

IT CN 303 - LAB

SUBMITTED BY ADITYA SINGH 2K19/EP/005

Experiment 1 : Use Basic Networking Command on your Computer.

1. IPCONFIG

Displays all current TCP/IP network configuration values and refreshes DHCP and DNS settings. Used without parameters, ipconfig displays IPv4 and IPv6 addresses, subnet mask, and default gateway for all adapters.

```
Command Prompt
C:\Users\Aditya>ipconfig

Windows IP Configuration

Ethernet adapter Ethernet:

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

Wireless LAN adapter Local Area Connection* 1:

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

Wireless LAN adapter Local Area Connection* 10:

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

Wireless LAN adapter Wi-Fi:

    Connection-specific DNS Suffix  . : hgu_lan
    Link-local IPv6 Address . . . . . : fe80::e824:1bfa:631e:ab40%6
    IPv4 Address. . . . . : 192.168.1.43
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 192.168.1.1

C:\Users\Aditya>
```

2. IPCONFIG/ALL

Displays the full TCP/IP configuration for all adapters.

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

Windows IP Configuration

```
Host Name . . . . . : DESKTOP-I88QMII
Primary Dns Suffix . . . . . :
Node Type . . . . . : Hybrid
IP Routing Enabled. . . . . : No
WINS Proxy Enabled. . . . . : No
DNS Suffix Search List. . . . . : hgu_lan
```

Ethernet adapter Ethernet:

```
Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . :
Description . . . . . : Realtek PCIe GbE Family Controller
Physical Address. . . . . : 04-D4-C4-78-E0-4B
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes
```

Wireless LAN adapter Local Area Connection* 1:

```
Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . :
Description . . . . . : Microsoft Wi-Fi Direct Virtual Adapter
Physical Address. . . . . : DE-F5-05-D2-6D-19
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes
```

Wireless LAN adapter Local Area Connection* 10:

```
Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . :
Description . . . . . : Microsoft Wi-Fi Direct Virtual Adapter #2
Physical Address. . . . . : FE-F5-05-D2-6D-19
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes
```

Wireless LAN adapter Wi-Fi:

```
Connection-specific DNS Suffix . : hgu_lan
Description . . . . . : Realtek 8821CE Wireless LAN 802.11ac PCI-E NIC
Physical Address. . . . . : DC-F5-05-D2-6D-19
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes
Link-local IPv6 Address . . . . . : fe80::e824:1bfa:631e:ab40%6(Preferred)
IPv4 Address. . . . . : 192.168.1.43(Preferred)
Subnet Mask . . . . . : 255.255.255.0
Lease Obtained. . . . . : 01 September 2021 20:45:34
Lease Expires . . . . . : 04 September 2021 16:04:58
Default Gateway . . . . . : 192.168.1.1
DHCP Server . . . . . : 192.168.1.1
DHCPv6 IAID . . . . . : 81589509
DHCPv6 Client DUID. . . . . : 00-01-00-01-28-B2-29-ED-04-D4-C4-78-E0-4B
DNS Servers . . . . . : 205.254.165.3
                       205.254.165.244
NetBIOS over Tcpip. . . . . : Enabled
```

3. NSLOOKUP

nslookup (from name server lookup) is a network administration command-line tool for querying the DNS to obtain the mapping between domain name and IP address, or other DNS records.

```
Command Prompt - nslookup
C:\Users\Aditya>nslookup
Default Server: UnKnown
Address: 205.254.165.3

> www.geeksforgeeks.com
Server: UnKnown
Address: 205.254.165.3

Non-authoritative answer:
Name: www.geeksforgeeks.com
Address: 199.59.242.153

> _
```

4. PING

The ping command is a Prompt command used to test the ability of the source computer to reach a specified destination computer.

```
C:\Users\Aditya>ping 192.168.1.43

Pinging 192.168.1.43 with 32 bytes of data:
Reply from 192.168.1.43: bytes=32 time<1ms TTL=128
Reply from 192.168.1.43: bytes=32 time<1ms TTL=128
Reply from 192.168.1.43: bytes=32 time<1ms TTL=128
Reply from 192.168.1.43: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.43:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

5. TRACERT

It is a command-line utility that you can use to trace the path that an Internet Protocol (IP) packet takes to its destination.

This command determines the path by sending the first echo Request message with a TTL of 1 and incrementing the TTL by 1 on each subsequent transmission until the target responds or the maximum number of hops is reached. The maximum number of hops is 30 by default and can be specified using the /h parameter.

