

Program: Intro to Cyber

Unit: CFC011023

---

**Project Goal:**

**Understanding Network Map**

**&**

**Wireshark Usage**

---

Student No: S12

Student Name: Ivan Wong Sen Loong

Date of completion: 13 October 2023

## Contents

1.0	Methodology.....	3
1.0.1	Websites and Commands used for constructing network map.....	3
1.0.2	Website and Commands used to get ISP and OS/version .....	5
2.0	Side by Side comparison between the network map and ipconfig /all info .....	6
3.0	Wireshark sniffing into <a href="https://whatismyipaddress.com">https://whatismyipaddress.com</a> .....	11

## 1.0 Methodology

### 1.0.1 Websites and Commands used for constructing network map

#### 1.0.1.1 Website: Draw.io

To construct the network map, I was looking for a website that could let me:

- Easily paste in image
- Edit Text
- Able to link an image/text to one another

And hence, draw.io has become website of choice to construct the network map

#### 1.0.1.2 Commands used

As for getting the info I needed to put into the network map, I opened up CMD (Win key > type "cmd" > press enter) and typed in "**ipconfig /all**" and press enter.

```
C:\Users\user>ipconfig /all
```

*Snippet 1.2: Command "ipconfig /all" in use*

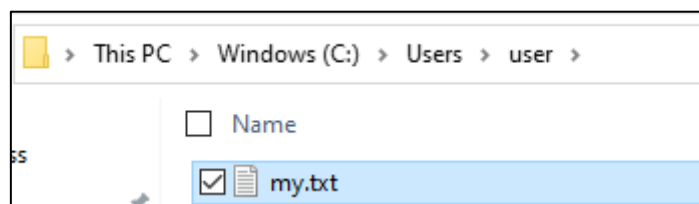
Once I had confirmed that it displayed the following properties:

- Device Name, Internal & External IP, Mac Address, DNS and DHCP

Then I typed in "**ipconfig /all 1>my.txt**" to import all the info into a txt file. I did this so i can easily refer the info generated from ipconfig /all and copy paste the data into my network map in draw.io

```
C:\Users\user>ipconfig /all 1>my.txt
```

*Snippet 1.3: Command "ipconfig /all 1>my.txt" in use*



*Snippet 1.4: The generated my.txt will appear in "C:\Users\user" directory*

1.0.1.3 Website: [What Is My IP Address - See Your Public Address - IPv4 & IPv6](#)

To get my external IP, I simply logged into the above website using my laptop and voila it showed this:

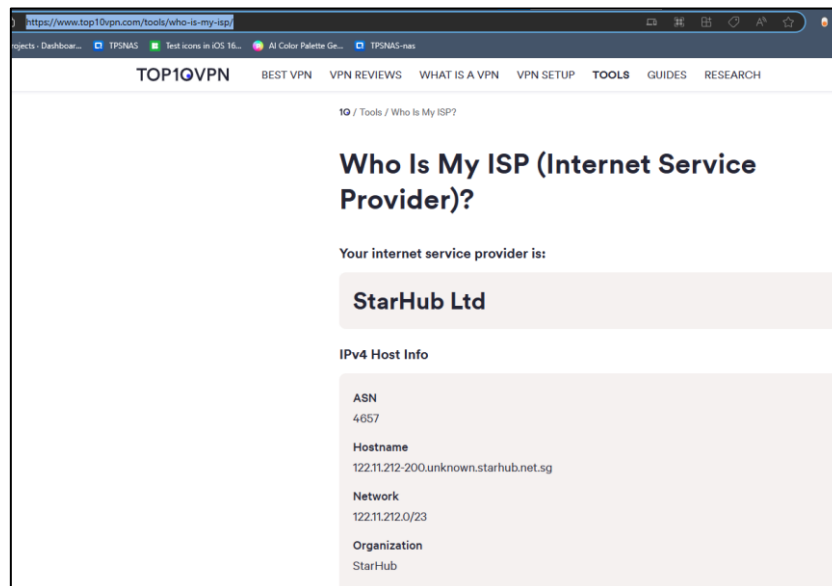


*Snippet 1.5: My external IP assigned by my router*

## 1.0.2 Website and Commands used to get ISP and OS/version

### 1.0.2.1 Websites: [Who Is My ISP? How to Check Your ISP & Why It Matters \(top10vpn.com\)](https://www.top10vpn.com/tools/who-is-my-isp/)

