

CN LAB 01

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QUESTION 01

Command:

```
C:\Users\OK COMPUTER>cd ..  
C:\Users>cd..  
C:\>cd Windows\System32  
C:\Windows\System32>ipconfig  
Windows IP Configuration
```

IP Address:

```
Wireless LAN adapter Wi-Fi:  
  
    Connection-specific DNS Suffix  . :  
    Link-local IPv6 Address . . . . . : fe80::c29:22f7:a743:5a32%6  
    IPv4 Address. . . . . : 192.168.100.163  
    Subnet Mask . . . . . : 255.255.255.0  
    Default Gateway . . . . . : fe80::1%6  
                                192.168.100.1
```

QUESTION 02

IP ADDRESS(DONE IN Q1)

Command:

```
C:\Windows\System32>ipconfig/all
```

MAC ADDRESS and DHCP Enabling:

MAC ADDRESS

Ethernet adapter Ethernet:

Media State : Media disconnected
Connection-specific DNS Suffix . :
Description : Realtek PCIe FE Family Controller
Physical Address. : EC-F4-BB-9A-1C-26
DHCP Enabled. : Yes
Autoconfiguration Enabled : Yes

DHCP

QUESTION 03

Command:

```
C:\Windows\System32>hostname
```

Hostname:

```
OK-COMPUTER
```

QUESTION 04

(Checking connectivity with website)

Command(by name):

```
C:\Windows\System32>ping www.google.com
```

Connectivity:

```
Pinging www.google.com [142.250.181.164] with 32 bytes of data:  
Reply from 142.250.181.164: bytes=32 time=29ms TTL=117  
Reply from 142.250.181.164: bytes=32 time=29ms TTL=117  
Reply from 142.250.181.164: bytes=32 time=24ms TTL=117  
Reply from 142.250.181.164: bytes=32 time=26ms TTL=117  
  
Ping statistics for 142.250.181.164:  
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),  
    Approximate round trip times in milli-seconds:  
        Minimum = 24ms, Maximum = 29ms, Average = 27ms  
  
C:\Windows\System32>
```

OR

Command(by IP Address):

```
C:\Windows\System32>ping 142.250.181.164
```

Connectivity:

```
Pinging 142.250.181.164 with 32 bytes of data:  
Reply from 142.250.181.164: bytes=32 time=28ms TTL=117  
Reply from 142.250.181.164: bytes=32 time=25ms TTL=117  
Reply from 142.250.181.164: bytes=32 time=27ms TTL=117  
Reply from 142.250.181.164: bytes=32 time=39ms TTL=117  
  
Ping statistics for 142.250.181.164:  
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),  
    Approximate round trip times in milli-seconds:  
        Minimum = 25ms, Maximum = 39ms, Average = 29ms
```

How can basic IP connectivity be checked?

Answer: The ping command sends packets of data to the specified IP address and returns the response time which shows that whether there is connectivity between the IP-networked devices or not.

What are the reasons for no connectivity?

Answer:

One reason can be that the computers might not be on the same network. For example, one PC might be using one ISP(through WiFi) and the other PC might be connected to another WiFi. Also, network discovery must be enabled on both the computers to ensure successful connectivity.

QUESTION 05

Command:

```
C:\Windows\System32>ipconfig/all
```

MAC Address of Host:

MAC ADDRESS

```
Ethernet adapter Ethernet:  
  
Media State . . . . . : Media disconnected  
Connection-specific DNS Suffix . :  
Description . . . . . : Realtek PCIe FE Family Controller  
Physical Address. . . . . : EC-F4-BB-9A-1C-26  
DHCP Enabled. . . . . : Yes  
Autoconfiguration Enabled . . . . : Yes
```

QUESTION 06

Command:

```
C:\Windows\System32>net share
```

Answer:

Share name	Resource	Remark
C\$	C:\	Default share
E\$	E:\	Default share
IPC\$		Remote IPC
ADMIN\$	C:\Windows	Remote Admin
The command completed successfully.		

