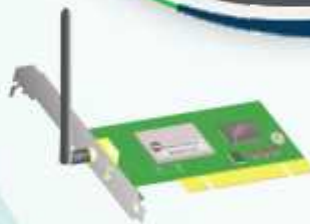




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**Welcome
To
Networkforyou
IP Parameters for
Clients**



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1.10 Verify IP Parameters for Client OS:

- IP (Internet Protocol): we are using two type of version IPV4 and IPV6.
- So, let start first discussing IP V4.
- IP uses packets called IP packets to carry information. Every IP packet should have address.
- The IP address is 32 bit and consists of 2 parts, the network part and the host part.

Example

192	168	1	1
8 Bit	8 Bit	8 Bit	8 Bit
N	N	N	H

- The IP address is 32 bits but we write it into 4 blocks of 8 bit as given above.
- IP Addresses are divided into 5 Classes, there are divided by IANA: - Internet Assigned Number Authority
 - Class A 1-126
 - Class B 128-191
 - Class C 192-223
 - Class D 224-239 - Multicast
 - Class E 240-255 - Reserved

So, we are only using Class A, B & C IP address

Subnet Mask: It's an address used to identify the network and host portion of the IP address

Class A N.H.H.H 255.0.0.0

Class B N.N.H.H 255.255.0.0

Class C N.N.N.H 255.255.255.0

Remember 255 represent Network bit and 0 represent Host bit.

We have Private IP and Public IP let discuss what is that.

Private IP:

- It uses within the Organization.
- It is Free
- It is Unregister IP
- It is Unique with the network
- It not recognized on Internet

Public IP:

- It uses in Public Network
- It is not free (Need to Pay ISP or IANA to get)
- It is Register IP
- It is Globally Unique
- It recognized on Internet

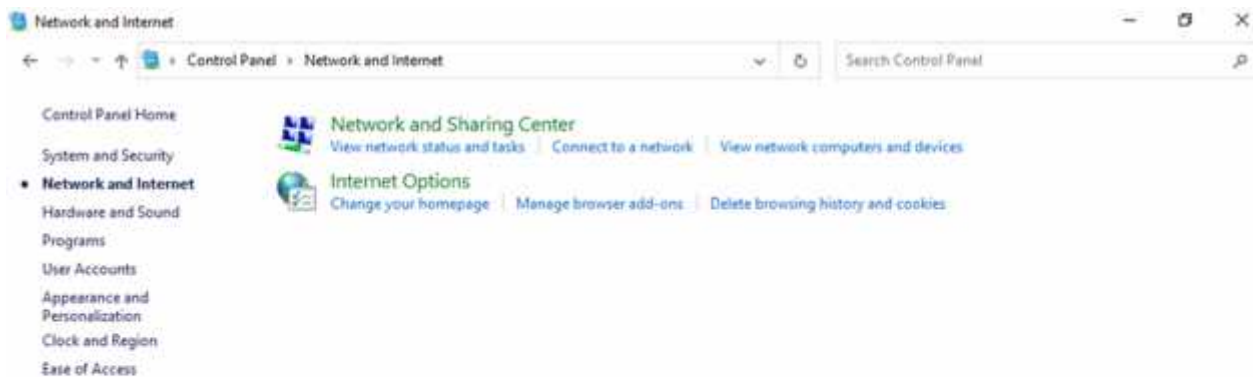
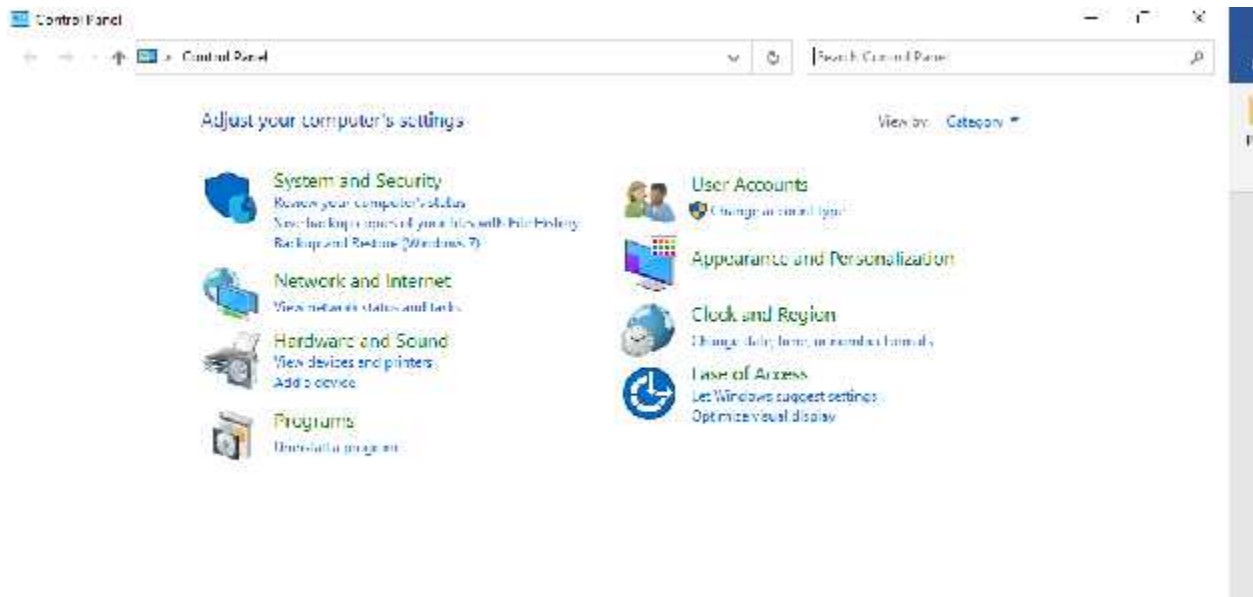
Please find the below private IP address.

