

PROJECT : 1

DATE : 20-09-2021

TOPIC : Finding and Classifying IP address.

1. Pick 5 Websites, find its IP address, give the class of ip address it belongs.

```
C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.3.9600]
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C:\Users\user>ping mangaloreuniversity.ac.in

Pinging mangaloreuniversity.ac.in [14.139.155.118] with 32 bytes of data:
Reply from 14.139.155.118: bytes=32 time=163ms TTL=48
Reply from 14.139.155.118: bytes=32 time=155ms TTL=48
Reply from 14.139.155.118: bytes=32 time=170ms TTL=48
Reply from 14.139.155.118: bytes=32 time=144ms TTL=48

Ping statistics for 14.139.155.118:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 144ms, Maximum = 170ms, Average = 158ms

C:\Users\user>ping hackthebox.eu

Pinging hackthebox.eu [104.17.42.72] with 32 bytes of data:
Reply from 104.17.42.72: bytes=32 time=114ms TTL=53
Reply from 104.17.42.72: bytes=32 time=125ms TTL=53
Reply from 104.17.42.72: bytes=32 time=100ms TTL=53
Reply from 104.17.42.72: bytes=32 time=133ms TTL=53

Ping statistics for 104.17.42.72:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 100ms, Maximum = 133ms, Average = 118ms

C:\Users\user>ping linkedin.com

Pinging linkedin.com [13.107.42.14] with 32 bytes of data:
Reply from 13.107.42.14: bytes=32 time=63ms TTL=110
Reply from 13.107.42.14: bytes=32 time=97ms TTL=110
Reply from 13.107.42.14: bytes=32 time=127ms TTL=110
Reply from 13.107.42.14: bytes=32 time=114ms TTL=110

Ping statistics for 13.107.42.14:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 63ms, Maximum = 127ms, Average = 100ms

C:\Users\user>ping github.com

Pinging github.com [13.234.210.38] with 32 bytes of data:
Reply from 13.234.210.38: bytes=32 time=80ms TTL=44
Reply from 13.234.210.38: bytes=32 time=116ms TTL=44
Reply from 13.234.210.38: bytes=32 time=104ms TTL=44
Reply from 13.234.210.38: bytes=32 time=120ms TTL=44

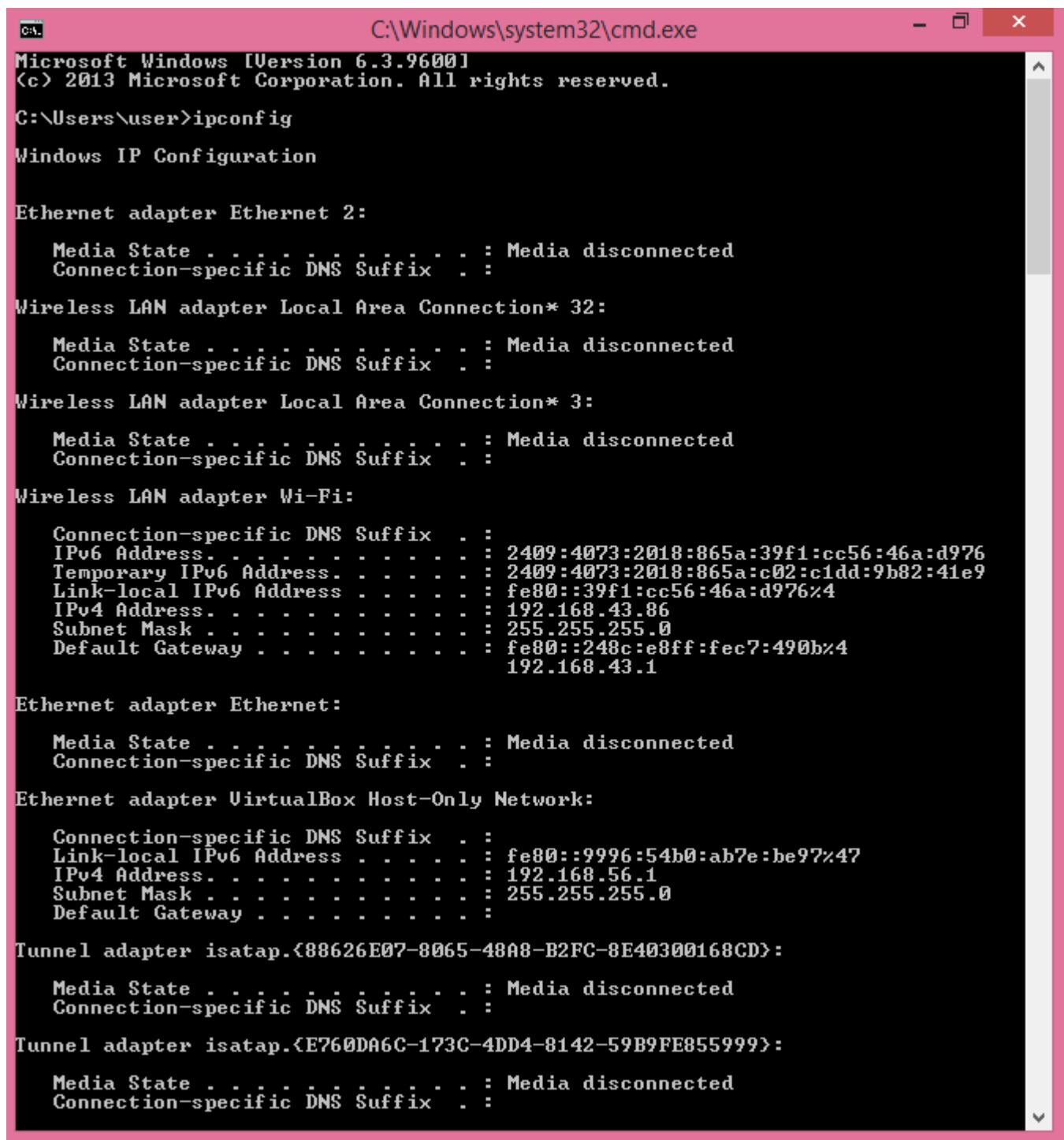
Ping statistics for 13.234.210.38:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 80ms, Maximum = 120ms, Average = 105ms

C:\Users\user>
```

