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Section : BCS-5A

LAB NO 1

Computer Networks LAB

Task1: Using Ipconfig retrieve TCP/IP information of your computer. Write down the following information:

- a) IP address
- b) Subnet mask
- c) Default gateway

Solution:

```
C:\Users\et2022>ipconfig

Windows IP Configuration

Ethernet adapter Npcap Loopback Adapter:

    Connection-specific DNS Suffix  . : 
    Link-local IPv6 Address . . . . . : fe80::c44e:b2fe:65b6:ff0f%22
    Autoconfiguration IPv4 Address. . : 169.254.255.15
    Subnet Mask . . . . . : 255.255.0.0
    Default Gateway . . . . . : 

Wireless LAN adapter Local Area Connection* 5:

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

Wireless LAN adapter Local Area Connection* 12:

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

Ethernet adapter VMware Network Adapter VMnet1:

    Connection-specific DNS Suffix  . : 
    Link-local IPv6 Address . . . . . : fe80::75f4:eccf:adb1:71bd%24
    IPv4 Address. . . . . : 192.168.23.1
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 

Ethernet adapter VMware Network Adapter VMnet8:

    Connection-specific DNS Suffix  . : 
    Link-local IPv6 Address . . . . . : fe80::8420:540e:c8d3:1642%7
    IPv4 Address. . . . . : 192.168.79.1
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 

Wireless LAN adapter Wi-Fi 2:

    Connection-specific DNS Suffix  . : 
    Link-local IPv6 Address . . . . . : fe80::50cd:3db0:1a8c:893d%19
    IPv4 Address. . . . . : 172.17.0.66
    Subnet Mask . . . . . : 255.255.252.0
    Default Gateway . . . . . : 172.17.0.2

Ethernet adapter Bluetooth Network Connection 2:

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

IPv4 Address : 172.17.0.66

Subnet Mask : 255.255.252.0

Default Gateway: 172.17.0.0

Task2: Record a couple of IP addresses of your nearby hosts.

1: Wireless LAN adaptor Wi-fi:

IPv4 Address: 172.17.0.78

Subnet Mask: 255.255.252.0

2: Wireless LAN adaptor Wi-fi:

IPv4 Address: 172.17.0.114

Subnet Mask: 255.255.252.0

3: Wireless LAN adaptor Wi-fi:

IPv4 Address: 172.17.0.156

Subnet Mask: 255.255.252.0

Task3: Find your IP address in at least 6 different ways.

1st way: (CMD)

```
C:\Users\et2022>ipconfig

Windows IP Configuration

Ethernet adapter Npcap Loopback Adapter:

    Connection-specific DNS Suffix  . : 
    Link-local IPv6 Address . . . . . : fe80::c44e:b2fe:65b6:ff0f%22
    Autoconfiguration IPv4 Address. . . : 169.254.255.15
    Subnet Mask . . . . . : 255.255.0.0
    Default Gateway . . . . . : 

Wireless LAN adapter Local Area Connection* 5:

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

Wireless LAN adapter Local Area Connection* 12:

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

Ethernet adapter VMware Network Adapter VMnet1:

    Connection-specific DNS Suffix  . : 
    Link-local IPv6 Address . . . . . : fe80::75f4:eccf:adb1:71bd%24
    IPv4 Address. . . . . : 192.168.23.1
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 

Ethernet adapter VMware Network Adapter VMnet8:

    Connection-specific DNS Suffix  . : 
    Link-local IPv6 Address . . . . . : fe80::8420:540e:c8d3:1642%7
    IPv4 Address. . . . . : 192.168.79.1
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 

Wireless LAN adapter Wi-Fi 2:

    Connection-specific DNS Suffix  . : 
    Link-local IPv6 Address . . . . . : fe80::50cd:3db0:1a8c:893d%19
    IPv4 Address. . . . . : 172.17.0.66
    Subnet Mask . . . . . : 255.255.252.0
    Default Gateway . . . . . : 172.17.0.2

Ethernet adapter Bluetooth Network Connection 2:

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

2nd way:

