

Q1

```
C:\Users\KIIT>ipconfig
```

# Windows IP Configuration

## Ethernet adapter vEthernet (WSL (Hyper-V firewall)):

```
Connection-specific DNS Suffix . :  
Link-local IPv6 Address . . . . . : fe80::3d4:7b0b:6c27:139b%43  
IPv4 Address. . . . . : 172.17.160.1  
Subnet Mask . . . . . : 255.255.240.0  
Default Gateway . . . . . :
```

## Wireless LAN adapter Local Area Connection\* 3:

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

## Wireless LAN adapter Local Area Connection\* 4:

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

## Ethernet adapter VMware Network Adapter VMnet1:

```
Connection-specific DNS Suffix . :  
Link-local IPv6 Address . . . . . : fe80::938e:4fd:30dd:506f%13  
IPv4 Address. . . . . : 192.168.230.1  
Subnet Mask . . . . . : 255.255.255.0  
Default Gateway . . . . . :
```

## Ethernet adapter VMware Network Adapter VMnet8:

```
Connection-specific DNS Suffix . :  
Link-local IPv6 Address . . . . . : fe80::5c65:9078:97c2:5222%7  
IPv4 Address. . . . . : 192.168.17.1  
Subnet Mask . . . . . : 255.255.255.0  
Default Gateway . . . . . :
```

## Wireless LAN adapter Wi-Fi:

```
Connection-specific DNS Suffix . : dhcp02  
Link-local IPv6 Address . . . . . : fe80::2b44:bc90:e8bd:4f8a%8  
IPv4 Address. . . . . : 10.2.254.13  
Subnet Mask . . . . . : 255.255.240.0  
Default Gateway . . . . . : 10.2.240.1
```

Q2

```
C:\Users\KIIT>ping -l 100 -n 4 google.com

Pinging google.com [142.250.195.238] with 100 bytes of data:
Reply from 142.250.195.238: bytes=68 (sent 100) time=45ms TTL=117
Reply from 142.250.195.238: bytes=68 (sent 100) time=51ms TTL=117
Reply from 142.250.195.238: bytes=68 (sent 100) time=71ms TTL=58
Reply from 142.250.195.238: bytes=68 (sent 100) time=70ms TTL=58

Ping statistics for 142.250.195.238:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 45ms, Maximum = 71ms, Average = 59ms
```

Q3

```
C:\Users\KIIT>tracert kiit.ac.in

Tracing route to kiit.ac.in [104.26.2.120]
over a maximum of 30 hops:

  0  3 ms    5 ms    4 ms  10.2.240.2
  1  13 ms   3 ms    4 ms  192.168.102.1
  2  10 ms   5 ms    5 ms  dsl-ncr-dynamic-001.88.16.125.airtelbroadband.in [125.16.88.1]
  3   9 ms   4 ms    5 ms  125.20.251.45
  4  53 ms  31 ms   56 ms  182.79.205.103
  5  28 ms  29 ms   23 ms  182.79.161.171
  6  30 ms  27 ms   28 ms  162.158.52.19
  7  50 ms  49 ms   48 ms  104.26.2.120

Trace complete.
```

```
C:\Users\KIIT>tracert -4 kiit.ac.in

Tracing route to kiit.ac.in [104.26.3.120]
over a maximum of 30 hops:

  0   4 ms    3 ms    4 ms  10.2.240.2
  1   7 ms    7 ms    4 ms  192.168.102.1
  2  10 ms    4 ms    5 ms  dsl-ncr-dynamic-001.88.16.125.airtelbroadband.in [125.16.88.1]
  3   5 ms    5 ms    8 ms  182.78.160.105
  4  27 ms   26 ms   26 ms  182.79.205.103
  5  51 ms   54 ms   49 ms  182.79.161.171
  6  47 ms   45 ms   49 ms  162.158.52.35
  7  69 ms   46 ms   48 ms  104.26.3.120

Trace complete.
```

Q4

```
C:\Users\KIIT>tracert -h 10 google.com

Tracing route to google.com [142.250.77.110]
over a maximum of 10 hops:

  0   6 ms    7 ms    6 ms  10.2.240.2
  1  11 ms    5 ms    4 ms  192.168.102.1
  2   4 ms    3 ms    3 ms  103.106.200.1
  3   3 ms    6 ms    6 ms  125.20.251.45
  4  46 ms   45 ms   24 ms  182.79.198.0
  5  45 ms   24 ms   46 ms  72.14.205.196
  6  23 ms   22 ms   22 ms  142.251.227.213
  7  22 ms   27 ms   25 ms  142.251.55.229
  8  23 ms   21 ms   23 ms  maa05s15-in-f14.1e100.net [142.250.77.110]

Trace complete.
```