- Class A 10.0.0.0 to 10.255.255.255
- Class B 172.16.0.0 to 172.31.255.255
- Class C 192.168.0.0 to 192.168.255.255

For Windows OS:

Use this step to assign a static IP configuration:

- Open Control Panel
- Click on Network and Internet
- Click on Network and Sharing Center.
- On the left panel, click the Change adapter setting link.
- Select the Use the following IP address Option.
- Set the IP address (For Example: 192.168.1.100).
- Set the Subnet mask (For Example, 255.255.255.0).
- Under "Use the following DNS Server addresses"
- (Optional) Enter set the Alternative DNS server, Click the Ok button.
- Click the Ok button.





Network and Sharing Center

Control Panel > Network and Internet > Network and Sharing Center

View your basic network information and set up connections

View your network status

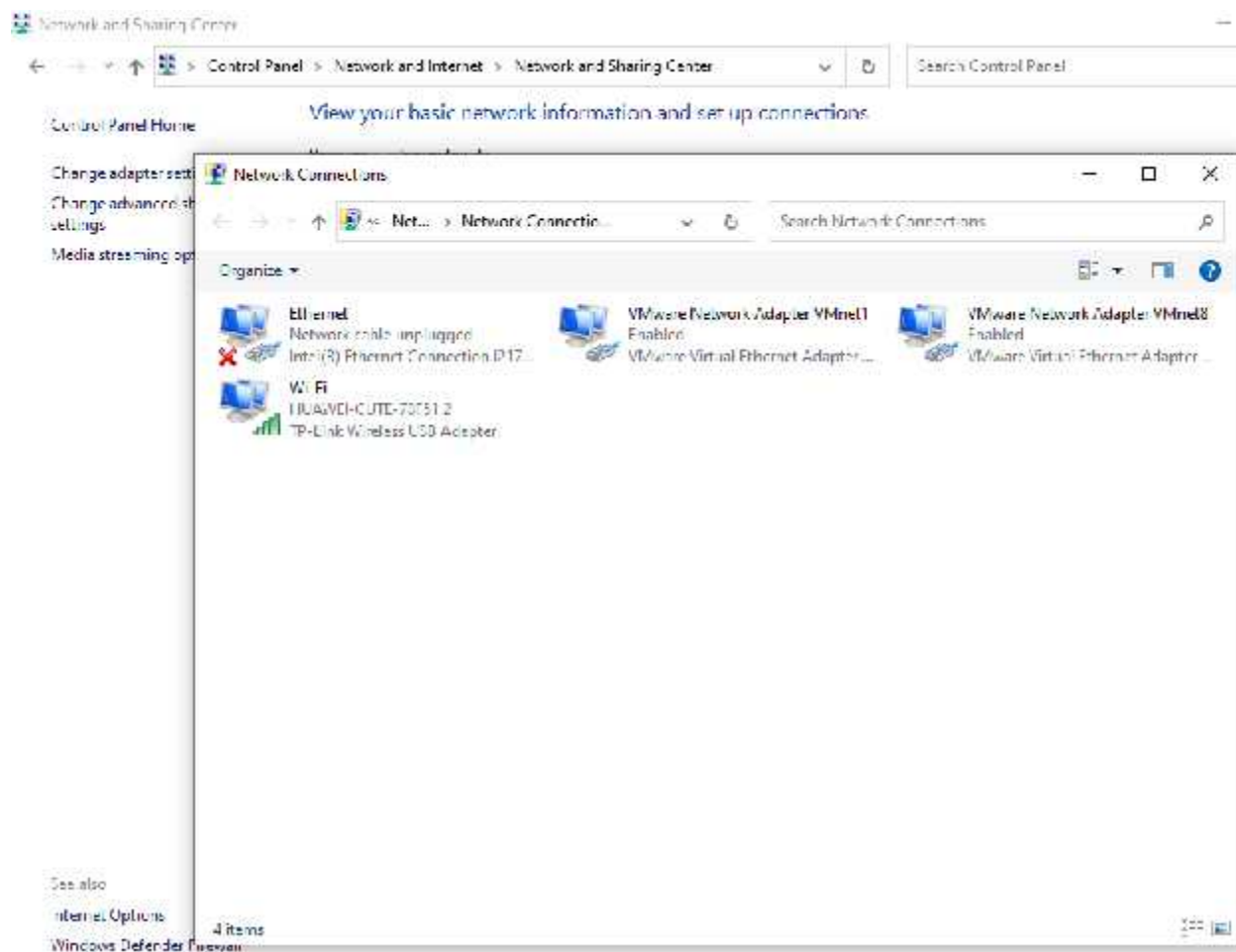
HUAWEI-CUTE-78F51 2
Private network

Access type: **Private**

Connections: **WiFi (HUAWEI-CUTE-78F51)**

Change your networking settings

- Set up a new connection for a network
- Set up a broadband, dial-up, or VPN connection, or set up a router or access point
- Troubleshoot problems
- Ignore and repair network problems, or get troubleshooting information



