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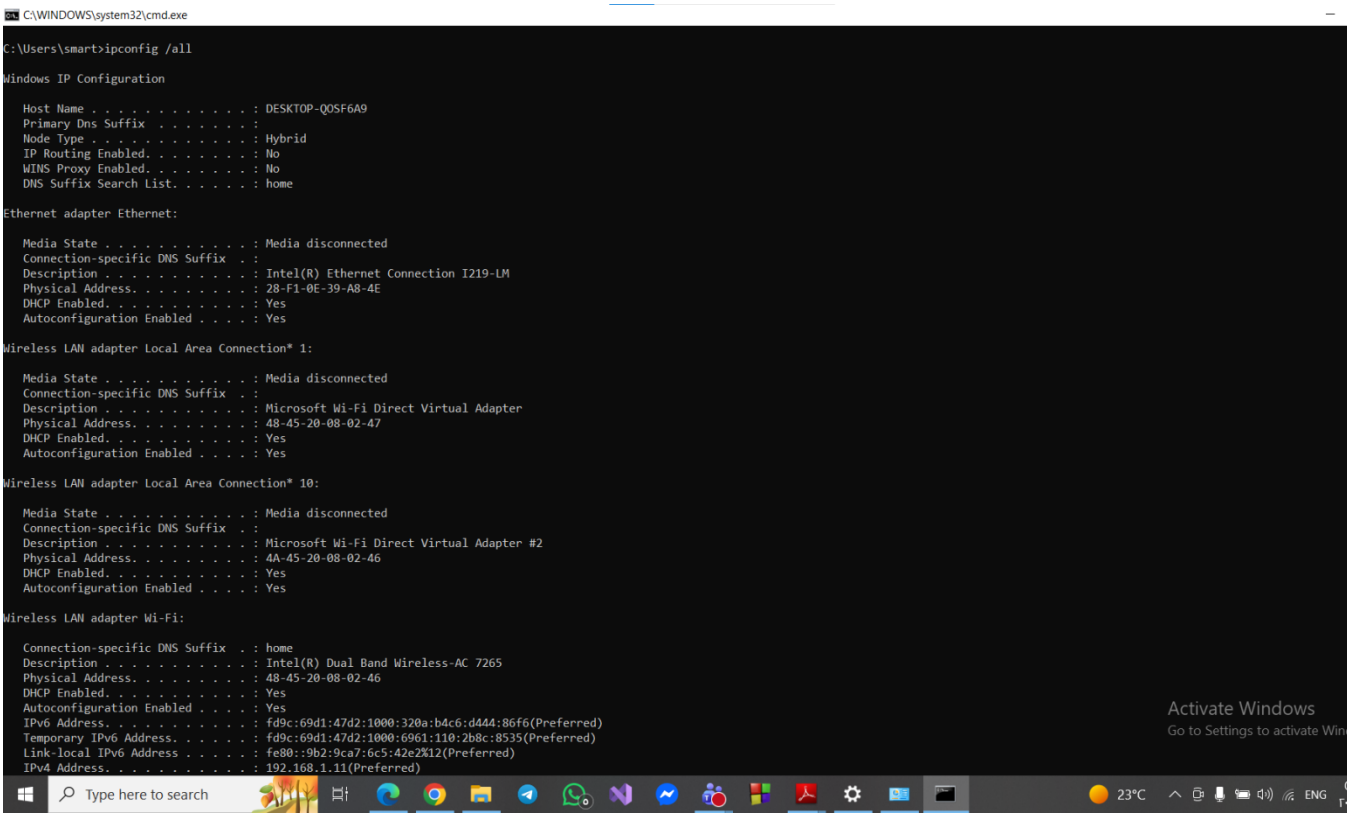
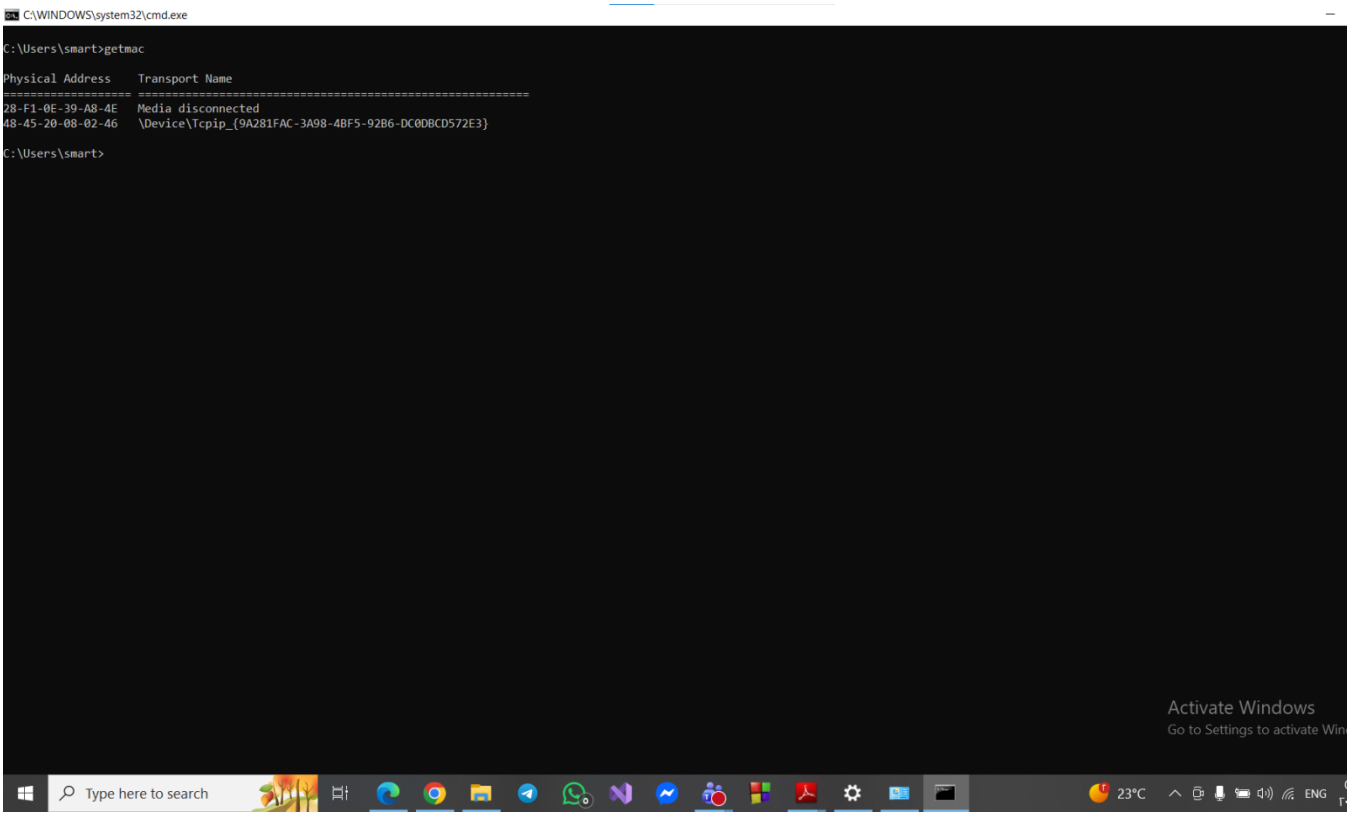
Lab 1: Network Commands & IP Addressing