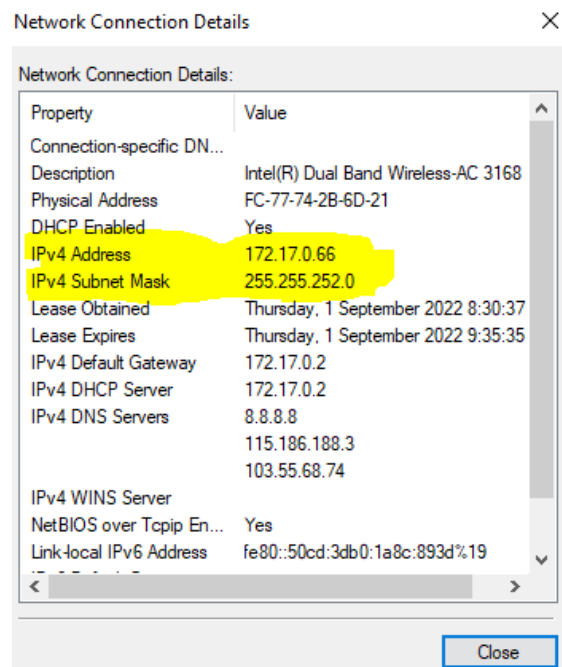
Properties

SSID:	campuswifi
Protocol:	Wi-Fi 4 (802.11n)
Security type:	WPA2-Personal
Network band:	2.4 GHz
Network channel:	1
Link speed (Receive/Transmit):	150/150 (Mbps)
Link-local IPv6 address:	fe80::50cd:3db0:1a8c:893d%19
IPv4 address:	172.17.0.66
IPv4 DNS servers:	8.8.8.8 115.186.188.3 103.55.68.74
Manufacturer:	Intel Corporation
Description:	Intel(R) Dual Band Wireless-AC 3168
Driver version:	19.51.15.3
Physical address (MAC):	FC-77-74-2B-6D-21

Copy

3rd way: (Ethernet Issue in my PC)

4th way:



5th way: (System Information)

System Information

File Edit View Help

System Summary

- Hardware Resources
 - Components
 - Multimedia
 - CD-ROM
 - Sound Device
 - Display
 - Infrared
 - Input
 - Modem
 - Network
 - Adapter
 - Protocol
 - WinSock
 - Ports
 - Storage
 - Printing
 - Problem Devices
 - USB
 - Software Environment

Item	Value
DHCP Enabled	Yes
DHCP Server	Not Available
DHCP Lease Expires	Not Available
DHCP Lease Obtained	Not Available
MAC Address	FC:77:74:28:6D:25
Driver	C:\WINDOWS\SYSTEM32\DRIVERS\BTHPAN.SYS (10.0.19041.1, 130.50 KB (133,...
Name	[00000008] Intel(R) Dual Band Wireless-AC 3168
Adapter Type	Ethernet 802.3
Product Type	Intel(R) Dual Band Wireless-AC 3168
Installed	Yes
PNP Device ID	PCI\VEN_8086&DEV_24F8&SUBSYS_21108086&REV_10\FC7774FFFF2B6CF400
Last Reset	30/08/2022 11:35 am
Index	8
Service Name	Netwtv04
IP Address	172.17.0.66, fe80-50cd3db01a8c-893d
IP Subnet	255.255.252.0, 64
Default IP Gateway	172.17.0.2
DHCP Enabled	Yes
DHCP Server	172.17.0.2
DHCP Lease Expires	01/09/2022 9:40 am
DHCP Lease Obtained	01/09/2022 9:30 am
MAC Address	FC:77:74:28:6D:21
Memory Address	0xDFFE000-0xDFFFFFFF
IRQ Channel	IRQ 4294967289
Driver	C:\WINDOWS\SYSTEM32\DRIVERS\NETWTW04.SYS (19.51.15.3, 8.29 MB (8,69...

6th way:

```
PS C:\Users\et2022> gip

InterfaceAlias      : Npcap Loopback Adapter
InterfaceIndex      : 22
InterfaceDescription : Npcap Loopback Adapter
IPv4Address         : 169.254.255.15
IPv6DefaultGateway  :
IPv4DefaultGateway  :
DNSServer           : fec0:0:0:ffff::1
                   : fec0:0:0:ffff::2
                   : fec0:0:0:ffff::3

InterfaceAlias      : VMware Network Adapter VMnet1
InterfaceIndex      : 24
InterfaceDescription : VMware Virtual Ethernet Adapter for VMnet1
IPv4Address         : 192.168.23.1
IPv6DefaultGateway  :
IPv4DefaultGateway  :
DNSServer           : fec0:0:0:ffff::1
                   : fec0:0:0:ffff::2
                   : fec0:0:0:ffff::3

InterfaceAlias      : VMware Network Adapter VMnet8
InterfaceIndex      : 7
InterfaceDescription : VMware Virtual Ethernet Adapter for VMnet8
IPv4Address         : 192.168.79.1
IPv6DefaultGateway  :
IPv4DefaultGateway  :
DNSServer           : fec0:0:0:ffff::1
                   : fec0:0:0:ffff::2
                   : fec0:0:0:ffff::3

InterfaceAlias      : Wi-Fi 2
InterfaceIndex      : 19
InterfaceDescription : Intel(R) Dual Band Wireless-AC 3168
NetProfile.Name     : campuswifi
IPv4Address         : 172.17.0.66
IPv6DefaultGateway  :
IPv4DefaultGateway  : 172.17.0.2
DNSServer           : 8.8.8.8
                   : 115.186.188.3
                   : 103.55.68.74

InterfaceAlias      : Bluetooth Network Connection 2
InterfaceIndex      : 16
InterfaceDescription : Bluetooth Device (Personal Area Network) #2
NetAdapter.Status   : Disconnected

PS C:\Users\et2022>
```