Network Connections

Control Panel > Network and Internet > Network and Sharing Center

View your basic network information and set up connections

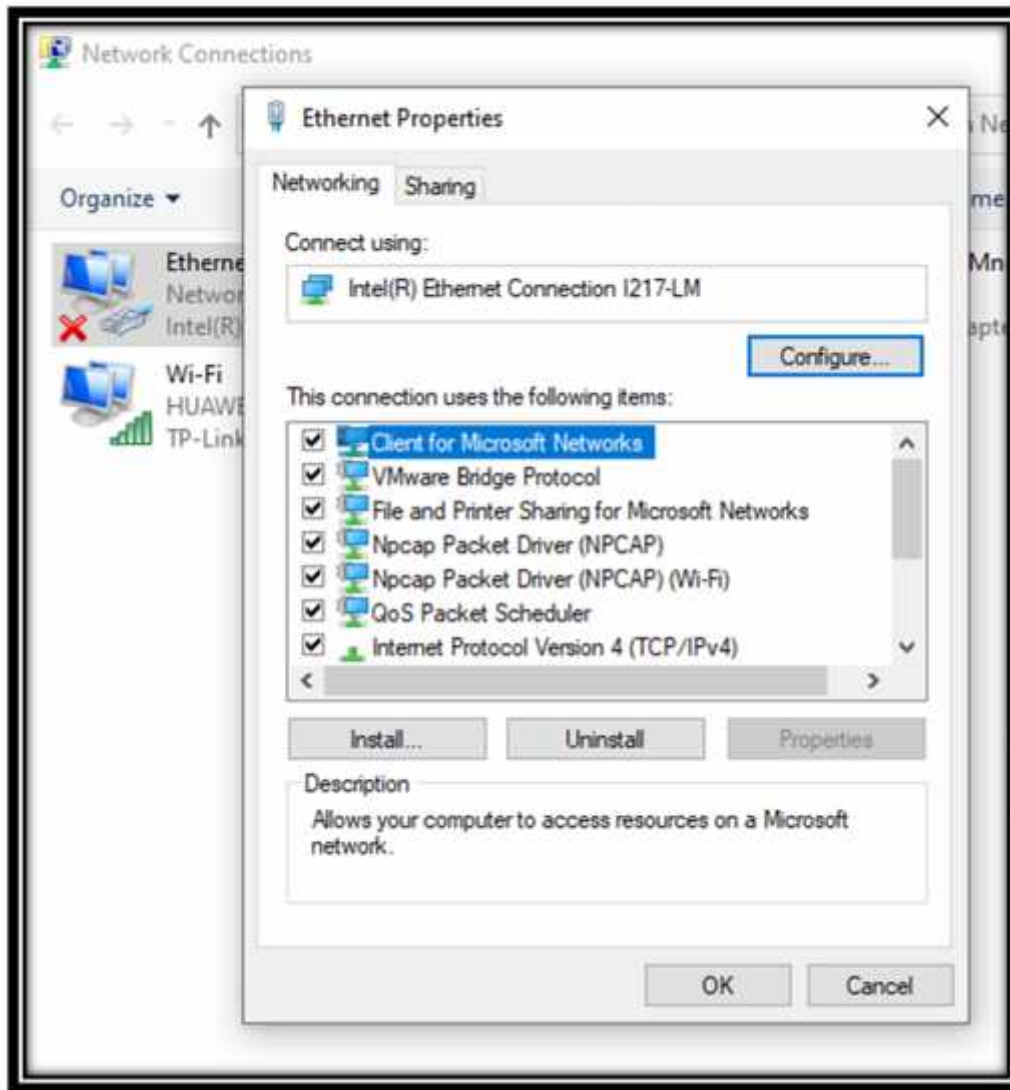
Organize

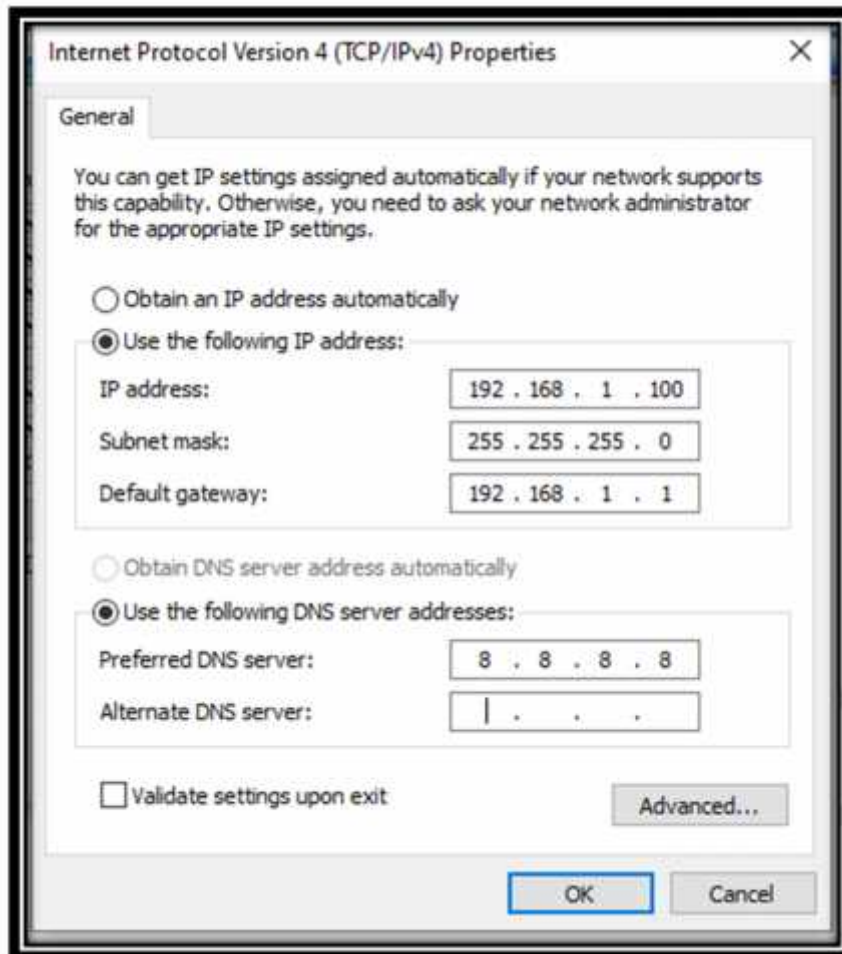
- Ethernet
Network cable unplugged
Intel(R) Ethernet Connection P17...
- WiFi
HUAWEI-CUTE-78F51 2
TP-Link Wireless USB Adapter
- VMware Network Adapter VMnet1
Enabled
VMware Virtual Ethernet Adapter...
- VMware Network Adapter VMnet8
Enabled
VMware Virtual Ethernet Adapter...