Checking Physical (MAC) Address

1. What command shows all network details including the physical (MAC) address?
    - ipconfig /all

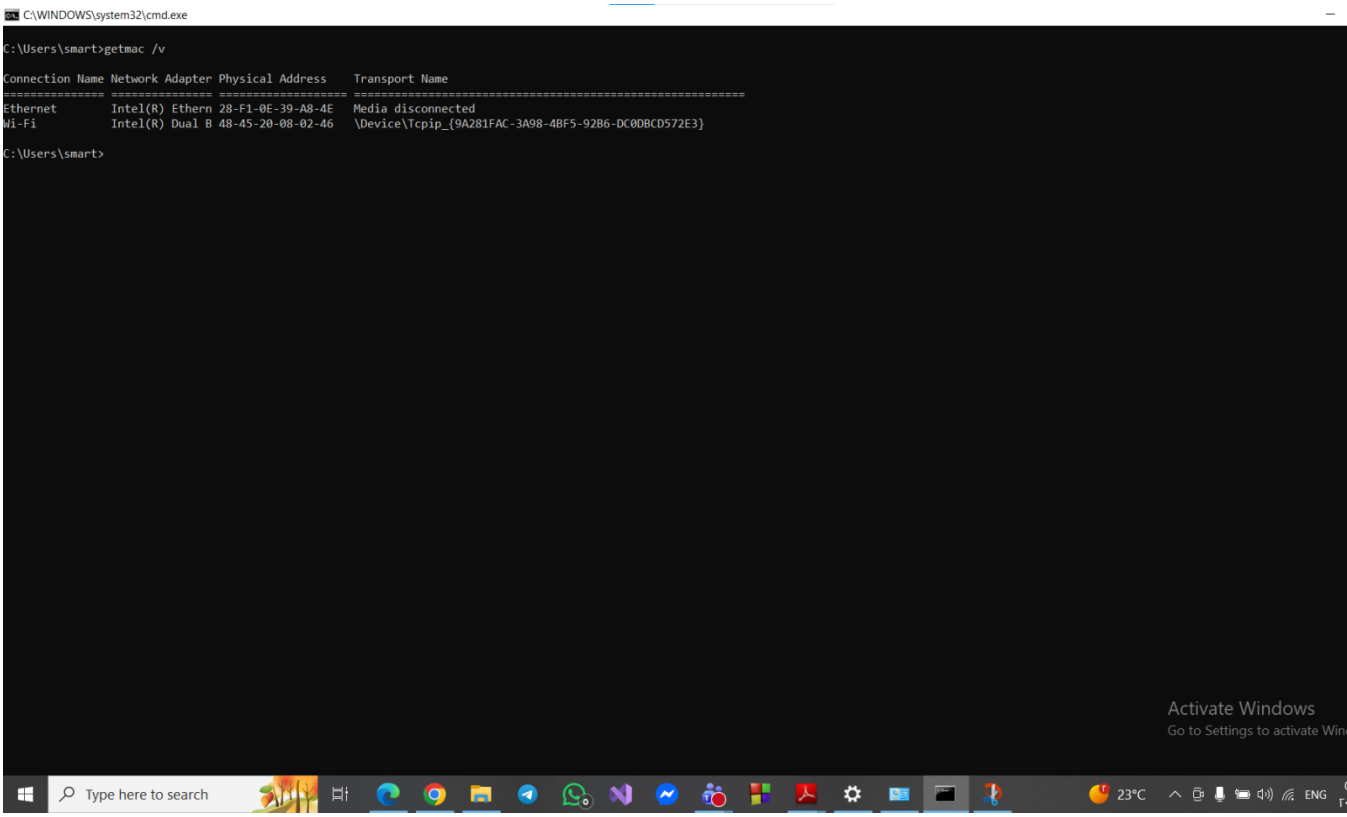


2. How can you see your device's MAC address?
    - Getmac



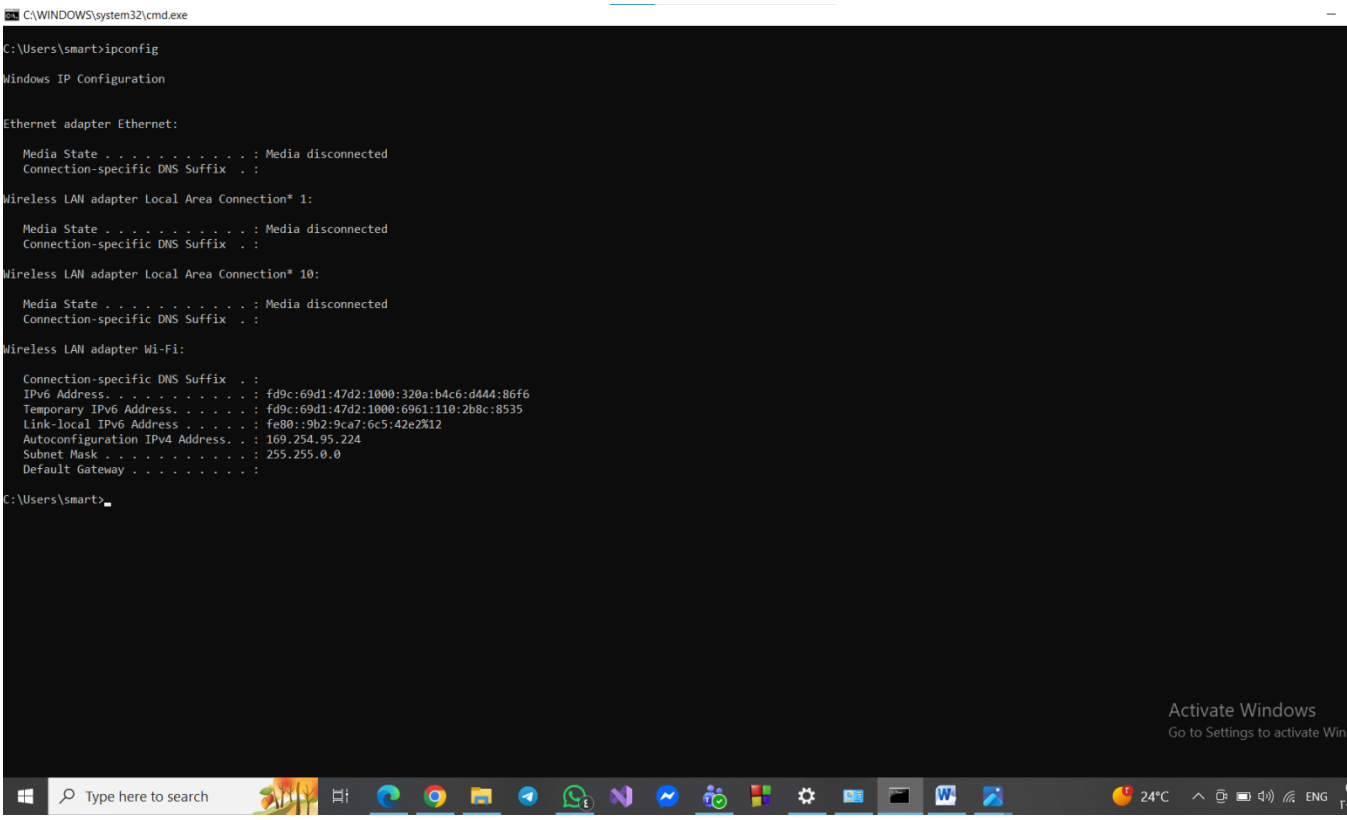
3. How can you show the MAC address with more details?

