

Record the following TCP/IP information for computer

- a) IPv4 Address : 172.21.20.78
- b) Subnet Mask : 255.255.254.0
- c) Default Gateway : 172.21.20.1

Compare this computer's TCP/IP configuration to that of others on the LAN

- 1. Are there any similarities?
 - a) Yes
- 2. What is similar about the IP address?
 - b) Network part is same and host part is different. My host part is 78 and other device host part is 71.
- 3. What is similar about the default gateway?
 - c) Gateways are totally same because both devices are using same network.
- 4. Is there anything similar about subnet mask?
 - d) Yes subnet is similar of both devices.

Write IP addresses of three devices

- **172.21.20.35**
- **172.21.20.149**
- **172.21.20.60**

Check Additional TCP/IP configuration information

- a) Host Name : systemlab1-49
- b) Physical Address : BC-E9-2F-A4-91-4A
- c) IPv4 Address : 172.21.20.78
- d) Subnet Mask : 255.255.254.0
- e) Default Gateway : 172.21.20.1
- f) DNS Servers : 172.29.97.225

In the LAN, compare your results with a few nearby computers. What similarities do you see in the physical (MAC) address?

- First 4 parts are same and last two are different from each other.

Write down the computer's host name?

- Host Name : systemlab1-49

Write down the host name of couple of other computers?

- I. systemlab1-5
- II. systemlab1-1
- III. systemlab1-14
- IV. systemlab1-15

Ask the IP address of the nearby computers and ping. Note the result.

- Results were successful.

```
C:\Users\Riphah>ping 172.21.20.71

Pinging 172.21.20.71 with 32 bytes of data:
Reply from 172.21.20.71: bytes=32 time=2ms TTL=128
Reply from 172.21.20.71: bytes=32 time=2ms TTL=128
Reply from 172.21.20.71: bytes=32 time=2ms TTL=128
Reply from 172.21.20.71: bytes=32 time=2ms TTL=128

Ping statistics for 172.21.20.71:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 2ms, Maximum = 2ms, Average = 2ms
```

Ping the IP address of default gateway and DNS server. Were the results successful?

- Results were successful.

```
C:\Users\Riphah>ping 172.21.20.1

Pinging 172.21.20.1 with 32 bytes of data:
Reply from 172.21.20.1: bytes=32 time=1ms TTL=64
Reply from 172.21.20.1: bytes=32 time=1ms TTL=64
Reply from 172.21.20.1: bytes=32 time<1ms TTL=64
Reply from 172.21.20.1: bytes=32 time=1ms TTL=64

Ping statistics for 172.21.20.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms
```

```
C:\Users\Riphah>ping 172.29.97.225

Pinging 172.29.97.225 with 32 bytes of data:
Reply from 172.29.97.225: bytes=32 time=4ms TTL=125
Reply from 172.29.97.225: bytes=32 time=4ms TTL=125
Reply from 172.29.97.225: bytes=32 time=5ms TTL=125
Reply from 172.29.97.225: bytes=32 time=7ms TTL=125

Ping statistics for 172.29.97.225:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 4ms, Maximum = 7ms, Average = 5ms
```

Ping the Loop back ip address. Type the following address.

Ping 127.0.0.1

If loop back testing is successful then the TCP/IP is properly installed and functioning on this computer. Is it successful?

- Yes It is successful.

```
C:\Users\Riphah>ping 127.0.0.1

Pinging 127.0.0.1 with 32 bytes of data:
Reply from 127.0.0.1: bytes=32 time<1ms TTL=128
Reply from 127.0.0.1: bytes=32 time<1ms TTL=128
Reply from 127.0.0.1: bytes=32 time<1ms TTL=128
Reply from 127.0.0.1: bytes=32 time<1ms TTL=128

Ping statistics for 127.0.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

Ping the host name of the computer that you recorded in previous part?

```
C:\Users\Riphah>ping systemlab1-5
```

```
Pinging systemlab1-5 [fe80::8009:2a41:8357:3448%18] with 32 bytes of data:
```

```
Reply from fe80::8009:2a41:8357:3448%18: time=2ms
```

```
Reply from fe80::8009:2a41:8357:3448%18: time=2ms
```

```
Reply from fe80::8009:2a41:8357:3448%18: time=2ms
```

```
Reply from fe80::8009:2a41:8357:3448%18: time=2ms
```

```
Ping statistics for fe80::8009:2a41:8357:3448%18:
```

```
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
```

```
Approximate round trip times in milli-seconds:
```

```
    Minimum = 2ms, Maximum = 2ms, Average = 2ms
```

Ping the Microsoft website www.microsoft.com

```
C:\Users\Riphah>ping www.microsoft.com
```

```
Pinging e13678.dscb.akamaiedge.net [184.26.130.100] with 32 bytes of data:
```

```
Reply from 184.26.130.100: bytes=32 time=180ms TTL=49
```

```
Reply from 184.26.130.100: bytes=32 time=181ms TTL=49
```

```
Reply from 184.26.130.100: bytes=32 time=181ms TTL=49
```

```
Reply from 184.26.130.100: bytes=32 time=180ms TTL=49
```

```
Ping statistics for 184.26.130.100:
```

```
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
```

```
Approximate round trip times in milli-seconds:
```

```
    Minimum = 180ms, Maximum = 181ms, Average = 180ms
```

Trace the route to Riphah International University's Website

Type tracert www.riphah.edu.pk and press Enter key

```

C:\Users\Riphah>ping www.microsoft.com

Pinging e13678.dscb.akamaiedge.net [184.26.130.100] with 32 bytes of data:
Reply from 184.26.130.100: bytes=32 time=180ms TTL=49
Reply from 184.26.130.100: bytes=32 time=181ms TTL=49
Reply from 184.26.130.100: bytes=32 time=181ms TTL=49
Reply from 184.26.130.100: bytes=32 time=180ms TTL=49

Ping statistics for 184.26.130.100:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 180ms, Maximum = 181ms, Average = 180ms

C:\Users\Riphah>tracert www.riphah.edu.pk

Tracing route to www.riphah.edu.pk [172.31.121.76]
over a maximum of 30 hops:

  1      *          *          *      Request timed out.
  2     10 ms      5 ms      4 ms    10.10.250.61
  3      5 ms      5 ms      6 ms    10.1.1.254
  4      6 ms      6 ms      5 ms    riphah.edu.pk [172.31.121.76]

Trace complete.

```

Trace a local host name or IP address in your local area network (LAN).

```

C:\Users\Riphah>tracert 172.21.20.71

Tracing route to SYSTEMLAB1-5 [172.21.20.71]
over a maximum of 30 hops:

  1      2 ms      2 ms      <1 ms    SYSTEMLAB1-5 [172.21.20.71]

Trace complete.

```

Also see “pathping ip or host” command. Which only shows path from source to destination.

```
C:\Users\Riphah>pathping 172.21.20.71
```

```
Tracing route to SYSTEMLAB1-5 [172.21.20.71]  
over a maximum of 30 hops:
```

```
 0  systemlab1-49 [172.21.20.78]  
 1  SYSTEMLAB1-5 [172.21.20.71]
```

```
Computing statistics for 25 seconds...
```

Hop	RTT	Source to Here Lost/Sent = Pct	This Node/Link Lost/Sent = Pct	Address
0				systemlab1-49 [172.21.20.78]
			0/ 100 = 0%	
1	1ms	0/ 100 = 0%	0/ 100 = 0%	SYSTEMLAB1-5 [172.21.20.71]

```
Trace complete.
```