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Track: Java

1- Ipconfig command

a- ipconfig

```
C:\> Select Administrator: Command Prompt
Microsoft Windows [Version 10.0.19045.6456]
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C:\Windows\system32>ipconfig

Windows IP Configuration

Ethernet adapter Ethernet:

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

Ethernet adapter Ethernet 2:

    Connection-specific DNS Suffix . . .
    Link-local IPv6 Address . . . . . : fe80::3c59:1419:4fc5:e90a%15
    IPv4 Address. . . . . : 192.168.56.1
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . :

Wireless LAN adapter Local Area Connection* 9:

    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. . . . . : fdb4:f58e:484e:fd00:4733:701:7995:5fcd
    Temporary IPv6 Address. . . . . : fdb4:f58e:484e:fd00:1993:4795:d855:676c
    Link-local IPv6 Address . . . . . : fe80::2a1b:6d90:c907:e47b%8
    IPv4 Address. . . . . : 192.168.1.10
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 192.168.1.1

Ethernet adapter Bluetooth Network Connection 4:

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

C:\Windows\system32>
```

b- ipconfig /all

```
C:\Windows\system32>ipconfig /all

Windows IP Configuration

Host Name . . . . . : DESKTOP-USM07QA
Primary Dns Suffix . . . . . :
Node Type . . . . . : Mixed
IP Routing Enabled. . . . . : No
WINS Proxy Enabled. . . . . : No
DNS Suffix Search List. . . . . : home
```

Wireless LAN adapter Wi-Fi:

```
Connection-specific DNS Suffix . . . . . : home
Description . . . . . : Intel(R) Wireless-AC 9462
Physical Address. . . . . : 38-FC-98-38-BE-8B
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . . : Yes
IPv6 Address. . . . . : fdb4:f58e:484e:fd00:4733:701:7995:5fcd(Preferred)
Temporary IPv6 Address. . . . . : fdb4:f58e:484e:fd00:1993:4795:d855:676c(Preferred)
Link-local IPv6 Address . . . . . : fe80::2a1b:6d90:c907:e47b%8(Preferred)
IPv4 Address. . . . . : 192.168.1.10(Preferred)
Subnet Mask . . . . . : 255.255.255.0
Lease Obtained. . . . . : Friday, October 17, 2025 5:17:09 PM
Lease Expires . . . . . : Tuesday, October 21, 2025 1:28:32 PM
Default Gateway . . . . . : 192.168.1.1
DHCP Server . . . . . : 192.168.1.1
DHCPv6 IAID . . . . . : 439942296
DHCPv6 Client DUID. . . . . : 00-01-00-01-28-C3-7B-8C-34-73-5A-EF-C9-53
DNS Servers . . . . . : fe80::1%8
                                         192.168.1.1
                                         192.168.1.1
NetBIOS over Tcpip. . . . . : Enabled
```

c- ipconfig /release

Wireless LAN adapter Wi-Fi:

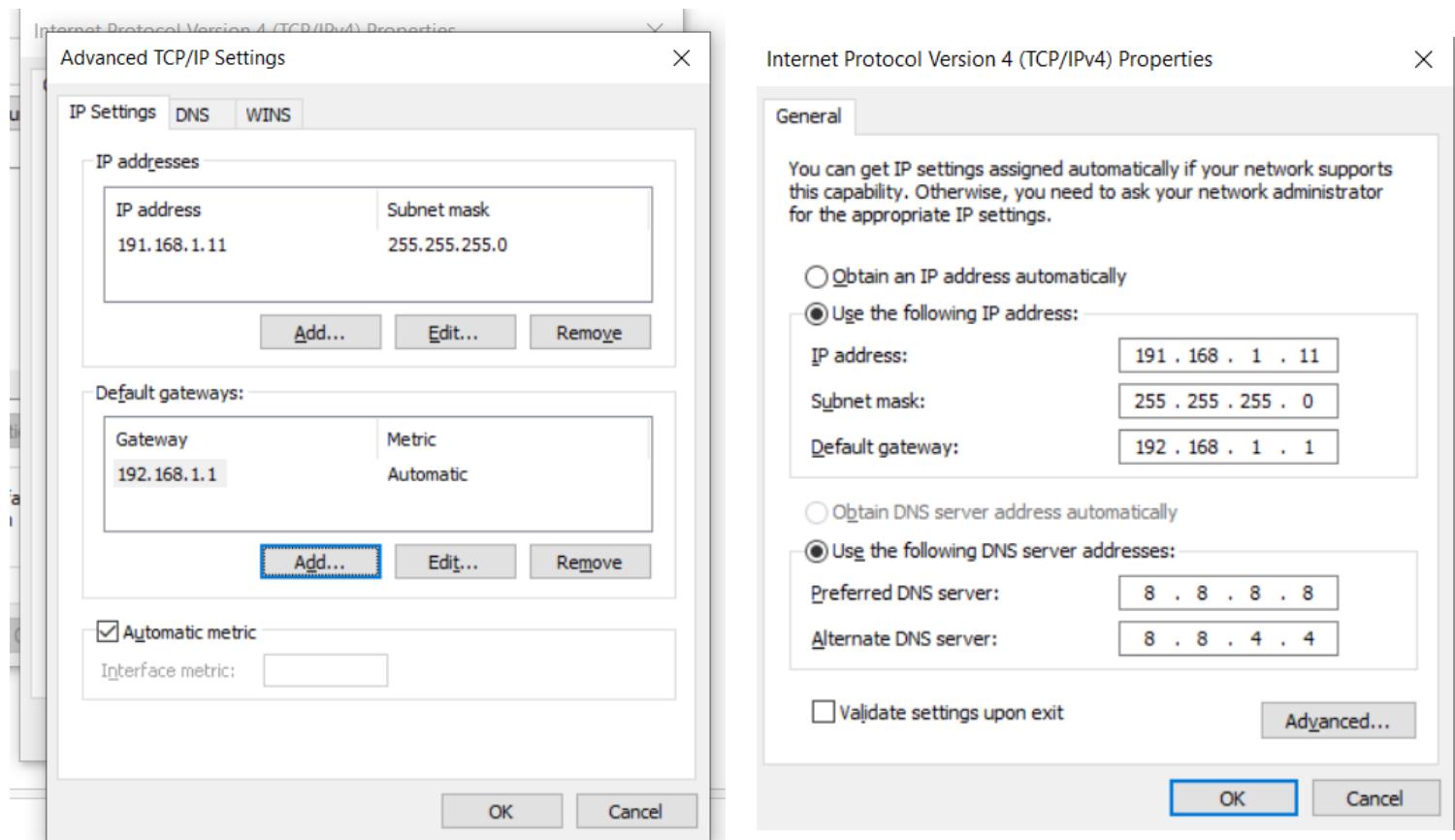
```
Connection-specific DNS Suffix . . . . . :
IPv6 Address. . . . . . . . . : fdb4:f58e:484e:fd00:4733:701:7995:5fcd
Temporary IPv6 Address. . . . . : fdb4:f58e:484e:fd00:1993:4795:d855:676c
Link-local IPv6 Address . . . . . : fe80::2a1b:6d90:c907:e47b%8
Default Gateway . . . . . . . . . :
```

d- ipconfig /renew

```
Wireless LAN adapter Wi-Fi:

Connection-specific DNS Suffix . : home
IPv6 Address . . . . . : fdb4:f58e:484e:fd00:4733:701:7995:5fc0
Temporary IPv6 Address . . . . . : fdb4:f58e:484e:fd00:1993:4795:d855:676c
Link-local IPv6 Address . . . . . : fe80::2a1b:6d90:c907:e47b%8
IPv4 Address . . . . . : 192.168.1.10
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . : 192.168.1.1
```