   - getmac /v

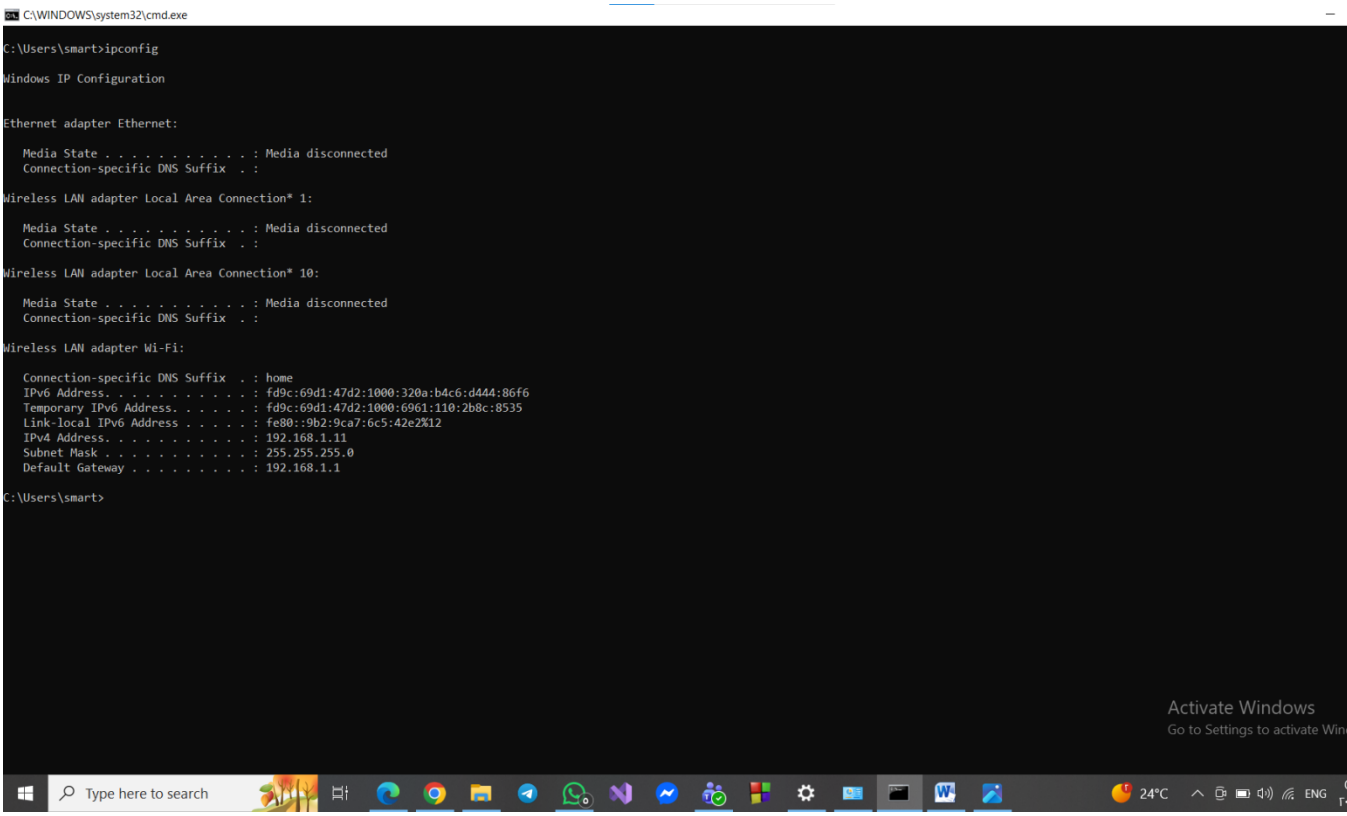


APIPA & IP Configuration

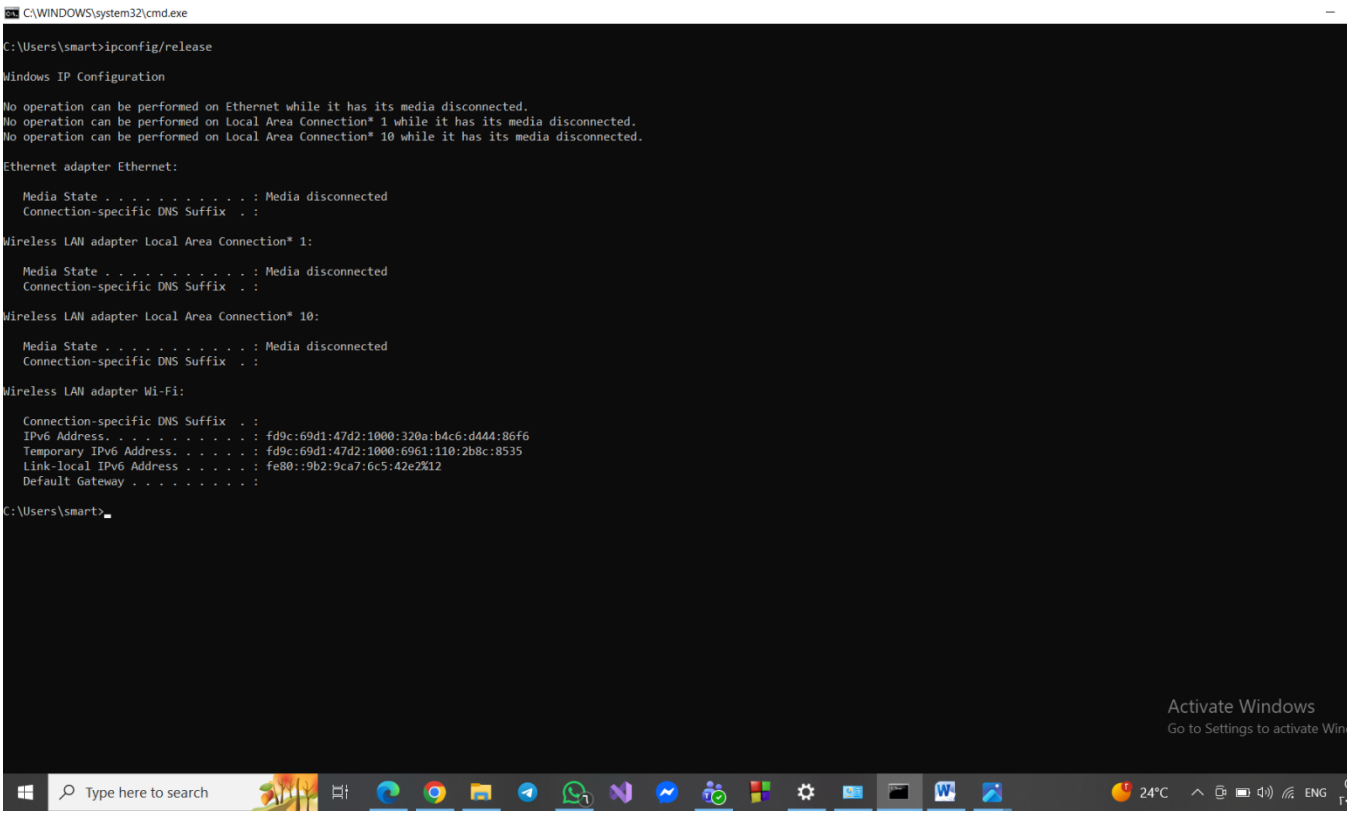
4. What is the default APIPA address when the device fails to get an IP from DHCP?
    - 169.254.95.224



