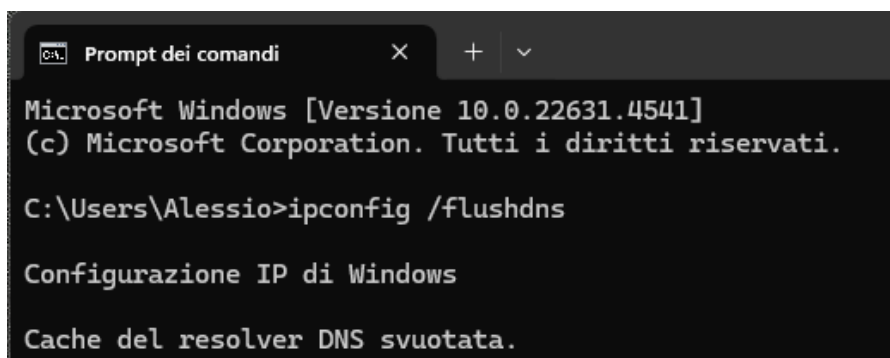


Esplorazione del Traffico DNS

- Catturare il traffico DNS
- Esplorare il traffico delle query DNS
- Esplorare il traffico delle risposte DNS

Capture DNS traffic

- In Windows, enter `ipconfig /flushdns` in Command Prompt.



```
Prompt dei comandi

Microsoft Windows [Versione 10.0.22631.4541]
(c) Microsoft Corporation. Tutti i diritti riservati.

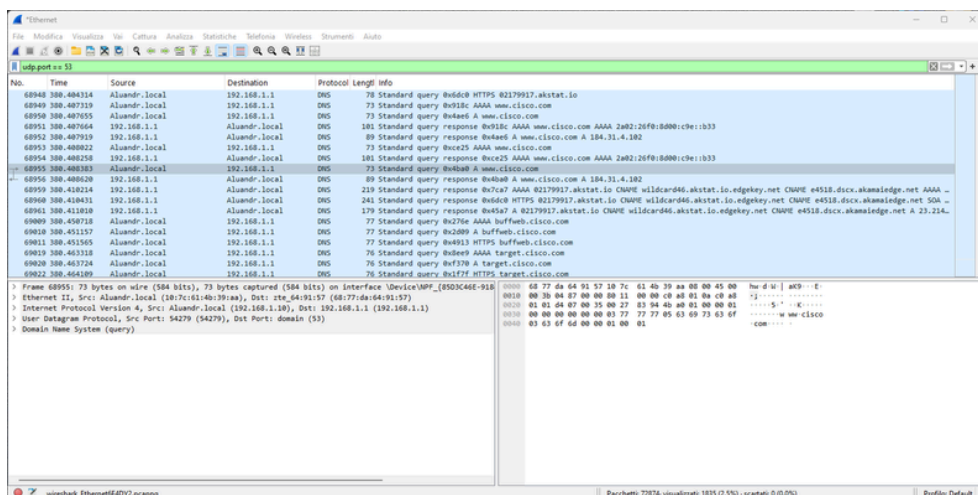
C:\Users\Alessio>ipconfig /flushdns

Configurazione IP di Windows

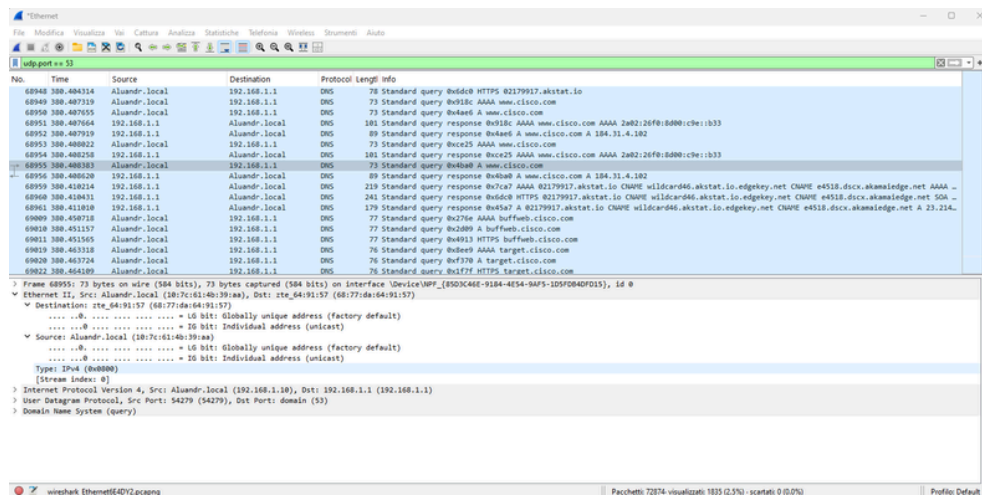
Cache del resolver DNS svuotata.
```