See also

- Internet Options
- Windows Defender Firewall

4 items

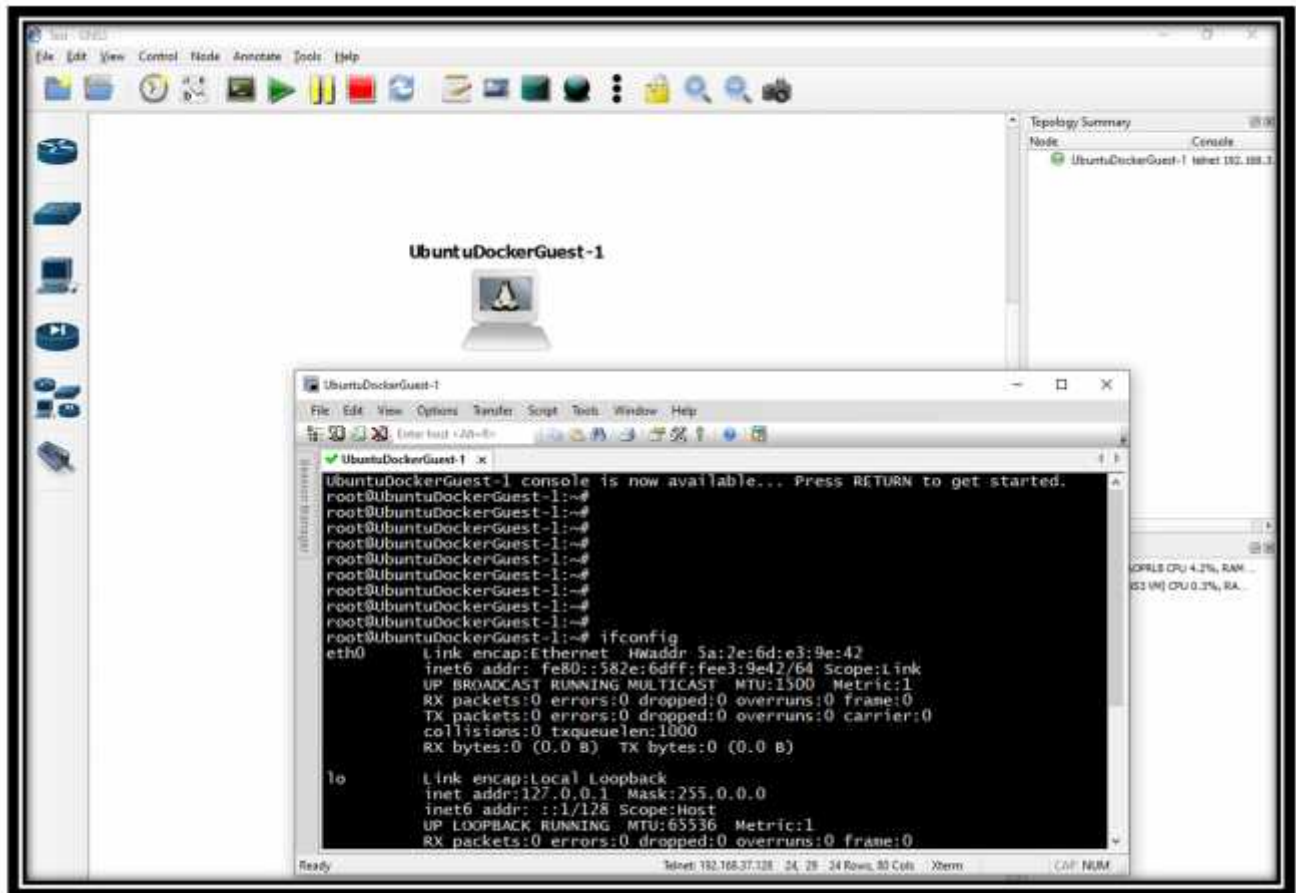




- How to Verify – To Verify open CMD type command ipconfig or ipconfig/all

IP Parameters for Client Linux OS:

- Setup Ip address in Linux:
- We will use: `ifconfig eth0 192.168.1.100 netmask 255.255.255.0`
- Setup Gateway in Linux: `route add default gw 192.168.1.1 eth0`





```
root@UbuntuDockerGuest-1:~#
root@UbuntuDockerGuest-1:~#
root@UbuntuDockerGuest-1:~#
root@UbuntuDockerGuest-1:~#
root@UbuntuDockerGuest-1:~#
root@UbuntuDockerGuest-1:~#
root@UbuntuDockerGuest-1:~#
root@UbuntuDockerGuest-1:~#
root@UbuntuDockerGuest-1:~# ifconfig etho 192.168.1.100 netmask 255.255.255.0
SIOCSIFADDR: No such device
etho: ERROR while getting interface flags: No such device
SIOCSIFNETMASK: No such device
root@UbuntuDockerGuest-1:~# ifconfig eth0 192.168.1.100 netmask 255.255.255.0
root@UbuntuDockerGuest-1:~# ifconfig
eth0      Link encap:Ethernet  HWaddr 5a:2e:6d:e3:9e:42
          inet addr:192.168.1.100  Bcast:192.168.1.255  Mask:255.255.255.0