5. What command shows your current IP settings?
    - Ipconfig



6. How do you release your current IP address?
    - ipconfig /release



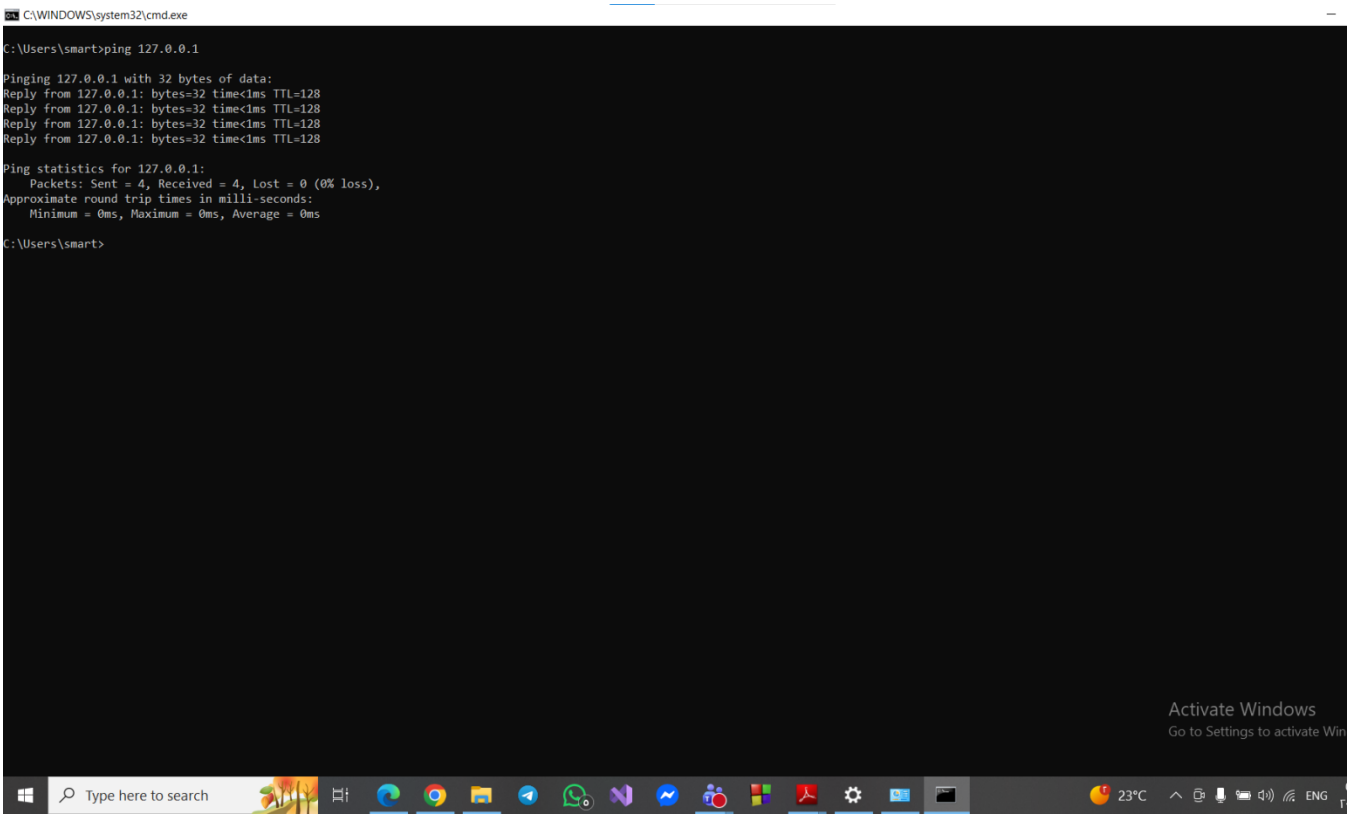
7. How do you request a new IP address from DHCP?

ipconfig /renew

```
C:\Users\smart>ipconfig /renew

Windows IP Configuration

No operation can be performed on Ethernet while it has its media disconnected.
No operation can be performed on Local Area Connection* 1 while it has its media disconnected.
No operation can be performed on Local Area Connection* 10 while it has its media disconnected.

Ethernet adapter Ethernet:

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

Wireless LAN adapter Local Area Connection* 1:

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

Wireless LAN adapter Local Area Connection* 10:

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

Wireless LAN adapter Wi-Fi:

   Connection-specific DNS Suffix  . : home
   IPv6 Address. . . . . . . . . . . : fd9c:69d1:47d2:1000:320a:b4c6:d444:86f6
   Temporary IPv6 Address. . . . . . : fd9c:69d1:47d2:1000:6961:110:2b8c:8535
   Link-local IPv6 Address . . . . . : fe80::9b2:9ca7:6c5:42e2%12
   IPv4 Address. . . . . . . . . . . : 192.168.1.11
   Subnet Mask . . . . . . . . . . . : 255.255.255.0
   Default Gateway . . . . . . . . . : 192.168.1.1

C:\Users\smart>
```

Ping Commands

9. How do you test connection to an IP address?
    - ping [IP address]

10. 

How do you test connection to a website (URL)?

- ping www.example.com

```
C:\Users\smart>ping www.google.com

Pinging www.google.com [142.250.185.100] with 32 bytes of data:
Reply from 142.250.185.100: bytes=32 time=63ms TTL=112
Reply from 142.250.185.100: bytes=32 time=63ms TTL=112
Reply from 142.250.185.100: bytes=32 time=64ms TTL=112
Reply from 142.250.185.100: bytes=32 time=62ms TTL=112

Ping statistics for 142.250.185.100:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 62ms, Maximum = 64ms, Average = 63ms

C:\Users\smart>
```