Esplorare il traffico delle query DNS

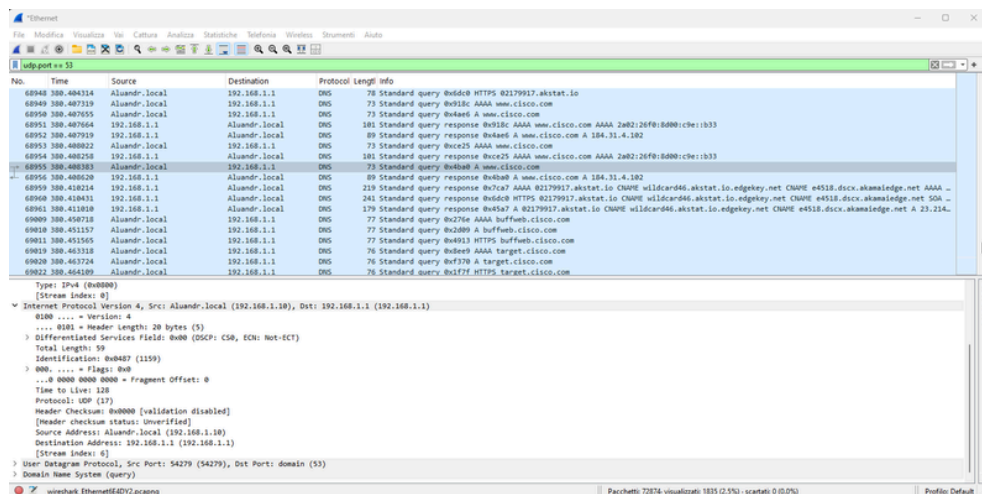
- Enter the domain name of a website. The domain name `www.cisco.com`
- Click Stop capturing packets to stop the Wireshark capture
- Observe the traffic captured in the Wireshark Packet List pane. Enter **udp.port == 53** in the filter box and click the arrow (or press enter) to display only DNS packets.



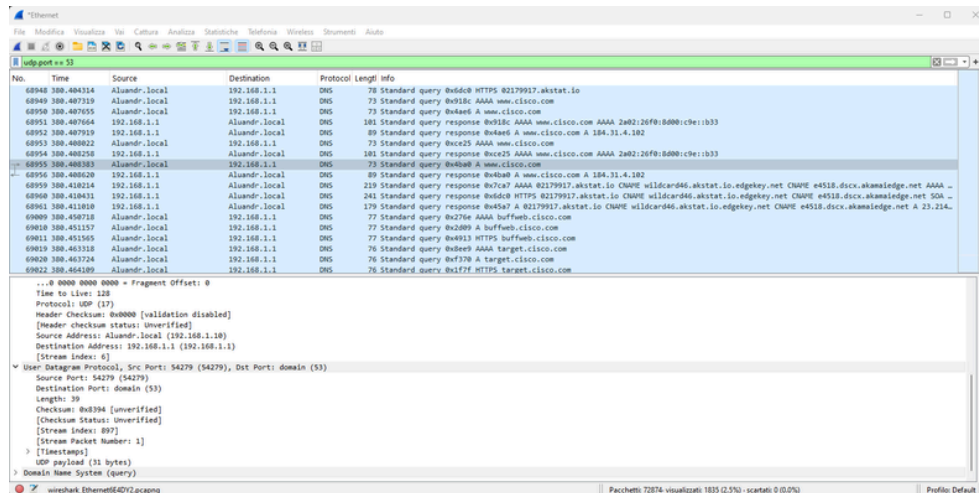
- Expand Ethernet II to view the details. Observe the source and destination fields.



