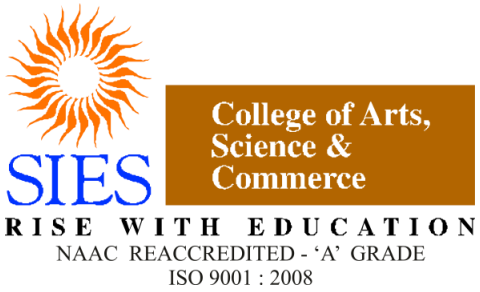
Name - Sumanth Ganeshan Udaiyar

Roll no - SCS2122076



S.I.E.S College of Arts, Science and Commerce,
Sion(W), Mumbai – 400 022.

CERTIFICATE

This is to certify that Mr. **Sumanth Ganeshan Udaiyar** Roll No. **SCS2122076** has successfully completed the necessary course of experiments in the subject of **Computer Networks** during the academic year **2021 – 2022** complying with the requirements of **University of Mumbai**,for the course of **S.Y.BSc. Computer Science [Semester-4]**

Mr. Manoj Singh

Head of the Department
(Computer Science)

Mr. Mohammad Abuzar Ansari
Prof. In-Charge

Date:

College Seal

INDEX

Practical No 1

Aim:
Understanding the working of NIC cards, Ethernet/Fast Ethernet/Gigabit Ethernet.

NIC cards:

NIC (network interface card) is a gadget that works as a bridge between computers. In other words, this piece of equipment is used to join together multiple computer systems in a local area network (LAN). Though, networked computers are required protocols and agreed-upon communication languages in order to correspond with each other and for transmitting data packets on these machines. That means network interface card is very important to link the computers so data can be sent and received on them within a LAN. So while constructing a LAN, NIC must be fitted into each communicating computer within that network. Moreover, all installed NICs in this network must have the same designs and architectures. Ethernet cards and Token Ring cards are the best examples of these technologies.

For your information, a network interface card (Ethernet card) will be installed in the computer's slot. Though lots of network technologies other than Ethernet exist but it is in practice near-ubiquity since the year 1990. Likewise, each Ethernet network controller is having a unique address of 48 bits serial numbers which is known as MAC (media access control) address. Like a home address, MAC addresses are used to move ahead traffic to a computer over a network. But these addresses are stored up in the computer's ROM (read only memory).

The network interface card allows the computers of a network to communicate as OSI layer 1 and layer 2 hardware devices. It also makes possible the physical contact with a network's resource or other medium. With NIC a low-level addressing structure with the use of MAC addresses becomes possible. It as well permits the computers users to establish a connection with each other by using cables or else to communicate wirelessly.

The network interface card back plate is featured a port with it and that port is able to accommodate an Ethernet cable that must have to run through from every NICs towards either the central hub or else the switch. Actually, hubs or switches are used to pass data and information between a network's computers with the help of MAC

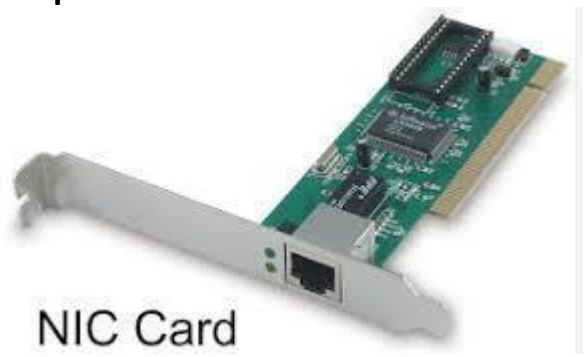
addresses. So whenever you will go to buy the LAN components, make sure first that the NICs have the similar capabilities as a hub or a switch of that network has. So NIC for a wireless network can't chatter with a wired hub or switch and vice versa. Anyhow, for the greater speed and best performance of the network, try to use the newer versions of hardware.

NIC as a controller put into practice to that electronic circuitry which is must for the communication within a network. Well, computers contacts with each other become possible with the layer 1 (physical layer) and layer 2 (data link layer) standards like Ethernet and Wi-Fi. And as the base of the network's protocol stack, that rule permits the communication within similar LAN small groups of computers. But for the big networks communication, routable protocols as IP are required.