Q5

```
C:\Users\KIIT>netstat -s
```

#### IPv4 Statistics

Packets Received	= 18297443
Received Header Errors	= 0
Received Address Errors	= 2155
Datagrams Forwarded	= 0
Unknown Protocols Received	= 0
Received Packets Discarded	= 462963
Received Packets Delivered	= 18418044
Output Requests	= 11265086
Routing Discards	= 0
Discarded Output Packets	= 107794
Output Packet No Route	= 6953
Reassembly Required	= 3065
Reassembly Successful	= 28
Reassembly Failures	= 0
Datagrams Successfully Fragmented	= 0
Datagrams Failing Fragmentation	= 0
Fragments Created	= 0

#### IPv6 Statistics

Packets Received	= 75031
Received Header Errors	= 0
Received Address Errors	= 192
Datagrams Forwarded	= 0
Unknown Protocols Received	= 0
Received Packets Discarded	= 22
Received Packets Delivered	= 215677
Output Requests	= 277394
Routing Discards	= 0
Discarded Output Packets	= 179
Output Packet No Route	= 35
Reassembly Required	= 0
Reassembly Successful	= 0
Reassembly Failures	= 0
Datagrams Successfully Fragmented	= 0
Datagrams Failing Fragmentation	= 0
Fragments Created	= 0

#### ICMPv4 Statistics

	Received	Sent
Messages	27610	36068
Errors	0	0
Destination Unreachable	27153	35953
Time Exceeded	285	0
Parameter Problems	0	0
Source Quenchs	0	0
Redirects	0	0
Echo Replies	165	0
Echos	7	115
Timestamps	0	0
Timestamp Replies	0	0
Address Masks	0	0
Address Mask Replies	0	0
Router Solicitations	0	0
Router Advertisements	0	0

#### ICMPv6 Statistics

	Received	Sent
Messages	336	7525
Errors	0	0
Destination Unreachable	50	50
Packet Too Big	0	0
Time Exceeded	45	0
Parameter Problems	0	0
Echos	0	66
Echo Replies	18	0
MLD Queries	0	0
MLD Reports	0	0
MLD Dones	0	0
Router Solicitations	0	4224
Router Advertisements	17	0
Neighbor Solicitations	129	1635
Neighbor Advertisements	77	1550
Redirects	0	0
Router Renumberings	0	0

#### TCP Statistics for IPv4

Active Opens	= 164579
Passive Opens	= 28046
Failed Connection Attempts	= 232738
Reset Connections	= 34413
Current Connections	= 30
Segments Received	= 12178936
Segments Sent	= 10021105
Segments Retransmitted	= 124661

#### TCP Statistics for IPv6

Active Opens	= 1268
Passive Opens	= 2
Failed Connection Attempts	= 6795
Reset Connections	= 87
Current Connections	= 0
Segments Received	= 75598
Segments Sent	= 64175
Segments Retransmitted	= 2845

#### UDP Statistics for IPv4

Datagrams Received	= 7062487
No Ports	= 115088
Receive Errors	= 2
Datagrams Sent	= 1779833

#### UDP Statistics for IPv6

Datagrams Received	= 214014
No Ports	= 0
Receive Errors	= 0
Datagrams Sent	= 148803

Q6

```
C:\Users\KIIT>nslookup www.kiit.ac.in
DNS request timed out.
    timeout was 2 seconds.
Server:  UnKnown
Address: 192.168.102.1

DNS request timed out.
    timeout was 2 seconds.
DNS request timed out.
    timeout was 2 seconds.
Non-authoritative answer:
DNS request timed out.
    timeout was 2 seconds.
Name:     www.kiit.ac.in
Addresses: 104.21.79.189
          172.67.147.28
```

Q7

```
C:\Users\KIIT>nslookup 8.8.8.8
DNS request timed out.
    timeout was 2 seconds.
Server:  UnKnown
Address: 192.168.102.1

Name:     dns.google
Address:  8.8.8.8
```