CLASS	USAGE	START ADDRESS	END ADDRESS
A	Consumer	0.0.0.0	127.255.255.255
B	Consumer	128.0.0.0	191.255.255.255
C	Consumer	192.0.0.0	223.255.255.255
D	Multicast	224.0.0.0	239.255.255.255
E	Reserved	240.0.0.0	255.255.255.255

Website	IP address	CLASS
mangaloreuniversity.ac.in	14.139.155.118	A
hackthebox.eu	104.17.42.72	A
linkedin.com	13.107.42.14	A
github.com	13.234.210.38	A

2. Check your laptop's IP address and subnet mask, define the Network portions and Host portions in the above format.



```
C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.3.9600]
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C:\Users\user>ipconfig

Windows IP Configuration

Ethernet adapter Ethernet 2:
  Media State . . . . . : Media disconnected
  Connection-specific DNS Suffix . . . . . : 

Wireless LAN adapter Local Area Connection* 32:
  Media State . . . . . : Media disconnected
  Connection-specific DNS Suffix . . . . . : 

Wireless LAN adapter Local Area Connection* 3:
  Media State . . . . . : Media disconnected
  Connection-specific DNS Suffix . . . . . : 

Wireless LAN adapter Wi-Fi:
  Connection-specific DNS Suffix . . . . . :
    IPv6 Address . . . . . : 2409:4073:2018:865a:39f1:cc56:46a:d976
    Temporary IPv6 Address . . . . . : 2409:4073:2018:865a:c02:c1dd:9b82:41e9
    Link-local IPv6 Address . . . . . : fe80::39f1:cc56:46a:d976%4
    IPv4 Address . . . . . : 192.168.43.86
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : fe80::248c:e8ff:fec7:490b%4
                               192.168.43.1

Ethernet adapter Ethernet:
  Media State . . . . . : Media disconnected
  Connection-specific DNS Suffix . . . . . : 

Ethernet adapter VirtualBox Host-Only Network:
  Connection-specific DNS Suffix . . . . . :
    Link-local IPv6 Address . . . . . : fe80::9996:54b0:ab7e:be97%47
    IPv4 Address . . . . . : 192.168.56.1
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 

Tunnel adapter isatap.<88626E07-8065-48A8-B2FC-8E40300168CD>:
  Media State . . . . . : Media disconnected
  Connection-specific DNS Suffix . . . . . : 

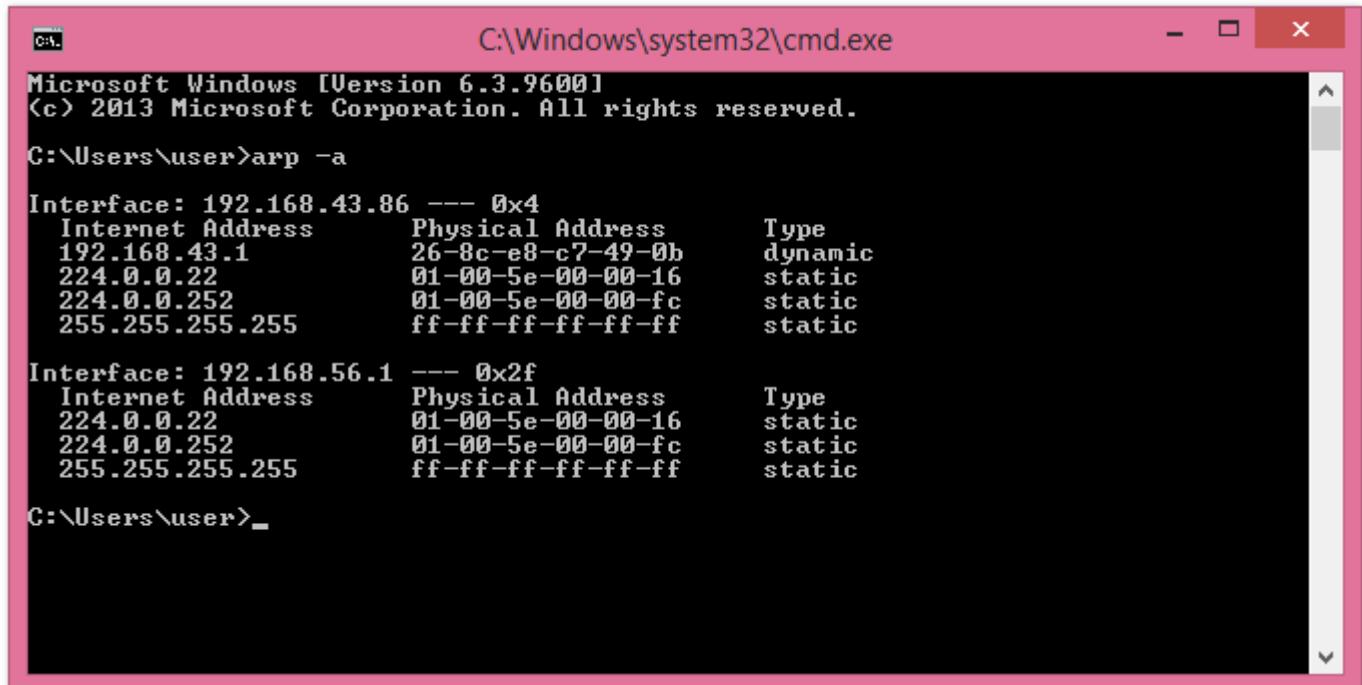
Tunnel adapter isatap.<E760DA6C-173C-4DD4-8142-59B9FE855999>:
  Media State . . . . . : Media disconnected
  Connection-specific DNS Suffix . . . . . : 
```

Laptop's IP address is 192.168.43.86 (Preferred, can be changed by administrator)

The Subnet mask is 255.255.255.0

So the Network portion is 192.168.43 and Host portion is 86.