Following are the 4 possible techniques that can be used by NIC to transfer the data:

1. **Polling**
2. **Programmed Input/output (I/O)**
3. **Interruption driven I/O**
4. **Direct memory access**

Output:



Fast Ethernet

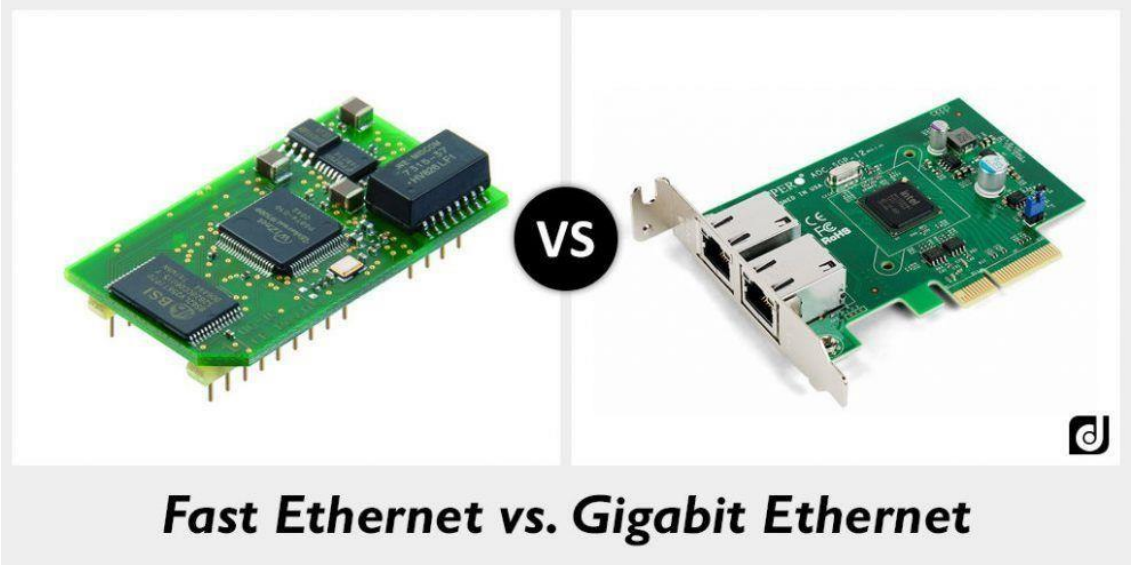
Fast Ethernet is a local area network (LAN) transmission standard that provides a data rate of 100 megabits per second (referred to as "100BASE-T"). Workstations with existing 10 megabit per second (10BASE-T) Ethernet card can be connected to a Fast Ethernet network. (The 100 megabits per second is a shared data rate; input to each workstation is constrained by the 10 Mbps card.)

Gigabit Ethernet

Gigabit Ethernet was developed to meet the need for faster communication networks with applications such as multimedia and Voice over IP (VoIP). Also known as "gigabit-Ethernet-over-copper" or 1000Base-T, GigE is a version of Ethernet that runs at speeds 10 times faster than 100Base-T. It is defined in the IEEE 802.3 standard and is currently used as an enterprise backbone. Existing Ethernet LANs with 10 and 100 Mbps cards can feed into a Gigabit Ethernet backbone to interconnect high performance switches, routers and servers.

From the data link layer of the OSI model upward, the look and implementation of Gigabit Ethernet is identical to that of Ethernet. The most important differences between Gigabit Ethernet and Fast Ethernet include the additional support of full duplex operation in the MAC layer and the data rates.

Output:



Practical No 2

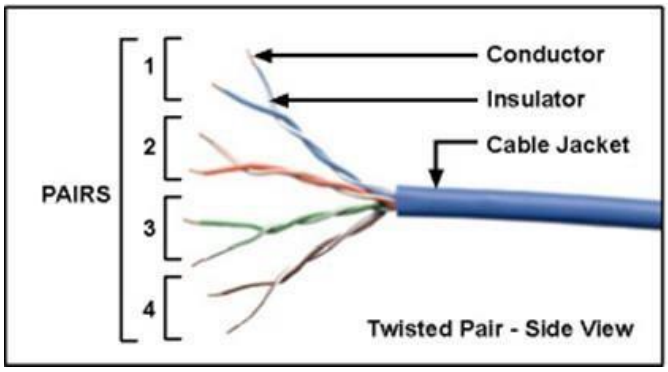
Aim:

Crimping of Twisted-Pair Cable with RJ45connector for Straight-Through, Cross-Over, Roll-Over.

Twisted-Pair Cable

Twisted pair is the ordinary copper wire that connects home and many business computers to the telephone company. To reduce crosstalk or electromagnetic induction between pairs of wires, two insulated copper wires are twisted around each other. Each connection on twisted pair requires both wires. Since some telephone sets or desktop locations require multiple connections, twisted pair is sometimes installed in two or more pairs, all within a single cable. For some business locations, twisted pair is enclosed in a shield that functions as a ground. This is known as shielded twisted pair (STP). Ordinary wire to the home is unshielded twisted pair (UTP).

Output:

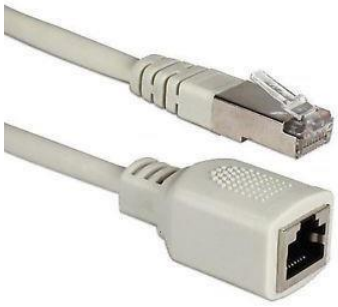


RJ45connector

RJ45 is a type of connector commonly used for Ethernet networking. It looks similar to a telephone jack, but is slightly wider. Since Ethernet cables have an RJ45 connector on each end, Ethernet cables are sometimes also called RJ45 cables.