Q8

```
C:\Users\KIIT>nslookup www.example.com 8.8.8.8
Server:  dns.google
Address:  8.8.8.8

DNS request timed out.
    timeout was 2 seconds.
Non-authoritative answer:
DNS request timed out.
    timeout was 2 seconds.
Name:     www.example.com
Address:  93.184.215.14
```

Q9

```
C:\Users\KIIT>ipconfig -all

Windows IP Configuration

Host Name . . . . . : पे चक्स
Primary Dns Suffix . . . . . :
Node Type . . . . . : Mixed
IP Routing Enabled. . . . . : No
WINS Proxy Enabled. . . . . : No
DNS Suffix Search List. . . . . : dhcp02


Ethernet adapter vEthernet (WSL (Hyper-V firewall)):
```

```

Connection-specific DNS Suffix . . :
Description . . . . . : Hyper-V Virtual Ethernet Adapter
Physical Address. . . . . : 00-15-5D-26-DC-EA
DHCP Enabled. . . . . : No
Autoconfiguration Enabled . . . . : Yes
Link-local IPv6 Address . . . . . : fe80::3d4:7b0b:6c27:139b%43(Preferred)
IPv4 Address. . . . . : 172.17.160.1(Preferred)
Subnet Mask . . . . . : 255.255.240.0
Default Gateway . . . . . :
DHCPv6 IAID . . . . . : 721425757
DHCPv6 Client DUID. . . . . : 00-01-00-01-2A-B3-81-F3-C4-BD-E5-7C-19-1A
NetBIOS over Tcpip. . . . . : Enabled


Wireless LAN adapter Local Area Connection* 3:
```

```

Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . :
Description . . . . . : Microsoft Wi-Fi Direct Virtual Adapter #3
Physical Address. . . . . : C4-BD-E5-7C-19-1B
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes


Wireless LAN adapter Local Area Connection* 4:
```

```

Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . :
Description . . . . . : Microsoft Wi-Fi Direct Virtual Adapter #4
Physical Address. . . . . : C6-BD-E5-7C-19-1A
DHCP Enabled. . . . . : No
Autoconfiguration Enabled . . . . : Yes


Ethernet adapter VMware Network Adapter VMnet1:
```

```

Connection-specific DNS Suffix . :
Description . . . . . : VMware Virtual Ethernet Adapter for VMnet1
Physical Address. . . . . : 00-50-56-C0-00-01
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes
Link-local IPv6 Address . . . . . : fe80::938e:4fd:30dd:506f%13(Preferred)
```

```
Autoconfiguration Enabled . . . . : Yes
Link-local IPv6 Address . . . . : fe80::938e:4fd:30dd:506f%13(Preferred)
IPv4 Address. . . . . : 192.168.230.1(Preferred)
Subnet Mask . . . . . : 255.255.255.0
Lease Obtained. . . . . : 13 August 2024 18:48:22
Lease Expires . . . . . : 13 August 2024 22:04:47
Default Gateway . . . . . :
DHCP Server . . . . . : 192.168.230.254
DHCPv6 IAID . . . . . : 553668694
DHCPv6 Client DUID. . . . . : 00-01-00-01-2A-B3-81-F3-C4-BD-E5-7C-19-1A
NetBIOS over Tcpip. . . . . : Enabled
```

Ethernet adapter VMware Network Adapter VMnet8:

```
Connection-specific DNS Suffix . :
Description . . . . . : VMware Virtual Ethernet Adapter for VMnet8
Physical Address. . . . . : 00-50-56-C0-00-08
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes
Link-local IPv6 Address . . . . : fe80::5c65:9078:97c2:5222%7(Preferred)
IPv4 Address. . . . . : 192.168.17.1(Preferred)
Subnet Mask . . . . . : 255.255.255.0
Lease Obtained. . . . . : 13 August 2024 18:48:22
Lease Expires . . . . . : 13 August 2024 22:04:47
Default Gateway . . . . . :
DHCP Server . . . . . : 192.168.17.254
DHCPv6 IAID . . . . . : 570445910
DHCPv6 Client DUID. . . . . : 00-01-00-01-2A-B3-81-F3-C4-BD-E5-7C-19-1A
Primary WINS Server . . . . . : 192.168.17.2
NetBIOS over Tcpip. . . . . : Enabled
```

