

## Lab 1

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## PART A

```
Wireless LAN adapter Wi-Fi:

Connection-specific DNS Suffix . : 
Description . . . . . : Realtek 8822CE Wireless LAN 802.11ac PCI-E NIC
Physical Address. . . . . : DC-E9-94-8B-D8-99
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes
IPv6 Address. . . . . : 2402:1980:823c:9e46:872:64cd:2794:d1aa(Preferred)
Temporary IPv6 Address. . . . . : 2402:1980:823c:9e46:2859:aab2:a1f5:229f(Preferred)
Link-local IPv6 Address . . . . . : fe80::872:64cd:2794:d1aa%9(Preferred)
IPv4 Address. . . . . : 172.20.10.6(Preferred)
Subnet Mask . . . . . : 255.255.255.240
Lease Obtained. . . . . : Sunday, 6 April, 2025 9:30:30 PM
Lease Expires . . . . . : Sunday, 6 April, 2025 10:30:29 PM
Default Gateway . . . . . : fe80::a89c:78ff:fe8b:1664%9
                          172.20.10.1
DHCP Server . . . . . : 172.20.10.1
DHCPv6 IAID . . . . . : 98363796
DHCPv6 Client DUID. . . . . : 00-01-00-01-2D-74-F3-16-00-E0-4C-36-05-75
DNS Servers . . . . . : fe80::a89c:78ff:fe8b:1664%9
                          172.20.10.1
NetBIOS over Tcpip. . . . . : Enabled
```

```
C:\Command Prompt
Wireless LAN adapter Wi-Fi:

Connection-specific DNS Suffix . : 
IPv6 Address. . . . . : 2402:1980:823c:9e46:872:64cd:2794:d1aa
Temporary IPv6 Address. . . . . : 2402:1980:823c:9e46:d5be:f587:9851:d620
Link-local IPv6 Address . . . . . : fe80::872:64cd:2794:d1aa%9
IPv4 Address. . . . . : 10.61.78.6
Subnet Mask . . . . . : 255.255.224.0
Default Gateway . . . . . : fe80::a89c:78ff:fe8b:1664%9
                          10.61.95.254

Ethernet adapter Bluetooth Network Connection:

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

C:\Users\User>ping 10.61.78.6

Pinging 10.61.78.6 with 32 bytes of data:
Reply from 10.61.78.6: bytes=32 time<1ms TTL=65
Reply from 10.61.78.6: bytes=32 time<1ms TTL=65
Reply from 10.61.78.6: bytes=32 time<1ms TTL=65
Reply from 10.61.78.6: bytes=32 time<1ms TTL=65

Ping statistics for 10.61.78.6:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\Users\User>
```

1.

```
C:\Users\User>ping 10.61.95.254

Pinging 10.61.95.254 with 32 bytes of data:
Request timed out.
Reply from 10.61.78.6: Destination host unreachable.
Request timed out.
Request timed out.

Ping statistics for 10.61.95.254:
    Packets: Sent = 4, Received = 1, Lost = 3 (75% loss),

C:\Users\User>
```

2.

3.

```
C:\Users\User>ping google.com

Pinging google.com [2404:6800:4001:808::200e] with 32 bytes of data:
Reply from 2404:6800:4001:808::200e: time=95ms
Reply from 2404:6800:4001:808::200e: time=110ms
Reply from 2404:6800:4001:808::200e: time=34ms
Reply from 2404:6800:4001:808::200e: time=114ms

Ping statistics for 2404:6800:4001:808::200e:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 34ms, Maximum = 114ms, Average = 88ms
```

## PART B

1.

```
C:\Users\User>ping 172.20.10.6

Pinging 172.20.10.6 with 32 bytes of data:
Reply from 172.20.10.6: bytes=32 time<1ms TTL=65
Reply from 172.20.10.6: bytes=32 time<1ms TTL=65
Reply from 172.20.10.6: bytes=32 time<1ms TTL=65
Reply from 172.20.10.6: bytes=32 time<1ms TTL=65

Ping statistics for 172.20.10.6:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

2.

```
C:\Users\User>ping 172.20.10.1

Pinging 172.20.10.1 with 32 bytes of data:
Reply from 172.20.10.1: bytes=32 time=33ms TTL=64
Reply from 172.20.10.1: bytes=32 time=4ms TTL=64
Reply from 172.20.10.1: bytes=32 time=4ms TTL=64
Reply from 172.20.10.1: bytes=32 time=4ms TTL=64

Ping statistics for 172.20.10.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 4ms, Maximum = 33ms, Average = 11ms
```

3.

```
C:\Users\User>ping google.com

Pinging google.com [2404:6800:4001:808::200e] with 32 bytes of data:
Reply from 2404:6800:4001:808::200e: time=92ms
Reply from 2404:6800:4001:808::200e: time=100ms
Reply from 2404:6800:4001:808::200e: time=208ms
Reply from 2404:6800:4001:808::200e: time=111ms

Ping statistics for 2404:6800:4001:808::200e:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 92ms, Maximum = 208ms, Average = 127ms
```

4. If all pings respond, network is working correctly. If only local pings work, there is problem with gateway or DNS. If no pings work, IP or adapter have some issues.