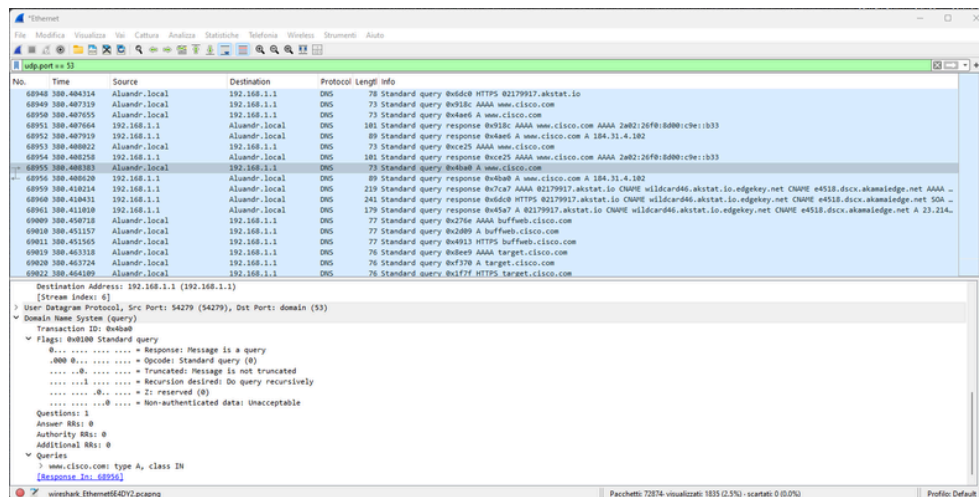
- Expand Internet Protocol Version 4. Observe the source and destination IPv4 addresses.



- Expand the User Datagram Protocol. Observe the source and destination ports.



- Expand Domain Name System (query) in the Packet Details pane. Then expand the Flags and Queries.



Esplorare il traffico delle risposte DNS

- Select the corresponding response DNS packet has Standard query response and A www.cisco.com in the Info column.

The screenshot shows the Wireshark interface with a packet capture of DNS traffic. The packet list pane shows a list of packets, with packet 68956 selected. The packet details pane shows the structure of the DNS response packet, including the transaction ID, flags, and the answer section which contains the IP address 184.31.4.182 for www.cisco.com.

No.	Time	Source	Destination	Protocol	Length	Info
68948	300.404314	Aluandr-local	192.168.1.1	DNS	78	Standard query 0x6dc8 HTTPS 02179917.akstat.io
68949	300.407319	Aluandr-local	192.168.1.1	DNS	73	Standard query 0x918c AAAA www.cisco.com
68950	300.407655	Aluandr-local	192.168.1.1	DNS	73	Standard query 0x4ae5 A www.cisco.com
68951	300.407664	192.168.1.1	Aluandr-local	DNS	181	Standard query response 0x918c AAAA www.cisco.com AAAA 2a02:26f0:8000:c9e::b33
68952	300.407919	192.168.1.1	Aluandr-local	DNS	89	Standard query response 0x4ae5 A www.cisco.com A 184.31.4.182
68953	300.408022	Aluandr-local	192.168.1.1	DNS	73	Standard query 0xc25 AAAA www.cisco.com
68954	300.408258	Aluandr-local	192.168.1.1	DNS	181	Standard query response 0xc25 AAAA www.cisco.com AAAA 2a02:26f0:8000:c9e::b33
68955	300.408383	Aluandr-local	192.168.1.1	DNS	73	Standard query 0x4ab8 A www.cisco.com
68956	300.408620	192.168.1.1	Aluandr-local	DNS	89	Standard query response 0x4ab8 A www.cisco.com A 184.31.4.182