Wireless LAN adapter Wi-Fi:

```
Connection-specific DNS Suffix . : dhcp02
Description . . . . . : Intel(R) Wi-Fi 6 AX201 160MHz
Physical Address. . . . . : C4-BD-E5-7C-19-1A
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes
Link-local IPv6 Address . . . . : fe80::2b44:bc90:e8bd:4f8a%8(Preferred)
IPv4 Address. . . . . : 10.2.200.252(Preferred)
Subnet Mask . . . . . : 255.255.240.0
Lease Obtained. . . . . : 13 August 2024 21:31:00
Lease Expires . . . . . : 13 August 2024 22:06:48
Default Gateway . . . . . : 10.2.192.1
DHCP Server . . . . . : 10.20.3.16
DHCPv6 IAID . . . . . : 169918875
DHCPv6 Client DUID. . . . . : 00-01-00-01-2A-B3-81-F3-C4-BD-E5-7C-19-1A
DNS Servers . . . . . : 192.168.102.1
                        10.2.0.21
                        8.8.8.8
NetBIOS over Tcpip. . . . . : Enabled
```

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Q10

```
C:\Users\KIIT>ipconfig -renew

Windows IP Configuration

No operation can be performed on Local Area Connection* 3 while it has its media disconnected.
No operation can be performed on Local Area Connection* 4 while it has its media disconnected.

Ethernet adapter vEthernet (WSL (Hyper-V firewall)):
```

Connection-specific DNS Suffix	:	:
Link-local IPv6 Address . . . . .	:	fe80::3d4:7b0b:6c27:139b%43
IPv4 Address. . . . .	:	172.17.160.1
Subnet Mask . . . . .	:	255.255.240.0
Default Gateway . . . . .	:	:

```
Wireless LAN adapter Local Area Connection* 3:

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

Wireless LAN adapter Local Area Connection* 4:

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

Ethernet adapter VMware Network Adapter VMnet1:
```

Connection-specific DNS Suffix	:	:
Link-local IPv6 Address . . . . .	:	fe80::938e:4fd:30dd:506f%13
IPv4 Address. . . . .	:	192.168.230.1
Subnet Mask . . . . .	:	255.255.255.0
Default Gateway . . . . .	:	:

```
Ethernet adapter VMware Network Adapter VMnet8:
```

Connection-specific DNS Suffix	:	:
Link-local IPv6 Address . . . . .	:	fe80::5c65:9078:97c2:5222%7
IPv4 Address. . . . .	:	192.168.17.1
Subnet Mask . . . . .	:	255.255.255.0
Default Gateway . . . . .	:	:

```
Wireless LAN adapter Wi-Fi:
```

Connection-specific DNS Suffix	:	dhcp02
Link-local IPv6 Address . . . . .	:	fe80::2b44:bc90:e8bd:4f8a%8
IPv4 Address. . . . .	:	10.2.254.13
Subnet Mask . . . . .	:	255.255.240.0
Default Gateway . . . . .	:	10.2.240.1

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```
C:\Users\KIIT>ipconfig -release

Windows IP Configuration

No operation can be performed on Local Area Connection* 3 while it has its media disconnected.

Ethernet adapter vEthernet (WSL (Hyper-V firewall)):
```

Connection-specific DNS Suffix	:	
Link-local IPv6 Address . . . . .	:	fe80::3d4:7b0b:6c27:139b%43
IPv4 Address. . . . .	:	172.17.160.1
Subnet Mask . . . . .	:	255.255.240.0
Default Gateway . . . . .	:	

```
Wireless LAN adapter Local Area Connection* 3:

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

Wireless LAN adapter Local Area Connection* 4:

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

Ethernet adapter VMware Network Adapter VMnet1:
```

Connection-specific DNS Suffix	:	
Link-local IPv6 Address . . . . .	:	fe80::938e:4fd:30dd:506f%13
Default Gateway . . . . .	:	

```
Ethernet adapter VMware Network Adapter VMnet8:
```

Connection-specific DNS Suffix	:	
Link-local IPv6 Address . . . . .	:	fe80::5c65:9078:97c2:5222%7
IPv4 Address. . . . .	:	192.168.17.1
Subnet Mask . . . . .	:	255.255.255.0
Default Gateway . . . . .	:	

```
Wireless LAN adapter Wi-Fi:

Connection-specific DNS Suffix  . :
Link-local IPv6 Address . . . . . : fe80::2b44:bc90:e8bd:4f8a%8
Default Gateway . . . . . :
```

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