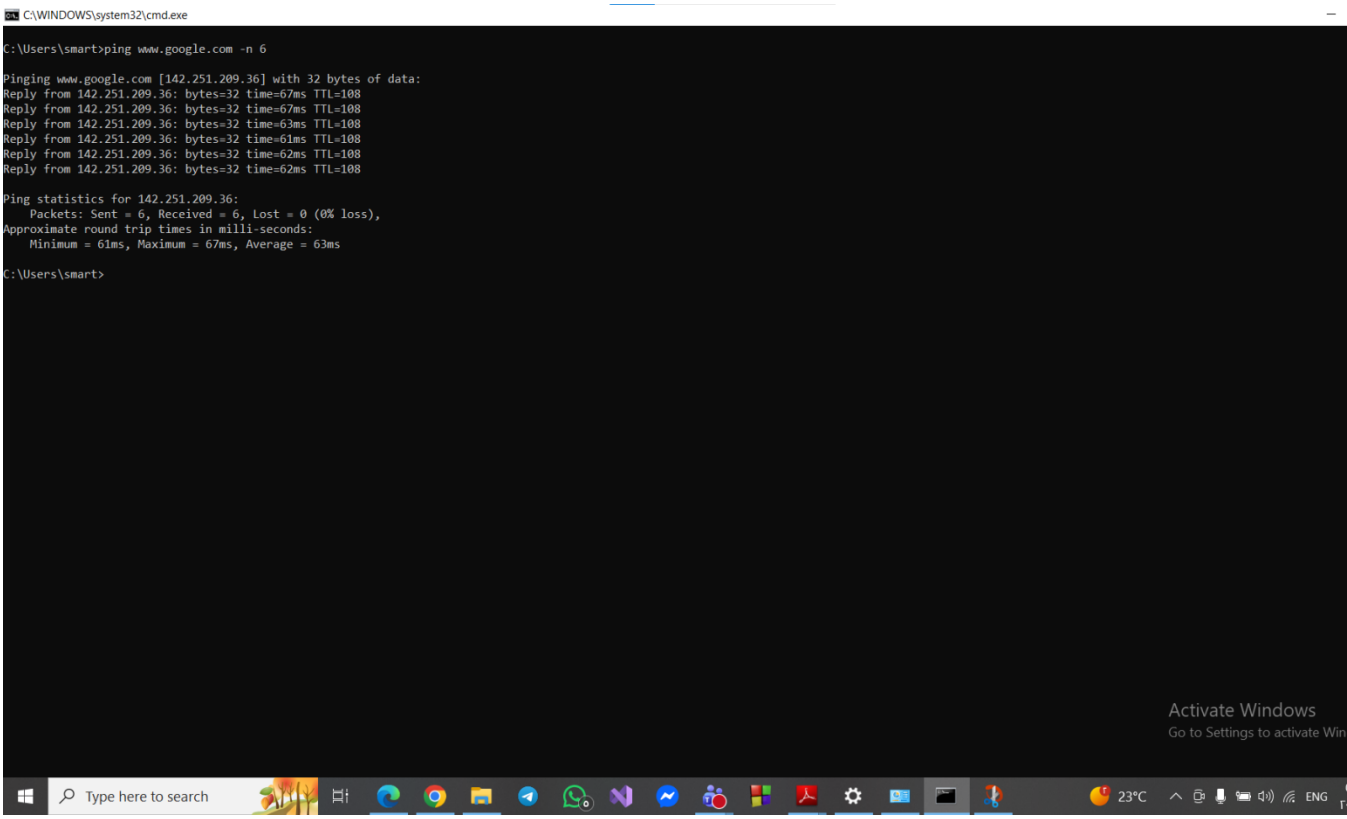
11. How do you send a ping with a specific data size?

- ping [IP] -l [size]

```
C:\Users\smart>ping 8.8.8.8 -i 8

Pinging 8.8.8.8 with 32 bytes of data:
Reply from 192.178.99.215: TTL expired in transit.
Reply from 192.178.99.215: TTL expired in transit.