QUESTION 07

Browser connected:

WIKIPEDIA

The Free Encyclopedia

English
6 606 000+ articles

Русский
1 887 000+ статей

日本語
1 359 000+ 記事

Deutsch
2 764 000+ Artikel

Français
2 488 000+ articles

Español
1 833 000+ artículos

Italiano
1 792 000+ voci

中文
1 331 000+ 条目 / 條目

فارسی
947 000+ مقاله

Polski
1 552 000+ hasel

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EN

Read Wikipedia in your language

Command:

```
C:\Windows\System32>netstat
```

Answer:

Active Connections

Proto	Local Address	Foreign Address	State
TCP	192.168.100.163:52141	wk-in-f188:5228	ESTABLISHED
TCP	192.168.100.163:52192	wk-in-f188:5228	ESTABLISHED
TCP	192.168.100.163:54040	fjr04s06-in-f10:https	ESTABLISHED
TCP	192.168.100.163:54185	mct01s21-in-f14:https	ESTABLISHED
TCP	192.168.100.163:54186	mct01s20-in-f4:https	ESTABLISHED
TCP	192.168.100.163:54187	mct01s20-in-f14:https	TIME_WAIT
TCP	192.168.100.163:54199	fjr04s06-in-f10:https	ESTABLISHED
TCP	192.168.100.163:54209	172.66.40.203:https	ESTABLISHED
TCP	192.168.100.163:54210	172.67.136.147:https	ESTABLISHED
TCP	192.168.100.163:54211	172.67.184.146:https	ESTABLISHED
TCP	192.168.100.163:54216	mct01s13-in-f3:https	ESTABLISHED
TCP	192.168.100.163:54227	fjr04s08-in-f3:https	ESTABLISHED
TCP	192.168.100.163:54228	fjr04s08-in-f3:https	ESTABLISHED
TCP	192.168.100.163:54235	mct01s20-in-f14:https	TIME_WAIT
TCP	192.168.100.163:54236	zrh04s07-in-f163:https	TIME_WAIT
TCP	192.168.100.163:54239	mct01s21-in-f1:https	TIME_WAIT
TCP	192.168.100.163:54240	mct01s19-in-f10:https	ESTABLISHED
TCP	192.168.100.163:54244	mct01s21-in-f1:https	TIME_WAIT
TCP	192.168.100.163:54245	mct01s21-in-f1:https	TIME_WAIT
TCP	192.168.100.163:54251	zrh04s07-in-f170:https	TIME_WAIT
TCP	192.168.100.163:54252	mct01s13-in-f2:https	ESTABLISHED
TCP	192.168.100.163:54253	mct01s19-in-f14:https	ESTABLISHED
TCP	192.168.100.163:54254	104.20.19.53:https	ESTABLISHED
TCP	192.168.100.163:54255	fjr04s07-in-f14:https	TIME_WAIT
TCP	192.168.100.163:54257	104.21.73.90:https	ESTABLISHED
TCP	192.168.100.163:54258	mct01s21-in-f8:https	TIME_WAIT
TCP	192.168.100.163:54260	172.67.136.147:https	ESTABLISHED
TCP	192.168.100.163:54262	104.21.59.217:https	ESTABLISHED
TCP	192.168.100.163:54263	mct01s21-in-f14:https	TIME_WAIT
TCP	192.168.100.163:54265	mct01s21-in-f14:https	ESTABLISHED
TCP	192.168.100.163:54266	104.21.59.217:https	ESTABLISHED
TCP	192.168.100.163:54269	wm-in-f154:https	TIME_WAIT
TCP	192.168.100.163:54270	104.22.74.216:https	ESTABLISHED
TCP	192.168.100.163:54271	172.67.75.38:https	ESTABLISHED
TCP	192.168.100.163:54272	arn09s05-in-f14:https	ESTABLISHED
TCP	192.168.100.163:54273	mct01s13-in-f3:https	TIME_WAIT
TCP	192.168.100.163:54274	172.67.189.85:https	ESTABLISHED
TCP	192.168.100.163:54275	104.21.81.4:https	ESTABLISHED

QUESTION 08

Command:

```
C:\Windows\System32>arp -a
```

Answer:

```

Interface: 192.168.100.163 --- 0x6
  Internet Address      Physical Address      Type
  192.168.100.1         5c-b3-95-6a-23-32    dynamic
  192.168.100.255       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: 192.168.189.1 --- 0xa
  Internet Address      Physical Address      Type
  192.168.189.255       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

Interface: 192.168.83.1 --- 0xb
  Internet Address      Physical Address      Type
  192.168.83.255        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