```
C:\Users\Aditya>tracert 192.169.217.12

Tracing route to ip-192-169-217-12.ip.secureserver.net [192.169.217.12]
over a maximum of 30 hops:

  1    1 ms    1 ms    1 ms  192.168.1.1
  2    2 ms    2 ms    2 ms  103.212.146.1
  3    3 ms    4 ms    2 ms  205.254.165.1
  4    5 ms    7 ms    4 ms  205.254.165.34
  5    3 ms    4 ms    3 ms  14.141.116.229.static-Delhi.vsnl.net.in [14.141.116.229]
  6   24 ms   24 ms   24 ms  172.28.176.177
  7   24 ms   23 ms   24 ms  ix-ae-1-100.tcore2.mlv-mumbai.as6453.net [180.87.39.25]
  8  129 ms  129 ms  129 ms  if-ae-2-2.tcore1.mlv-mumbai.as6453.net [180.87.38.1]
  9  131 ms  129 ms  128 ms  if-ae-5-2.tcore1.wyn-marseille.as6453.net [80.231.217.29]
 10  129 ms  128 ms  129 ms  if-ae-2-3.tcore2.wyn-marseille.as6453.net [80.231.217.51]
 11  129 ms  129 ms  129 ms  if-ae-7-3.tcore2.fnm-frankfurt.as6453.net [195.219.87.33]
 12    *      *      *      Request timed out.
 13  263 ms  262 ms  263 ms  ffm-bb2-link.ip.twelve99.net [62.115.124.118]
 14  262 ms  263 ms  262 ms  prs-bb2-link.ip.twelve99.net [62.115.122.138]
 15  259 ms  259 ms  259 ms  rest-bb1-link.ip.twelve99.net [62.115.122.159]
 16  263 ms  265 ms  260 ms  las-b2-link.ip.twelve99.net [62.115.125.163]
 17  261 ms  264 ms  263 ms  las-b2-link.ip.twelve99.net [62.115.125.163]
 18  258 ms  258 ms  258 ms  ae9.ibrsa0107-01.lax1.bb.godaddy.com [62.115.171.243]
 19  279 ms  284 ms  260 ms  ae0.lax1-ibrsa0106-01.bb.gdinf.net [148.72.34.4]
 20  273 ms  268 ms  270 ms  148.72.34.32
 21  270 ms  278 ms  269 ms  148.72.32.65
 22    *      *      *      Request timed out.
 23    *      *      *      Request timed out.
 24    *      *      *      Request timed out.
 25    *      *      *      Request timed out.
 26    *      *      *      Request timed out.
 27    *      *      *      Request timed out.
 28    *      *      *      Request timed out.
 29    *      *      *      Request timed out.
 30    *      *      *      Request timed out.