To get my Internet Service Provider (ISP), I would click into this website and it showed me that my ISP is **StarHub Ltd**



### 1.0.2.2 Command: systeminfo

With the cmd open, I typed in "systeminfo" and it had showed me relevant infos about my laptop

```
C:\Users\user>systeminfo
```

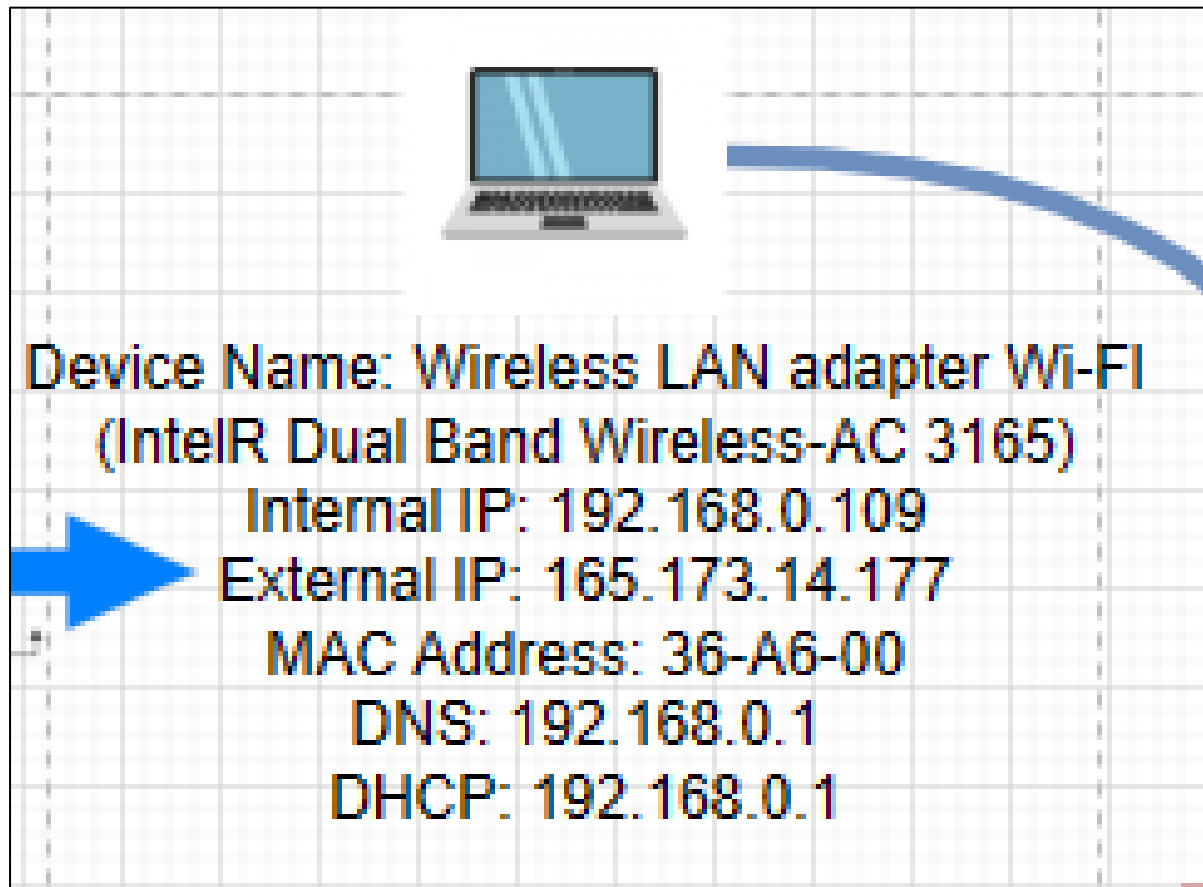
*Snippet 1.6: Getting my systeminfo using systeminfo*