```

QUESTION 09

Command:

```
C:\Windows\System32>ipconfig/all
```

Answer:

```

Default Gateway . . . . . : fe80::1%6
                          192.168.100.1

```

QUESTION 10

Command:

```
C:\Windows\System32>tracert www.google.com
```

Answer:

HOPS

IP Address

```
Tracing route to www.google.com [142.250.181.164]
over a maximum of 30 hops:

  1    7 ms    18 ms    7 ms    192.168.100.1
  2    9 ms    13 ms    8 ms    100.64.192.1
  3    4 ms     4 ms    4 ms    202.141.224.69
  4    8 ms     8 ms    8 ms    119.159.244.86
  5    6 ms    10 ms    4 ms    10.253.4.50
  6    7 ms     6 ms    7 ms    10.253.4.6
  7   33 ms    25 ms   24 ms    72.14.211.72
  8   40 ms    31 ms   32 ms   216.239.41.109
  9   27 ms    26 ms   27 ms    74.125.253.23
 10   25 ms    25 ms   25 ms   mct01s20-in-f4.1e100.net [142.250.181.164]

Trace complete.
```

QUESTION 11

Reason:

It fails because the host blue is not available so it is not accessible. However, the IP address works because it is the default IP address used by many wireless router manufacturers to redirect to the admin panel of the router.

QUESTION 12

Answer:

I will prefer fibre optic cable for connection in my home for the following reasons:

- 1) **High Bandwidth:** These cables offer a much better bandwidth in contrast to the standard metal. It also transmits significantly a greater amount of data per unit time.
- 2) **Better Speed:** To meet the needs of fast browsing, the fibre optic cables are faster than even the best copper wires as their range varies between 5 Mbps to 100 Gbps.

- 3) **Durable:** Fibre optic cables are much lighter in weight and thinner in size. They can also withstand more pressure and resist corrosion in contrast to copper wires that are more prone to damage.

QUESTION 13

Answer:

We can connect a switch to another switch using straight through cable if one switch is using an uplink port and other one is using a normal port. The same is possible to connect a router with PC as straight through cable can be used to connect two different devices. One end of the cable is inserted in the modem while the other end is plugged into WAN/WLAN port of the router.

QUESTION 14

Answer:

An example of network within my home is how different devices are connected to the same internet connection using WiFi. This is an example of **Star Network Topology**. The Internet Service Provider(in my case Optix)provides internet connection to my home through a WiFi router. All the other devices in the home including phone, laptop can then access the internet by connecting with the WiFi connection that the router is providing. The IP address of the router on the devices is same. However, the individual IP address of the devices connected to the internet varies.

QUESTION 15

```
C:\Windows\System32>tracert www.yahoo.com.my
```

```
Tracing route to any-src.a03.yahoodns.net [212.82.100.150]  
over a maximum of 30 hops:
```

1	11 ms	7 ms	11 ms	192.168.100.1
2	77 ms	10 ms	11 ms	100.64.192.1
3	21 ms	4 ms	4 ms	202.141.224.69
4	4 ms	5 ms	7 ms	119.159.244.86
5	5 ms	7 ms	12 ms	10.253.4.50
6	6 ms	5 ms	5 ms	10.253.4.4
7	138 ms	132 ms	145 ms	ge-1-3-0.pat1.dee.yahoo.com [80.81.192.115]
8	247 ms	133 ms	169 ms	ae-3.pat1.frz.yahoo.com [209.191.112.17]
9	149 ms	148 ms	154 ms	ae-2.pat1.iry.yahoo.com [209.191.112.54]
10	148 ms	149 ms	158 ms	ge-0-3-9-d104.pat1.the.yahoo.com [66.196.65.21]
11	158 ms	158 ms	157 ms	lo0.fab1-1-gdc.ir2.yahoo.com [77.238.190.2]
12	163 ms	173 ms	164 ms	usw2-1-lba.ir2.yahoo.com [77.238.190.103]
13	159 ms	164 ms	163 ms	w2.src.vip.ir2.yahoo.com [212.82.100.150]

```
Trace complete.
```

HOPS