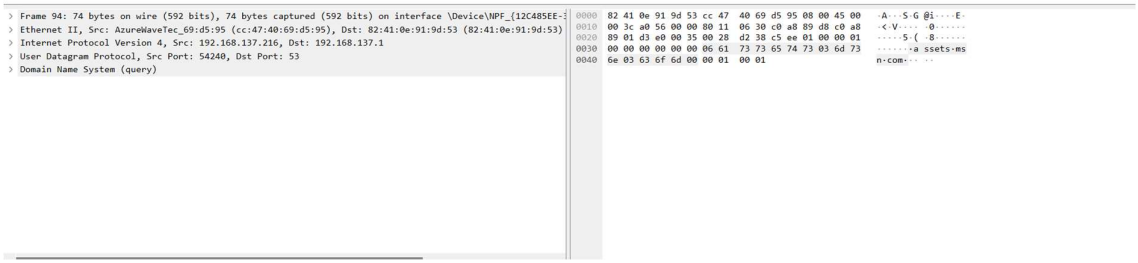
Then click Start capture.

Search DNS packets in search bar.

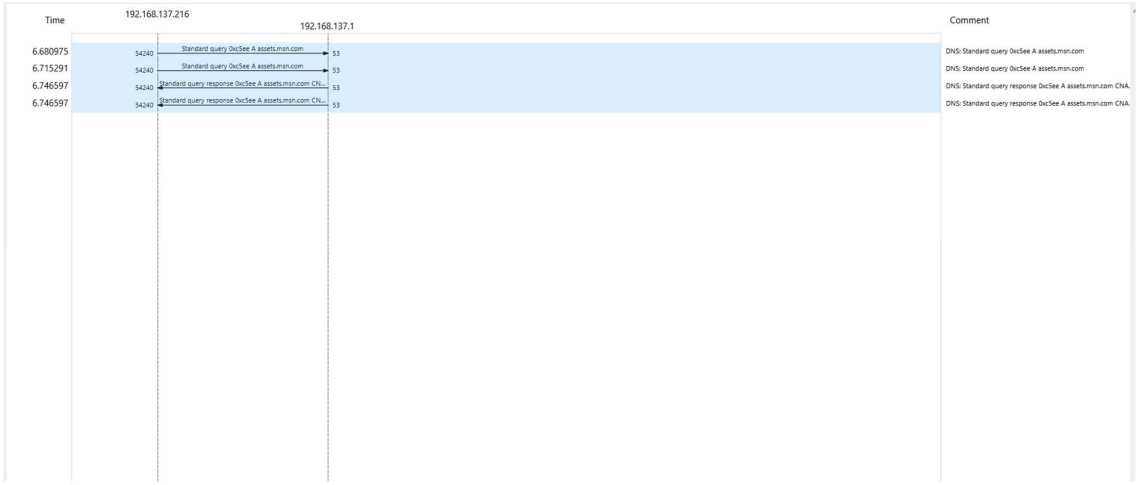
To see flow graph click Statistics→Flow graph.

Save the packets.





Flowgraph:



4. 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