Reply from 192.178.99.215: TTL expired in transit.
Reply from 192.178.99.215: TTL expired in transit.

Ping statistics for 8.8.8.8:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),

C:\Users\smart>
```

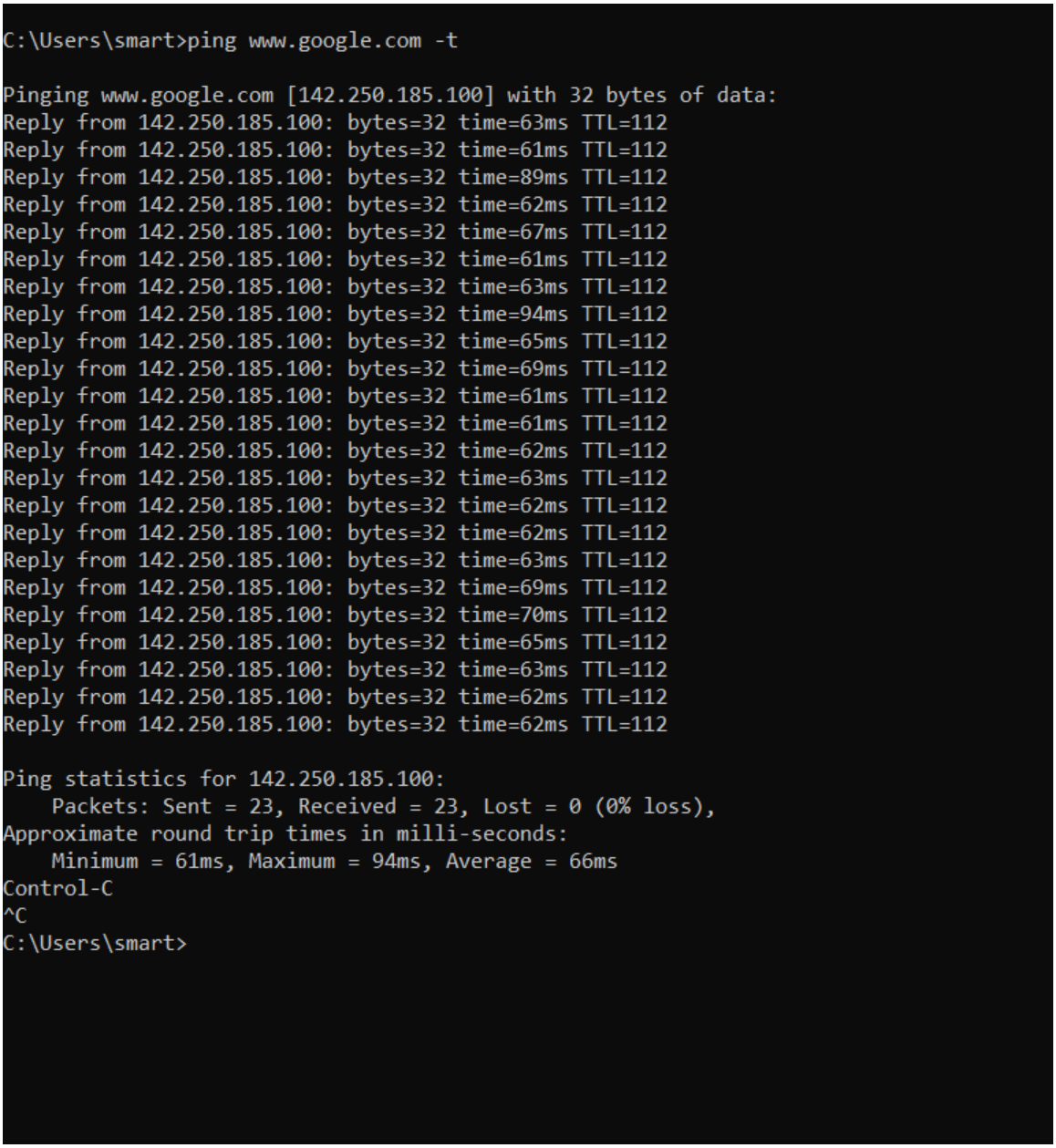
12. How do you send a specific number of ping requests?