3. Check your arp cache and provide screenshot of the entry.



The screenshot shows a Windows Command Prompt window titled "C:\Windows\system32\cmd.exe". The window displays the output of the "arp -a" command. The output lists ARP entries for two interfaces: 192.168.43.86 (0x4) and 192.168.56.1 (0x2f). Each interface has several entries:

Internet Address	Physical Address	Type
192.168.43.1	26-8c-e8-c7-49-0b	dynamic
224.0.0.22	01-00-5e-00-00-16	static
224.0.0.252	01-00-5e-00-00-fc	static
255.255.255.255	ff-ff-ff-ff-ff-ff	static

For the second interface (192.168.56.1), there are three static entries:

Internet Address	Physical Address	Type
224.0.0.22	01-00-5e-00-00-16	static
224.0.0.252	01-00-5e-00-00-fc	static
255.255.255.255	ff-ff-ff-ff-ff-ff	static

The command prompt prompt is "C:\Users\user>".

4. Identify your NIC's MAC address and provide the screenshot.

```
C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.3.9600]
(c) 2013 Microsoft Corporation. All rights reserved.

C:\Users\user>ipconfig

Windows IP Configuration

Ethernet adapter Ethernet 2:
  Media State . . . . . : Media disconnected
  Connection-specific DNS Suffix . . . . . : 

Wireless LAN adapter Local Area Connection* 32:
  Media State . . . . . : Media disconnected
  Connection-specific DNS Suffix . . . . . : 

Wireless LAN adapter Local Area Connection* 3:
  Media State . . . . . : Media disconnected
  Connection-specific DNS Suffix . . . . . : 

Wireless LAN adapter Wi-Fi:
  Connection-specific DNS Suffix . . . . . : 
  IPv6 Address . . . . . : 2409:4073:2018:865a:39f1:cc56:46a:d976
  Temporary IPv6 Address . . . . . : 2409:4073:2018:865a:c02:c1dd:9b82:41e9
  Link-local IPv6 Address . . . . . : fe80::39f1:cc56:46a:d976%4
  IPv4 Address . . . . . : 192.168.43.86
  Subnet Mask . . . . . : 255.255.255.0
  Default Gateway . . . . . : fe80::248c:e8ff:fea7:490b%4
                           192.168.43.1

Ethernet adapter Ethernet:
  Media State . . . . . : Media disconnected
  Connection-specific DNS Suffix . . . . . : 

Ethernet adapter VirtualBox Host-Only Network:
  Connection-specific DNS Suffix . . . . . : 
  Link-local IPv6 Address . . . . . : fe80::9996:54b0:ab7e:be97%47
  IPv4 Address . . . . . : 192.168.56.1
  Subnet Mask . . . . . : 255.255.255.0
  Default Gateway . . . . . : 

Tunnel adapter isatap.<88626E07-8065-48A8-B2FC-8E40300168CD>:
  Media State . . . . . : Media disconnected
  Connection-specific DNS Suffix . . . . . : 

Tunnel adapter isatap.<E760DA6C-173C-4DD4-8142-59B9FE855999>:
  Media State . . . . . : Media disconnected
  Connection-specific DNS Suffix . . . . . : 
```

```
C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.3.9600]
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C:\Users\user>ipconfig /all

Windows IP Configuration

Host Name . . . . . : hp
Primary Dns Suffix . . . . . :
Node Type . . . . . : Mixed
IP Routing Enabled . . . . . : No
WINS Proxy Enabled . . . . . : No

Ethernet adapter Ethernet 2:

Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . . . . . :
Description . . . . . : TAP-Windows Adapter V9
Physical Address . . . . . : 00-FF-CC-1E-24
DHCP Enabled . . . . . : No
Autoconfiguration Enabled . . . . . : Yes

Wireless LAN adapter Local Area Connection* 32:

Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . . . . . :
Description . . . . . : Microsoft Hosted Network Virtual Adapter
Physical Address . . . . . : 2C-33-7A-10-E4-89
DHCP Enabled . . . . . : No
Autoconfiguration Enabled . . . . . : Yes

Wireless LAN adapter Local Area Connection* 3:

Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . . . . . :
Description . . . . . : Microsoft Wi-Fi Direct Virtual Adapter
Physical Address . . . . . : 2C-33-7A-10-E4-89
DHCP Enabled . . . . . : No
Autoconfiguration Enabled . . . . . : Yes

Wireless LAN adapter Wi-Fi:

Connection-specific DNS Suffix . . . . . :
Description . . . . . : Realtek RTL8723BE 802.11 b/g/n Wi-Fi Adapter
Physical Address . . . . . : 2C-33-7A-10-E4-89
DHCP Enabled . . . . . : Yes
Autoconfiguration Enabled . . . . . : Yes
IPv6 Address . . . . . : 2409:4073:2018:865a:39f1:cc56:46a:d976<Preferred>
Temporary IPv6 Address . . . . . : 2409:4073:2018:865a:c02:c1dd:9b82:41e9<Preferred>
Link-local IPv6 Address . . . . . : fe80::39f1:cc56:46a:d976%4<Preferred>
IPv4 Address . . . . . : 192.168.43.86<Preferred>
Subnet Mask . . . . . : 255.255.255.0
Lease Obtained . . . . . : 18 September 2021 06:23:33 PM
Lease Expires . . . . . : 18 September 2021 09:05:10 PM
```

```
C:\Windows\system32\cmd.exe
Subnet Mask . . . . . : 255.255.255.0
Lease Obtained . . . . . : 18 September 2021 06:23:33 PM
Lease Expires . . . . . : 18 September 2021 09:05:10 PM
Default Gateway . . . . . : fe80::248c:e8ff:fec7:490b%4
                           192.168.43.1
DHCP Server . . . . . : 192.168.43.1
DHCPv6 IAID . . . . . : 70005626
DHCPv6 Client DUID . . . . . : 00-01-00-01-1C-13-D6-A4-38-63-BB-A9-75-18
DNS Servers . . . . . : 192.168.43.1
NetBIOS over Tcpip . . . . . : Disabled

Ethernet adapter Ethernet:

Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . . . . . :
Description . . . . . : Realtek PCIe FE Family Controller
Physical Address . . . . . : 38-63-BB-A9-75-18
DHCP Enabled . . . . . : No
Autoconfiguration Enabled . . . . . : Yes

Ethernet adapter VirtualBox Host-Only Network:

Connection-specific DNS Suffix . . . . . :
Description . . . . . : VirtualBox Host-Only Ethernet Adapter
Physical Address . . . . . : 0A-00-27-00-00-2F
DHCP Enabled . . . . . : Yes
Autoconfiguration Enabled . . . . . : Yes
Link-local IPv6 Address . . . . . : fe80::9996:54b0:ab7e:be97%47(PREFERRED)
IPv4 Address . . . . . : 192.168.56.1(PREFERRED)
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . :
DHCPv6 IAID . . . . . : 789184551
DHCPv6 Client DUID . . . . . : 00-01-00-01-1C-13-D6-A4-38-63-BB-A9-75-18
DNS Servers . . . . . : fec0:0:0:ffff::1%1
                           fec0:0:0:ffff::2%1
                           fec0:0:0:ffff::3%1
NetBIOS over Tcpip . . . . . : Disabled

Tunnel adapter isatap.<88626E07-8065-48A8-B2FC-8E40300168CD>:

Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . . . . . :
Description . . . . . : Microsoft ISATAP Adapter #3
Physical Address . . . . . : 00-00-00-00-00-00-E0
DHCP Enabled . . . . . : No
Autoconfiguration Enabled . . . . . : Yes

Tunnel adapter isatap.<E760DA6C-173C-4DD4-8142-59B9FE855999>:

Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . . . . . :
Description . . . . . : Microsoft ISATAP Adapter
Physical Address . . . . . : 00-00-00-00-00-00-E0
DHCP Enabled . . . . . : No
Autoconfiguration Enabled . . . . . : Yes
```