2- Configure IP address manually



3- Ping Command

a- Check Connectivity

```
C:\Windows\system32>ping 192.168.1.1

Pinging 192.168.1.1 with 32 bytes of data:
Reply from 192.168.1.1: bytes=32 time=2ms TTL=64
Reply from 192.168.1.1: bytes=32 time=18ms TTL=64
Reply from 192.168.1.1: bytes=32 time=5ms TTL=64
Reply from 192.168.1.1: bytes=32 time=2ms TTL=64

Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 2ms, Maximum = 18ms, Average = 6ms

C:\Windows\system32>
```

b- Check The Availability Website

```
C:\Windows\system32>ping yahoo.com

Pinging yahoo.com [74.6.231.20] with 32 bytes of data:
Reply from 74.6.231.20: bytes=32 time=171ms TTL=51
Reply from 74.6.231.20: bytes=32 time=177ms TTL=51
Reply from 74.6.231.20: bytes=32 time=250ms TTL=51
Reply from 74.6.231.20: bytes=32 time=171ms TTL=51

Ping statistics for 74.6.231.20:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 171ms, Maximum = 250ms, Average = 192ms

C:\Windows\system32>
```

c- Continue Ping Operation Unlimited

```
C:\Windows\system32>ping 192.168.1.1 -t

Pinging 192.168.1.1 with 32 bytes of data:
Reply from 192.168.1.1: bytes=32 time=1ms TTL=64
Reply from 192.168.1.1: bytes=32 time=2ms TTL=64
Reply from 192.168.1.1: bytes=32 time=1ms TTL=64
Reply from 192.168.1.1: bytes=32 time=2ms TTL=64
Reply from 192.168.1.1: bytes=32 time=1ms TTL=64

Ping statistics for 192.168.1.1:
    Packets: Sent = 8, Received = 8, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 2ms, Average = 1ms
Control-C
^C
C:\Windows\system32>
```

d- Control The Number of Pinging Packets

```
C:\Windows\system32>ping 192.168.1.1 -n 4

Pinging 192.168.1.1 with 32 bytes of data:
Reply from 192.168.1.1: bytes=32 time=2ms TTL=64
Reply from 192.168.1.1: bytes=32 time=1ms TTL=64
Reply from 192.168.1.1: bytes=32 time=4ms TTL=64
Reply from 192.168.1.1: bytes=32 time=5ms TTL=64

Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 5ms, Average = 3ms
C:\Windows\system32>
```

e- Control The Size of Pinging Packets

```
C:\Windows\system32>ping 192.168.1.1 -l 2000

Pinging 192.168.1.1 with 2000 bytes of data:
Reply from 192.168.1.1: bytes=2000 time=1ms TTL=64
Reply from 192.168.1.1: bytes=2000 time=4ms TTL=64
Reply from 192.168.1.1: bytes=2000 time=3ms TTL=64
Reply from 192.168.1.1: bytes=2000 time=3ms TTL=64

Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 4ms, Average = 2ms

C:\Windows\system32>
```

4- MAC Address

```
C:\Windows\system32>getmac

Physical Address      Transport Name
=====  =====
38-FC-98-38-BE-8B    \Device\Tcpip_{315516F5-39B6-417B-9F90-4D8C2163F0BA}
34-73-5A-EF-C9-53    Media disconnected
0A-00-27-00-00-0F    \Device\Tcpip_{A19E432D-29BA-4E8C-A396-67A7A77CE80B}
38-FC-98-38-BE-8F    Media disconnected

C:\Windows\system32>
```

5- ARP Command

a- Clear ARP cache and check its content

```
C:\Windows\system32>arp -a

Interface: 192.168.1.10 --- 0x8
Internet Address      Physical Address      Type
192.168.1.1            b4-f5-8e-48-4e-fd    dynamic
192.168.1.255          ff-ff-ff-ff-ff-ff    static
224.0.0.22              01-00-5e-00-00-16    static
224.0.0.251             01-00-5e-00-00-fb    static
224.0.0.252             01-00-5e-00-00-fc    static
239.255.255.250        01-00-5e-7f-ff-fa    static
255.255.255.255        ff-ff-ff-ff-ff-ff    static

Interface: 192.168.56.1 --- 0xf
Internet Address      Physical Address      Type
192.168.56.255         ff-ff-ff-ff-ff-ff    static
224.0.0.22              01-00-5e-00-00-16    static
224.0.0.251             01-00-5e-00-00-fb    static
224.0.0.252             01-00-5e-00-00-fc    static
239.255.255.250        01-00-5e-7f-ff-fa    static

C:\Windows\system32>arp -d

C:\Windows\system32>arp -a

Interface: 192.168.1.10 --- 0x8
Internet Address      Physical Address      Type
192.168.1.1            b4-f5-8e-48-4e-fd    dynamic
224.0.0.22              01-00-5e-00-00-16    static

Interface: 192.168.56.1 --- 0xf
Internet Address      Physical Address      Type
224.0.0.22              01-00-5e-00-00-16    static

C:\Windows\system32>
```