- ping [IP] -n [count]



13. How do you send continuous ping requests until you stop it manually?

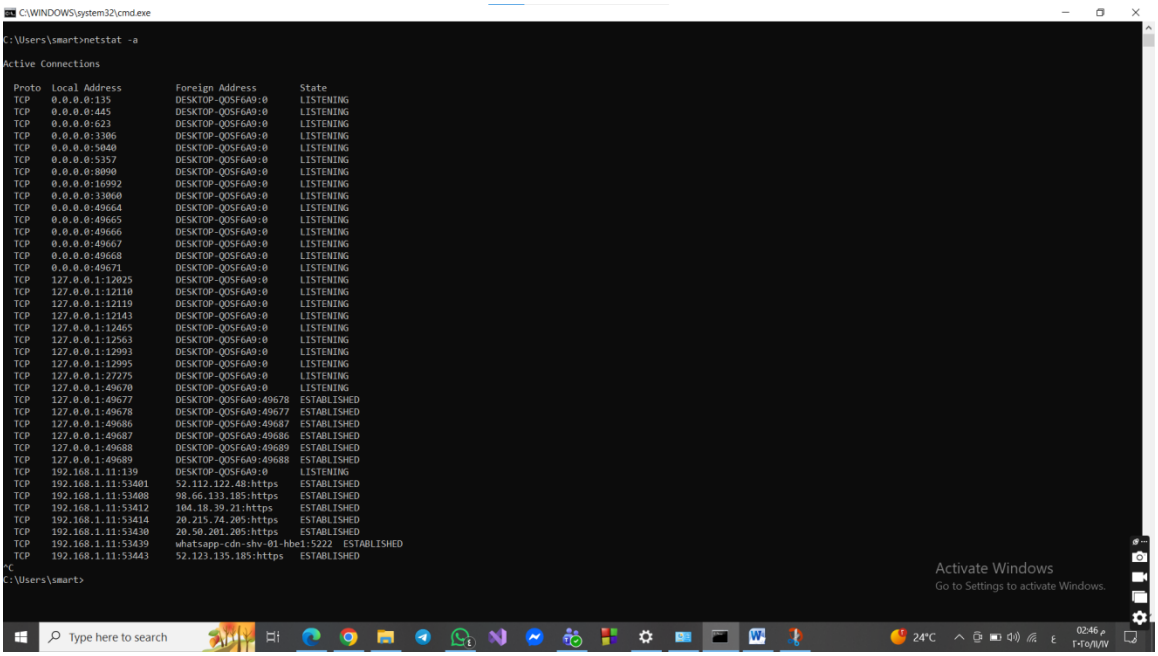
- ping [IP] –t



Netstat

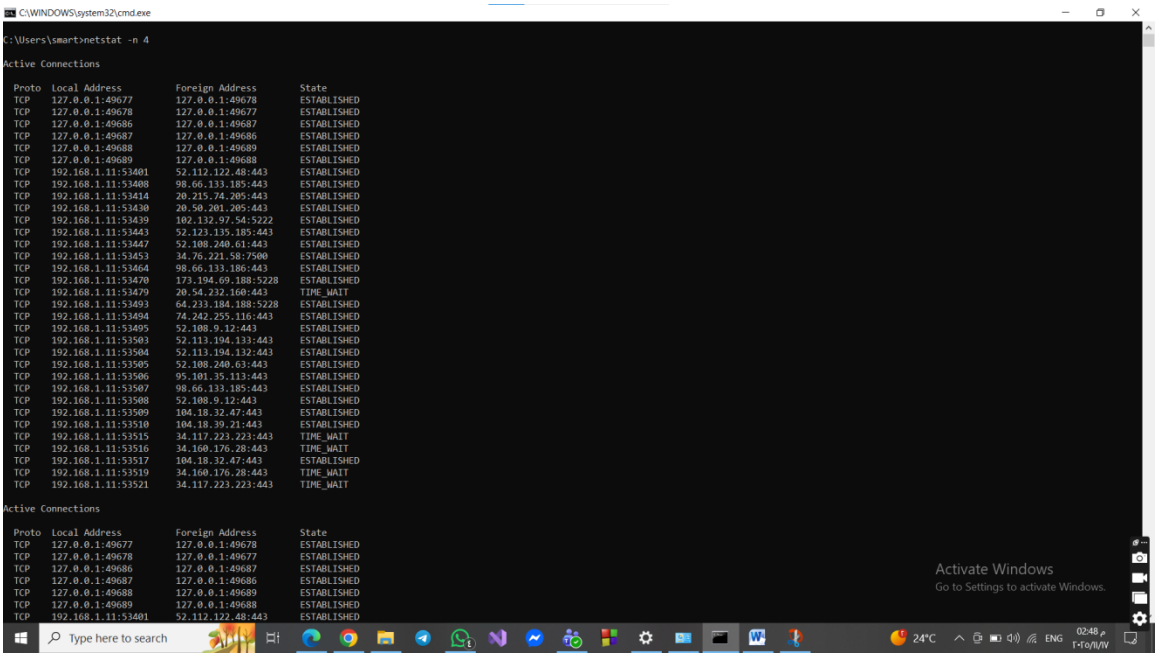
19. How do you show all active connections?