Trace complete.
```

Experiment 2 : Build a Peer-to-Peer network using Cisco Packet Tracer.

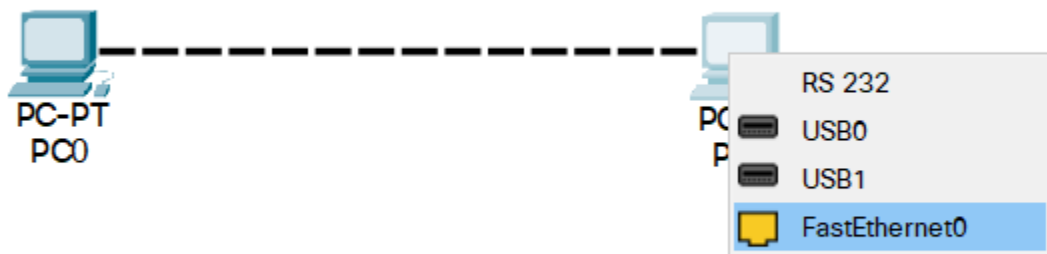
P2P Network : In a peer to peer computer network, each network node has a generic status. It means that each computer has the same status as that of another computer present in the computer network.

Steps for Cisco Packet Tracer :

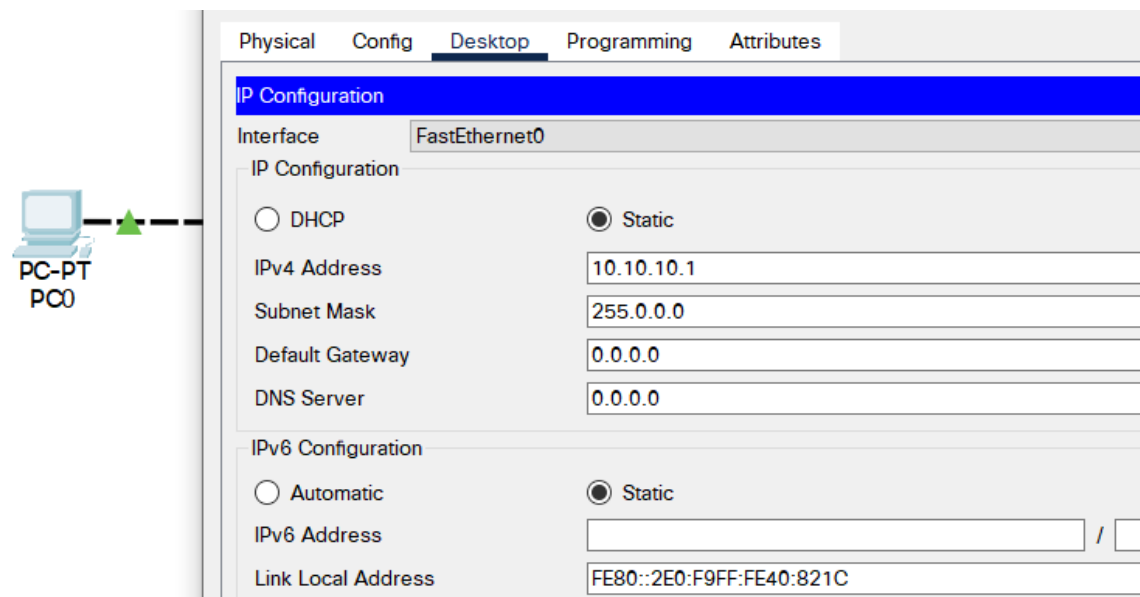
1. Selection of end devices
2. Choosing a suitable network device
3. Establishing communication links
4. Configure IP addresses
5. Test the working of computer network



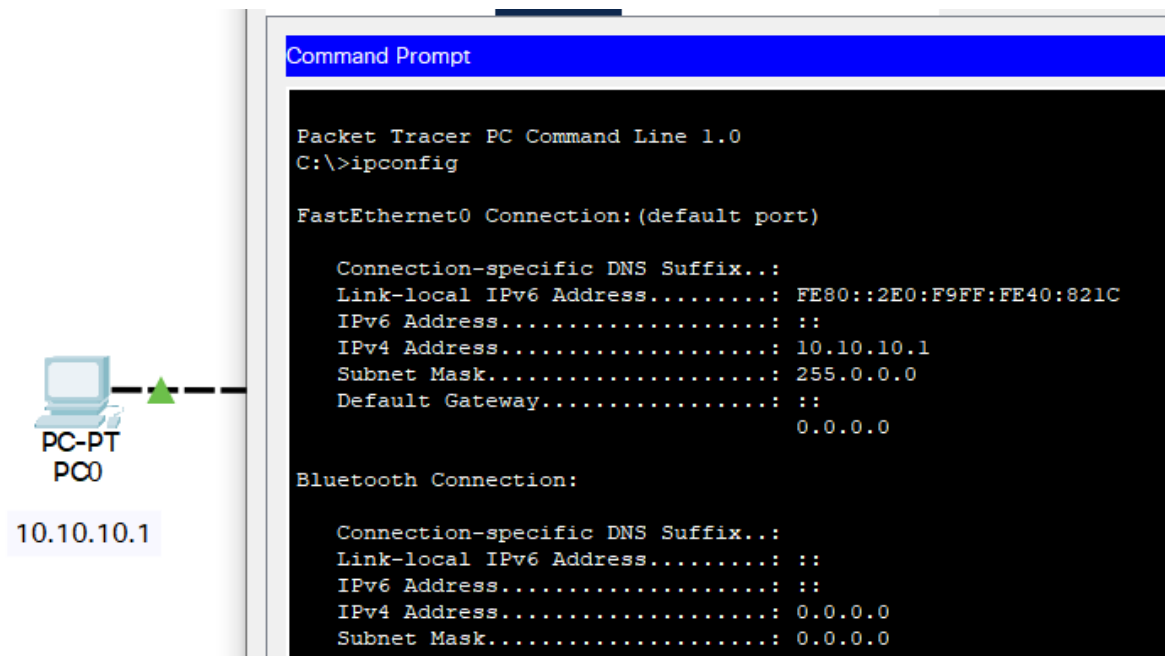
Connect with Copper cross-over Cable.



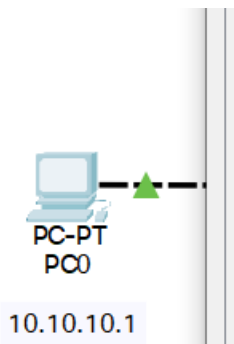
Set IP address of PC1: 10.10.10.1, and PC2: 10.10.10.2.



Run ipconfig from CMD of PC1



Obtain Physical Address by writing ipconfig /all from CMD of PC1.