          inet6 addr: fe80::582e:6dff:fee3:9e42/64  Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:0 errors:0 dropped:0 overruns:0 frame:0
          TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:0 (0.0 B)  TX bytes:0 (0.0 B)

lo        Link encap:Local Loopback
          inet addr:127.0.0.1  Mask:255.0.0.0
          inet6 addr: ::1/128  Scope:Host
          UP LOOPBACK RUNNING  MTU:65536  Metric:1
          RX packets:0 errors:0 dropped:0 overruns:0 frame:0
          TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:0 (0.0 B)  TX bytes:0 (0.0 B)
```

How to check Gateway: route

```
root@UbuntuDockerGuest-1:~# Route add default gw 192.168.1.1 eth0
bash: Route: command not found
root@UbuntuDockerGuest-1:~# Route add default gw 192.168.1.1 eth0
bash: Route: command not found
root@UbuntuDockerGuest-1:~# route add default gw 192.168.1.1 eth0
root@UbuntuDockerGuest-1:~# route
Kernel IP routing table
Destination    Gateway         Genmask         Flags Metric Ref    Use Iface
default        192.168.1.1    0.0.0.0         UG    0     0      0 eth0
192.168.1.0    *              255.255.255.0  U     0     0      0 eth0
root@UbuntuDockerGuest-1:~#
```