6- Opened Ports and Sessions

a- Concurrent TCP connections

```
C:\Windows\system32>netstat -n
```

Active Connections

Proto	Local Address	Foreign Address	State
TCP	127.0.0.1:5354	127.0.0.1:52101	ESTABLISHED
TCP	127.0.0.1:5354	127.0.0.1:52102	ESTABLISHED
TCP	127.0.0.1:49671	127.0.0.1:49672	ESTABLISHED
TCP	127.0.0.1:49672	127.0.0.1:49671	ESTABLISHED
TCP	127.0.0.1:49673	127.0.0.1:49674	ESTABLISHED
TCP	127.0.0.1:49674	127.0.0.1:49673	ESTABLISHED
TCP	127.0.0.1:51846	127.0.0.1:65001	ESTABLISHED
TCP	127.0.0.1:52002	127.0.0.1:52030	ESTABLISHED
TCP	127.0.0.1:52030	127.0.0.1:52002	ESTABLISHED
TCP	127.0.0.1:52101	127.0.0.1:5354	ESTABLISHED
TCP	127.0.0.1:52102	127.0.0.1:5354	ESTABLISHED
TCP	127.0.0.1:56590	127.0.0.1:49350	TIME_WAIT
TCP	127.0.0.1:56593	127.0.0.1:49350	TIME_WAIT
TCP	127.0.0.1:56600	127.0.0.1:49350	TIME_WAIT
TCP	127.0.0.1:56601	127.0.0.1:49350	TIME_WAIT
TCP	127.0.0.1:56602	127.0.0.1:49350	TIME_WAIT

```
C:\Windows\system32>netstat -a 192.168.1.1
```

Active Connections

Proto	Local Address	Foreign Address	State
TCP	0.0.0.0:80	DESKTOP-USM07QA:0	LISTENING
TCP	0.0.0.0:135	DESKTOP-USM07QA:0	LISTENING
TCP	0.0.0.0:443	DESKTOP-USM07QA:0	LISTENING
TCP	0.0.0.0:445	DESKTOP-USM07QA:0	LISTENING
TCP	0.0.0.0:3307	DESKTOP-USM07QA:0	LISTENING
TCP	0.0.0.0:5040	DESKTOP-USM07QA:0	LISTENING
TCP	0.0.0.0:33060	DESKTOP-USM07QA:0	LISTENING
TCP	0.0.0.0:49664	DESKTOP-USM07QA:0	LISTENING
TCP	0.0.0.0:49665	DESKTOP-USM07QA:0	LISTENING
TCP	0.0.0.0:49666	DESKTOP-USM07QA:0	LISTENING
TCP	0.0.0.0:49667	DESKTOP-USM07QA:0	LISTENING
TCP	0.0.0.0:49668	DESKTOP-USM07QA:0	LISTENING
TCP	0.0.0.0:49670	DESKTOP-USM07QA:0	LISTENING
TCP	127.0.0.1:3306	DESKTOP-USM07QA:0	LISTENING
TCP	127.0.0.1:5354	DESKTOP-USM07QA:0	LISTENING
TCP	127.0.0.1:5354	static3:52101	ESTABLISHED
TCP	127.0.0.1:5354	static3:52102	ESTABLISHED

7- Domain Name System

```
C:\Windows\system32>nslookup facebook.com
Server: UnKnown
Address: fe80::1

Non-authoritative answer:
Name: facebook.com
Addresses: 2a03:2880:f13b:83:face:b00c:0:25de
          102.132.97.35

C:\Windows\system32>
```

```
C:\Windows\system32>nslookup 102.132.97.35
Server: UnKnown
Address: fe80::1

Name: edge-star-mini-shv-01-hbe1.facebook.com
Address: 102.132.97.35

C:\Windows\system32>
```