And within the rows of data I would search for keywords like "OS" and "version" and sure enough I would see this:

3	OS Name:	Microsoft Windows 10 Home Single Language
4	OS Version:	10.0.19045 N/A Build 19045

*Snippet 1.7: My OS name and Version shown using the systeminfo command*

## 2.0 Side by Side comparison between the network map and ipconfig /all info



```
Wireless LAN adapter Wi-Fi:

Connection-specific DNS Suffix  . : 
Description . . . . . : Intel(R) Dual Band Wireless-AC 3165
Physical Address. . . . . : 7C-67-A2-36-A6-00
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes
Link-local IPv6 Address . . . . . : fe80::7c2e:8eb8:a697:9a23%5(Preferred)
IPv4 Address. . . . . : 192.168.0.109(Preferred)
Subnet Mask . . . . . : 255.255.255.0
Lease Obtained. . . . . : Tuesday, October 10, 2023 10:00:44 PM
Lease Expires . . . . . : Thursday, October 12, 2023 7:18:05 AM
Default Gateway . . . . . : 192.168.0.1
DHCP Server . . . . . : 192.168.0.1
DHCPv6 IAID . . . . . : 75261858
DHCPv6 Client DUID. . . . . : 00-01-00-01-20-AC-10-06-D4-81-D7-CA-C9-40
DNS Servers . . . . . : 192.168.0.1
NetBIOS over Tcpip. . . . . : Enabled
```



Device Name: Ethernet adapter VMware Network Adapter VMnet1  
(VMware Virtual Ethernet Adapter Adapter for VMnet1)

Internal IP: 192.168.237.1

External IP:

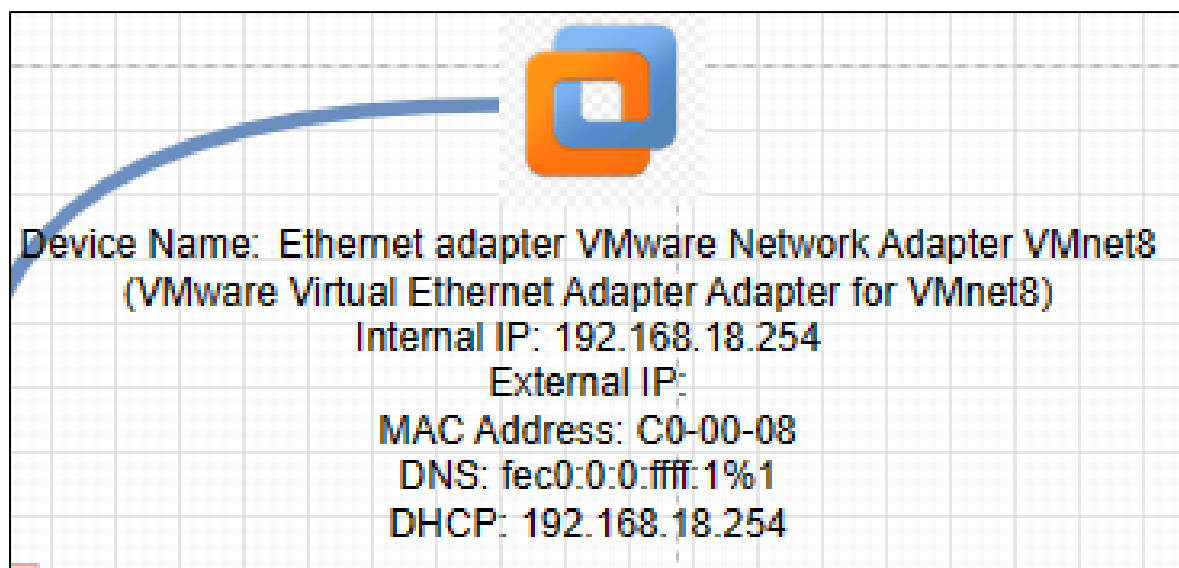
MAC Address: 00-00-01

DNS: fec0:0:0:ffff::1%1

DHCP: 192.168.237.254

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::491a:a1dd:c385:6475%7 (Preferred)  
IPv4 Address. . . . . : 192.168.237.1 (Preferred)  
Subnet Mask . . . . . : 255.255.255.0  
Lease Obtained. . . . . : Wednesday, October 11, 2023 7:18:31 AM  
Lease Expires . . . . . : Wednesday, October 11, 2023 8:48:20 AM  
Default Gateway . . . . . :  
DHCP Server . . . . . : 192.168.237.254  
DHCPv6 IAID . . . . . : 704663638  
DHCPv6 Client DUID. . . . . : 00-01-00-01-20-AC-10-06-D4-81-D7-CA-C9-40  
DNS Servers . . . . . : fec0:0:0:ffff::1%1  
                        fec0:0:0:ffff::2%1  
                        fec0:0:0:ffff::3%1  
NetBIOS over Tcpip. . . . . : Enabled
```

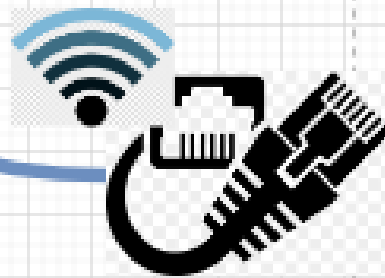


```
Ethernet adapter VMware Network Adapter VMnet8:

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::5ef5:b947:aa87:4d52%15(Preferred)
IPv4 Address. . . . . : 192.168.18.1(Preferred)
Subnet Mask . . . . . : 255.255.255.0
Lease Obtained. . . . . : Wednesday, October 11, 2023 7:18:31 AM
Lease Expires . . . . . : Wednesday, October 11, 2023 8:48:20 AM
Default Gateway . . . . . : 
DHCP Server . . . . . : 192.168.18.254
DHCPv6 IAID . . . . . : 721440854
DHCPv6 Client DUID. . . . . : 00-01-00-01-20-AC-10-06-D4-81-D7-CA-C9-40
DNS Servers . . . . . : fec0:0:0:ffff::1%1
                       : fec0:0:0:ffff::2%1
                       : fec0:0:0:ffff::3%1
Primary WINS Server . . . . . : 192.168.18.2
NetBIOS over Tcpip. . . . . : Enabled
```



connected to:



Device Name: Wireless LAN adapter Local Area Connection\* 3  
(Microsoft Wi-Fi Direct Virtual Adapter #2)

Internal IP: 192.168.137.1

External IP: 165.173.14.177




MAC Address: 36-A6-00

DNS: fec0:0:0:ffff::1%1

DHCP:

Wireless LAN adapter Local Area Connection\* 3:

