

CN LAB 01

1. Find the IP address of the computer you are currently using.

Command: ipconfig

IP address: 192.168.77.57

Image:

```
Wireless LAN adapter WiFi:

    Connection-specific DNS Suffix  . : 
    Link-local IPv6 Address . . . . . : fe80::c8ea:3f66:afe9:b45%7
    IPv4 Address. . . . . : 192.168.77.57
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 192.168.77.16

C:\Users\usama>
```

2. Find the IP address of the computer you are currently using, plus MAC address, plus whether DHCP is turned on.

Command: ipconfig/all

IP address: 192.168.77.57

MAC address: AC-D5-64-D6-53-2B

DHCP Enabled: YES

Image:

```
Wireless LAN adapter WiFi:

    Connection-specific DNS Suffix  . : 
    Description . . . . . : Realtek RTL8821CE 802.11ac PCIe Adapter
    Physical Address. . . . . : AC-D5-64-D6-53-2B
    DHCP Enabled. . . . . : Yes
    Autoconfiguration Enabled . . . . : Yes
    Link-local IPv6 Address . . . . . : fe80::c8ea:3f66:afe9:b45%7(Preferred)
    IPv4 Address. . . . . : 192.168.77.57(Preferred)
    Subnet Mask . . . . . : 255.255.255.0
    Lease Obtained. . . . . : 29 January 2023 12:25:39
    Lease Expires . . . . . : 29 January 2023 14:55:35
    Default Gateway . . . . . : 192.168.77.16
    DHCP Server . . . . . : 192.168.77.16
    DHCPv6 IAID . . . . . : 380425572
    DHCPv6 Client DUID. . . . . : 00-01-00-01-29-99-1B-02-AC-D5-64-D6-53-2B
    DNS Servers . . . . . : 192.168.77.16
    NetBIOS over Tcpip. . . . . : Enabled

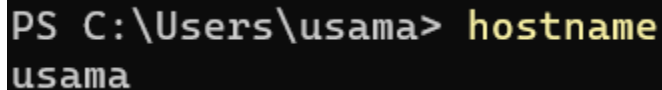
C:\Users\usama>
```

3. Display the host name of the computer.

Command: hostname

Hostname: usama

Image:



```
PS C:\Users\usama> hostname
usama
```

4. Check for basic IP connectivity between two computers by name and IP address. How can basic IP connectivity be checked? What are the reasons why there is no connectivity?

Command: ping 8.8.8.8 or ping google.com

Reason: network availability issue or firewall is blocking ICMP ping packets

5. Show the MAC address of the host.

Command: getmac

MAC address: AC-D5-64-D6-53-2B

6. Show what shared resources are available on the host.

Command: net share

Answer:

```
C:\Users\usama>net share
```

Share name	Resource	Remark
C\$	C:\	Default share
D\$	D:\	Default share
E\$	E:\	Default share
F\$	F:\	Default share
IPC\$		Remote IPC
ADMIN\$	C:\WINDOWS	Remote Admin

```
The command completed successfully.
```

```
C:\Users\usama>
```

7. Find out which ports on your host are connected to applications. Connect the browser to some external web page before running the appropriate command.

Command: netstat -ano

Answer: This command shows all ports that are currently running a service

8. Find all other hosts available on the network.

Command: arp -a

Image:

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

```
Interface: 192.168.77.57 --- 0x7
```

Internet Address	Physical Address	Type
192.168.77.16	b2-cf-2d-10-ae-ed	dynamic
192.168.77.255	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

9. Show the address of the gateway.

Command: ipconfig

Image:

```
Wireless LAN adapter WiFi:
```

```
Connection-specific DNS Suffix . :  
Link-local IPv6 Address . . . . . : fe80::c8ea:3f66:afe9:b45%7  
IPv4 Address. . . . . : 192.168.77.57  
Subnet Mask . . . . . : 255.255.255.0  
Default Gateway . . . . . : 192.168.77.16
```

```
C:\Users\usama>|
```

10. Find the path of routers to www.google.com. What is its IP address?
How many hops involved in the path?

Command: tracert google.com

Answer: [142.250.181.174]

Number of hops: 14

```
PS C:\Users\usama> tracert google.com

Tracing route to google.com [142.250.181.174]
over a maximum of 30 hops:

  1  973 ms  463 ms  195 ms  broadcom.home [192.168.10.1]
  2   79 ms  142 ms   *      182.176.0.125
  3  155 ms   53 ms  101 ms  10.0.4.29 [10.0.4.29]
  4  146 ms   94 ms   77 ms  10.253.4.122 [10.253.4.122]
  5  339 ms  997 ms  933 ms  10.253.4.28 [10.253.4.28]
  6  175 ms  151 ms  186 ms  72.14.211.72
```

11. A ping to 192.168.0.2 works but a ping to the machine's name "blue machine" fails. What could be wrong?

Reason:

- 1. DNS resolution issue**
- 2. Hostname configuration**
- 3. Firewall**

12. Which type of cable will you use to connect in a normal home installation? Give reasons.

Answer: In most homes a RJ45 cable or a fibre optic cable are used.

13. Can you connect a Switch to another Switch or a router to a PC using a straight-through cable? Explain your answer.

Answer: Yes you can, a straight through cable is used to connect different devices.

14. Write a brief report on your home network or any organizational network including topology, 1 page max).

Answer: In our houses we generally use star topology as everything is centrally connected to the routers.

15. Find the path of routers to www.yahoo.com.my. What is its IP address? How many hops are involved in the path?

[74.6.143.25]

Number of Hops: 30

Image:

```
PS C:\Users\usama> tracert yahoo.com

Tracing route to yahoo.com [74.6.143.25]
over a maximum of 30 hops:

  0  62 ms  28 ms  15 ms  csp3.zte.com.cn.home [192.168.10.1]
  1  57 ms  31 ms  30 ms  182.176.0.125
  2  29 ms  29 ms  32 ms  10.0.4.33 [10.0.4.33]
  3  30 ms  31 ms  32 ms  10.253.4.40 [10.253.4.40]
  4  74 ms  59 ms  87 ms  10.253.4.4 [10.253.4.4]
  5  268 ms 197 ms 193 ms  ge-1-3-0.pat1.dee.yahoo.com [80.81.192.115]
  6  208 ms 191 ms 248 ms  ae-0.pat2.dez.yahoo.com [209.191.112.7]
  7  251 ms 390 ms 344 ms  ae-3.pat2.frz.yahoo.com [209.191.112.25]
  8  370 ms 368 ms 259 ms  ae-11.pat1.dce.yahoo.com [209.191.64.24]
  9  297 ms 280 ms 244 ms  ae-14.pat2.nyc.yahoo.com [209.191.64.23]
 10  266 ms 250 ms 280 ms  ae-1.pat1.bfw.yahoo.com [209.191.64.163]
 11  307 ms 275 ms 259 ms  et-1-0-0.msr2.bf1.yahoo.com [74.6.227.45]
```