```

C:\Users\User>ipconfig /all

Windows IP Configuration

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

Ethernet adapter Ethernet 7:

Connection-specific DNS Suffix . . :
Description . . . . . : VirtualBox Host-Only Ethernet Adapter
Physical Address. . . . . : 0A-00-27-00-00-12
DHCP Enabled. . . . . : No
Autoconfiguration Enabled . . . . : Yes
Link-Local IPv6 Address . . . . . : fe80::7cc8:742b:5747:dd5e%18(Preferred)
IPv4 Address. . . . . : 192.168.56.1(Preferred)
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . :
DHCPv6 IAID . . . . . : 722075687
DHCPv6 Client DUID. . . . . : 00-01-00-01-2D-74-F3-16-00-E0-4C-36-05-75
DNS Servers . . . . . : fec0:0:0:ffff::1%1
                       : fec0:0:0:ffff::2%1
                       : fec0:0:0:ffff::3%1
NetBIOS over Tcpip. . . . . : Enabled

Wireless LAN adapter Local Area Connection* 9:

Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . . :
Description . . . . . : Microsoft Wi-Fi Direct Virtual Adapter
Physical Address. . . . . : DE-E9-94-8B-D8-99
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes

Wireless LAN adapter Local Area Connection* 11:

Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . . :
Description . . . . . : Microsoft Wi-Fi Direct Virtual Adapter #3
Physical Address. . . . . : FE-E9-94-8B-D8-99
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes

Wireless LAN adapter Wi-Fi:

Connection-specific DNS Suffix . . :
Description . . . . . : Realtek 8822CE Wireless LAN 802.11ac PCI-E NIC
Physical Address. . . . . : DC-E9-94-8B-D8-99
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes
IPv6 Address. . . . . : 2402:1980:823c:9e46:872:64cd:2794:d1aa(Preferred)
Temporary IPv6 Address. . . . . : 2402:1980:823c:9e46:d5be:f587:9851:d620(Preferred)
Link-Local IPv6 Address . . . . . : fe80::872:64cd:2794:d1aa%9(Preferred)
IPv4 Address. . . . . : 172.20.10.6(Preferred)
Subnet Mask . . . . . : 255.255.255.240
Lease Obtained. . . . . : Sunday, 6 April, 2025 9:54:04 PM
Lease Expires . . . . . : Sunday, 6 April, 2025 10:54:04 PM
Default Gateway . . . . . : fe80::a89c:78ff:fe8b:1664%9
                       : 172.20.10.1
DHCP Server . . . . . : 172.20.10.1
DHCPv6 IAID . . . . . : 98363796
DHCPv6 Client DUID. . . . . : 00-01-00-01-2D-74-F3-16-00-E0-4C-36-05-75
DNS Servers . . . . . : fe80::a89c:78ff:fe8b:1664%9
                       : 172.20.10.1
NetBIOS over Tcpip. . . . . : Enabled

Ethernet adapter Bluetooth Network Connection:

Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . . :
Description . . . . . : Bluetooth Device (Personal Area Network)
Physical Address. . . . . : DC-E9-94-8B-D8-9A
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes

```

5.

```

Tracing route to ump.edu.my [103.53.35.87]
over a maximum of 30 hops:

  0  4 ms  3 ms  3 ms  172.20.10.1
  1  *    67 ms 40 ms 16.1.141.22
  2  *    *    *    Request timed out.
  3  *    58 ms 19 ms 10.132.61.194
  4  *    51 ms 23 ms 172.21.22.79
  5  *    *    *    Request timed out.
  6  40 ms 21 ms 30 ms 172.21.2.250
  7  *    *    *    Request timed out.
  8  *    *    *    Request timed out.
  9  *    *    *    Request timed out.
 10  *    *    *    Request timed out.
 11 24 ms 23 ms 22 ms 223.28.47.230
 12 92 ms 23 ms 23 ms 202.185.6.218
 13 34 ms 34 ms 28 ms 100.100.20.134
 14 51 ms 30 ms 28 ms 103.17.78.6
 15  *    *    *    Request timed out.

```

6.a.

```

C:\Users\User>tracert google.com

Tracing route to google.com [2404:6800:4001:803::200e]
over a maximum of 30 hops:

  1  2 ms  2 ms  2 ms  2402:1980:823c:9e46:d06a:abf2:a8a7:e266
  2 120 ms 101 ms 100 ms 2402:1980:8238:8008::2
  3 * * * Request timed out.
  4 28 ms 17 ms 19 ms 2402:1980:fe01:4f::2
  5 * * * Request timed out.
  6 * 141 ms 101 ms 2001:4458:4000:402::ac15:13b3
  7 112 ms * 160 ms 2001:4860:1:1::299e
  8 68 ms 97 ms 101 ms 2404:6800:8039::1
  9 * 95 ms * 2001:4860:0:1::2a64
 10 98 ms 101 ms 101 ms 2001:4860:0:1::7eca
 11 23 ms * 30 ms 2001:4860:0:1::7e95
 12 144 ms 100 ms 101 ms 2001:4860:0:1::3c5
 13 152 ms 98 ms 100 ms kul09s14-in-x0e.1e100.net [2404:6800:4001:803::200e]

Trace complete.

```

6.b.

Each line shows a hop(router).First hop is the default gateway.Each number shows response time(ms) to that hop.Last line is the destination IP/domain.

```

C:\Users\User>nslookup google.com
Server: UnKnown
Address: fe80::a89c:78ff:fe8b:1664

Non-authoritative answer:
Name: google.com
Addresses: 2404:6800:4001:808::200e
          142.250.199.14

```

7.a.

7.b.Shows DNS Server used.Shows resolved Ip addresses of the domain.

```

C:\Users\User>nslookup ump.edu.my
Server: UnKnown
Address: fe80::a89c:78ff:fe8b:1664

Non-authoritative answer:
Name: ump.edu.my
Address: 103.53.35.87

```

7.c.

```

C:\Users\User>nslookup google.com
Server: UnKnown
Address: fe80::a89c:78ff:fe8b:1664

Non-authoritative answer:
Name: google.com
Addresses: 2404:6800:4001:808::200e
          142.250.199.14

```

7.d

Look for the name, means domain name. Address means IP address. The Aliases means alternative domain names.