Destination Address: Aluandr-local (192.168.1.10)
[Stream Index: 6]
> User Datagram Protocol, Src Port: domain (53), Dst Port: 54279 (54279)
▼ Domain Name System (response)
Transaction ID: 0x4ab8
▼ Flags: 0x0100 Standard query response, No error
1... .. Response: Message is a response
... .. Opcode: Standard query (0)
... .. Authoritative: Server is not an authority for domain
... .. Truncated: Message is not truncated
... .. Recursion desired: Do query recursively
... .. Recursion available: Server can do recursive queries
... .. Z: reserved (0)
... .. Answer authenticated: Answer/authority portion was not authenticated by the server
... .. Non-authenticated data: Unacceptable
... .. Reply code: No error (0)
Questions: 1
Answer RRs: 1
Authority RRs: 0
Additional RRs: 0
▼ Queries
> www.cisco.com: type A, class IN
▼ Answers
> www.cisco.com: type A, class IN, addr 184.31.4.182
[Request ID: 68953]
[Time: 0.000237000 seconds]

- Expand Domain Name System (response). Then expand the Flags, Queries, and Answers

The screenshot shows the Wireshark interface with the same packet capture. The packet details pane for packet 68956 is expanded to show the 'Domain Name System (response)' section. The 'Flags' section is expanded to show 'Standard query response, No error'. The 'Queries' section is expanded to show 'www.cisco.com: type A, class IN'. The 'Answers' section is expanded to show 'www.cisco.com: type A, class IN, addr 184.31.4.182'.

No.	Time	Source	Destination	Protocol	Length	Info
68948	300.404314	Aluandr-local	192.168.1.1	DNS	78	Standard query 0x6dc8 HTTPS 02179917.akstat.io
68949	300.407319	Aluandr-local	192.168.1.1	DNS	73	Standard query 0x918c AAAA www.cisco.com
68950	300.407655	Aluandr-local	192.168.1.1	DNS	73	Standard query 0x4ae5 A www.cisco.com
68951	300.407664	192.168.1.1	Aluandr-local	DNS	181	Standard query response 0x918c AAAA www.cisco.com AAAA 2a02:26f0:8000:c9e::b33
68952	300.407919	192.168.1.1	Aluandr-local	DNS	89	Standard query response 0x4ae5 A www.cisco.com A 184.31.4.182
68953	300.408022	Aluandr-local	192.168.1.1	DNS	73	Standard query 0xc25 AAAA www.cisco.com
68954	300.408258	Aluandr-local	192.168.1.1	DNS	181	Standard query response 0xc25 AAAA www.cisco.com AAAA 2a02:26f0:8000:c9e::b33
68955	300.408383	Aluandr-local	192.168.1.1	DNS	73	Standard query 0x4ab8 A www.cisco.com
68956	300.408620	192.168.1.1	Aluandr-local	DNS	89	Standard query response 0x4ab8 A www.cisco.com A 184.31.4.182

Destination Address: Aluandr-local (192.168.1.10)
[Stream Index: 6]
> User Datagram Protocol, Src Port: domain (53), Dst Port: 54279 (54279)
▼ Domain Name System (response)
Transaction ID: 0x4ab8
▼ Flags: 0x0100 Standard query response, No error
1... .. Response: Message is a response
... .. Opcode: Standard query (0)
... .. Authoritative: Server is not an authority for domain
... .. Truncated: Message is not truncated
... .. Recursion desired: Do query recursively
... .. Recursion available: Server can do recursive queries
... .. Z: reserved (0)
... .. Answer authenticated: Answer/authority portion was not authenticated by the server
... .. Non-authenticated data: Unacceptable
... .. Reply code: No error (0)
Questions: 1
Answer RRs: 1
Authority RRs: 0
Additional RRs: 0
▼ Queries
> www.cisco.com: type A, class IN
▼ Answers
> www.cisco.com: type A, class IN, addr 184.31.4.182
[Request ID: 68953]
[Time: 0.000237000 seconds]