```
Connection-specific DNS Suffix . . :  
Description . . . . . : Microsoft Wi-Fi Direct Virtual Adapter #2  
Physical Address. . . . . : 7E-67-A2-36-A6-00  
DHCP Enabled. . . . . : No  
Autoconfiguration Enabled . . . . : Yes  
Link-local IPv6 Address . . . . . : fe80::2326:ee0b:7972:10df%14 (Preferred)  
IPv4 Address. . . . . : 192.168.137.1 (Preferred)  
Subnet Mask . . . . . : 255.255.255.0  
Default Gateway . . . . . :  
DHCPv6 IAID . . . . . : 645818274  
DHCPv6 Client DUID. . . . . : 00-01-00-01-20-AC-10-06-D4-81-D7-CA-C9-40  
DNS Servers . . . . . : fec0:0:0:ffff::1%1  
                        : fec0:0:0:ffff::2%1  
                        : fec0:0:0:ffff::3%1  
NetBIOS over Tcpip. . . . . : Enabled
```

	Device Name: Ethernet adapter Ethernet (Realtek PCIe GBE Family Controller) Internal IP: External IP: MAC Address: CA-C9-40 DNS: DHCP:
	Device Name: Ethernet adapter Bluetooth Network Connection Internal IP: External IP: MAC Address: 36-A6-04 DNS: DHCP:
	Device Name: Wireless LAN adapter Local Area Connection* 2 (Microsoft Wi-Fi Direct Virtual Adapter) Internal IP: External IP: MAC Address: 36-A6-01 DNS: DHCP:

Ethernet adapter Bluetooth Network Connection:

```
Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . :
Description . . . . . : Bluetooth Device (Personal Area Network)
Physical Address. . . . . : 7C-67-A2-36-A6-04
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes
```

Ethernet adapter Ethernet:

```
Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . :
Description . . . . . : Realtek PCIe GBE Family Controller
Physical Address. . . . . : D4-81-D7-CA-C9-40
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes
```

Wireless LAN adapter Local Area Connection\* 2:

```
Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . :
Description . . . . . : Microsoft Wi-Fi Direct Virtual Adapter
Physical Address. . . . . : 7C-67-A2-36-A6-01
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes
```

### 3.0 Wireshark sniffing into <https://whatismyipaddress.com>

The screenshot below is my attempt in using wireshark to capture the information of my laptop going into this website (<https://whatismyipaddress.com>). The website's IP address is **172.20.10.1**

The image shows a Wireshark packet capture window and a Windows command prompt window. A red arrow points from the IP address 172.20.10.4 in the command prompt to the same IP address in the Wireshark packet list.

**Wireshark Packet List:**

No.	Time	Source	Destination	Protocol	Length	Info
9868	88.212654	172.20.10.4	172.20.10.1	DNS	71	Standard query 0xa498 A u.openx.net
9869	88.216317	172.20.10.4	172.20.10.1	DNS	71	Standard query 0x503c A u.openx.net
9870	88.218356	172.20.10.4	172.20.10.1	DNS	81	Standard query 0xc87e A whatismyipaddress.com
9871	88.221364	172.20.10.4	172.20.10.1	DNS	75	Standard query 0xcc7d HTTPS ads.yieldmo.com
9872	88.221772	172.20.10.4	172.20.10.1	DNS	75	Standard query 0x63e5 A ads.yieldmo.com
9873	88.222833	172.20.10.1	172.20.10.4	DNS	113	Standard query response 0xc87e A whatismyipaddress.com

**Windows Command Prompt Output:**

```
Wireless LAN adapter Wi-Fi:  
  
Connection-specific DNS Suffix . :  
Description . . . . . : Intel(R) Wireless-AC 9560  
Physical Address. . . . . : 80-00-00-00-00-00  
DHCP Enabled. . . . . : Yes  
Autoconfiguration Enabled . . . . : Yes  
Link-local IPv6 Address . . . . . : fe80::42c6:120b:e00f:ea9e%12(Preferred)  
IPv4 Address. . . . . : 172.20.10.4(Preferred)  
Subnet Mask . . . . . : 255.255.255.240  
Lease Obtained. . . . . : Friday, October 13, 2023 9:48:52 AM  
Lease Expires . . . . . : Saturday, October 14, 2023 4:15:17 PM  
Default Gateway . . . . . : 172.20.10.1  
DHCP Server . . . . . : 172.20.10.1  
DHCPv6 IAID . . . . . : 131921157  
DHCPv6 Client DUID. . . . . : 00-01-00-01-24-97-38-63-80-E8-2C-A2-81-CB  
DNS Servers . . . . . : 172.20.10.1  
NetBIOS over Tcpip. . . . . : Enabled
```