```
C:\>ipconfig /all

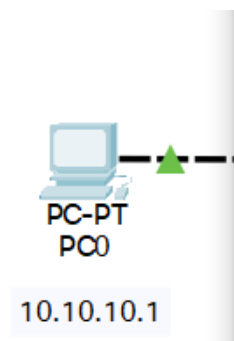
FastEthernet0 Connection:(default port)

    Connection-specific DNS Suffix...:
    Physical Address.....: 00E0.F940.821C
    Link-local IPv6 Address.....: FE80::2E0:F9FF:FE40:821C
    IPv6 Address.....: ::
    IPv4 Address.....: 10.10.10.1
    Subnet Mask.....: 255.0.0.0
    Default Gateway.....: ::
                                   0.0.0.0
    DHCP Servers.....: 0.0.0.0
    DHCPv6 IAID.....:
    DHCPv6 Client DUID.....: 00-01-00-01-0A-3E-0B-EE-00-E0-
F9-40-82-1C
    DNS Servers.....: ::
                                   0.0.0.0

Bluetooth Connection:

    Connection-specific DNS Suffix...:
    Physical Address.....: 0001.6410.4096
    Link-local IPv6 Address.....: ::
--More--
```

Ping PC2 by writing the ip address of PC2.



```
C:\>
C:\>
C:\>ping 10.10.10.2

Pinging 10.10.10.2 with 32 bytes of data:

Reply from 10.10.10.2: bytes=32 time=3ms TTL=128
Reply from 10.10.10.2: bytes=32 time<1ms TTL=128
Reply from 10.10.10.2: bytes=32 time<1ms TTL=128
Reply from 10.10.10.2: bytes=32 time<1ms TTL=128

Ping statistics for 10.10.10.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 3ms, Average = 0ms

C:\>
```

END