- netstat –a



20. How do you show active connections with numbers only?

- netstat –n



21. What command shows MAC addresses of other devices on the network?

arp –a

```
C:\Users\smart>arp -a

Interface: 192.168.1.11 --- 0xc
  Internet Address      Physical Address      Type
  192.168.1.1           9c-69-d1-47-d2-10     dynamic
  192.168.1.13          e6-14-84-03-48-ca     dynamic
  224.0.0.22            01-00-5e-00-00-16     static

C:\Users\smart>
```

22. What command deletes the ARP cache?

arp –d

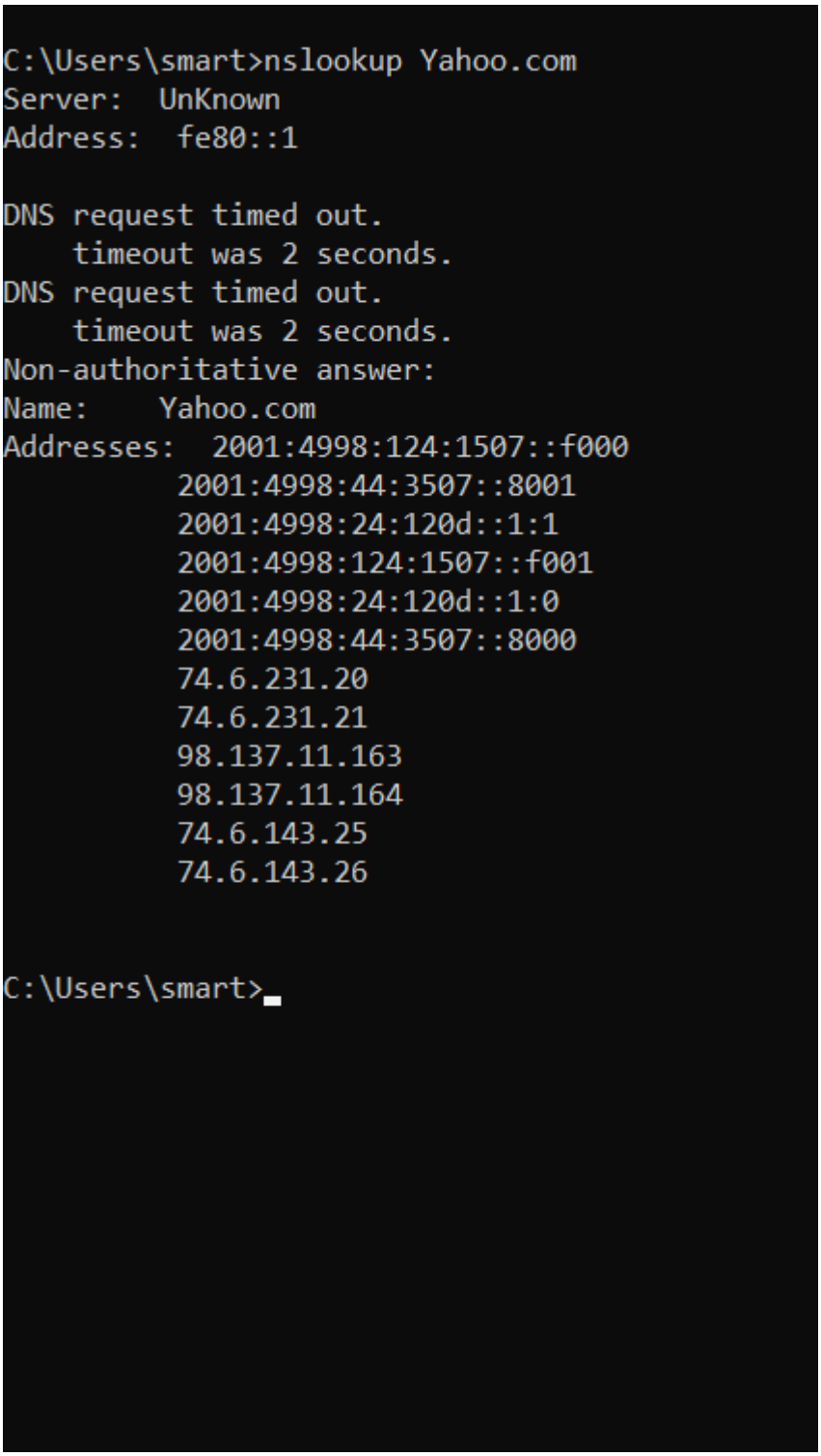
```
Microsoft Windows [Version 10.0.19045.6466]
(c) Microsoft Corporation. All rights reserved.

C:\WINDOWS\system32>arp -d

C:\WINDOWS\system32>
```

23. To know which IP address belongs to a domain name:

nslookup Domain_Name

Example:

nslookup Yahoo.com



24. To know which domain name belongs to a specific IP address:

Type this command:

nslookup IP_address

Example:

nslookup 87.248.113.14

```
C:\Users\smart>nslookup 87.248.113.14
Server:  UnKnown
Address:  fe80::1

Name:    et23-1.bas1-1-edg.amb.yahoo.com
Address:  87.248.113.14


C:\Users\smart>
```