The "RJ" in RJ45 stands for "registered jack," since it is a standardized networking interface. The "45" simply refers to the number of the interface standard. Each RJ45 connector has eight pins, which means an RJ45 cable contains eight separate wires. If you look closely at the end of an Ethernet cable, you can actually see the eight wires, which are each a different color. Four of them are solid colors, while the other four are striped.

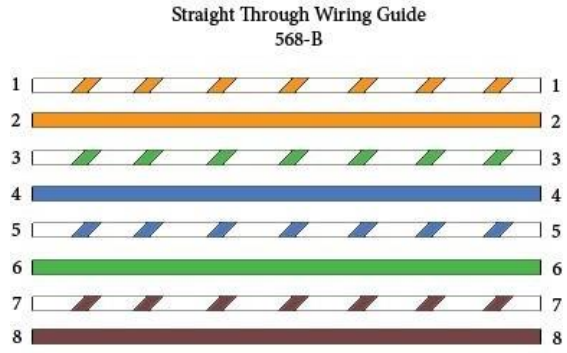
Output:



Straight-Through Wired Cables

Straight-Through refers to cables that have the pin assignments on each end of the cable. In other words Pin 1 connector A goes to Pin 1 on connector B, Pin 2 to Pin 2 act. Straight-Through wired cables are most commonly used to connect a host to client. When we talk about cat5e patch cables, the Straight-Through wired cat5e patch cable is used to connect computers, printers and other network client devices to the router switch or hub (the host device in this instance).

Output:

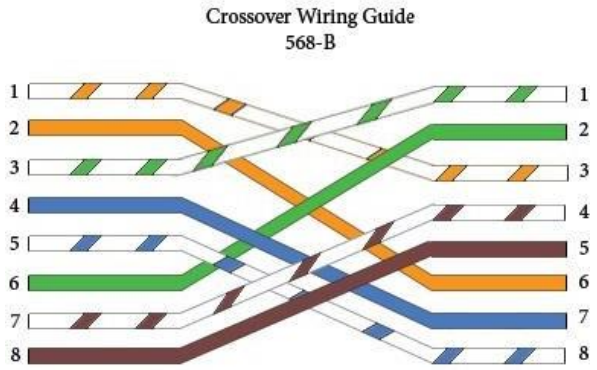


Crossover Wired Cables

Crossover wired cables (commonly called crossover cables) are very much like Straight-Through cables with the exception that TX and RX lines are crossed (they are at oposite positions on either end of the cable. Using the 568-B standard as an example below you will see that Pin 1 on connector A goes to Pin 3 on connector B. Pin 2 on connector A goes to Pin 6 on connector B ect. Crossover cables are most commonly used to connect two hosts directly. Examples would be connecting a computer directly to another computer, connecting a switch directly to another switch, or connecting a

router to a router. Note: While in the past when connecting two host devices directly a crossover cable was required. Now days most devices have auto sensing technology that detects the cable and device and crosses pairs when needed.

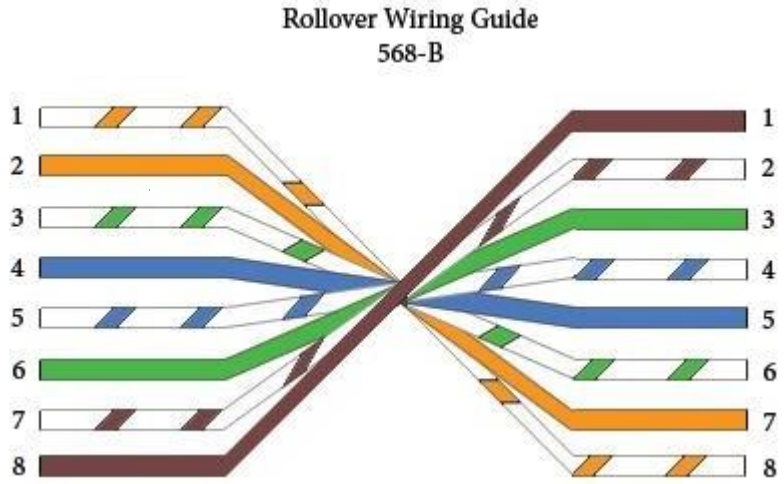
Output:



Rollover Wired Cables

Rollover wired cables most commonly called rollover cables, have opposite Pin assignments on each end of the cable or in other words it is "rolled over". Pin 1 of connector A would be connected to Pin 8 of connector B. Pin 2 of connector A would be connected to Pin 7 of connector B and so on. Rollover cables, sometimes referred to as Yost cables are most commonly used to connect to a devices console port to make programming changes to the device. Unlike crossover and straight-wired cables, rollover cables are not intended to carry data but instead create an interface with the device.

Output:

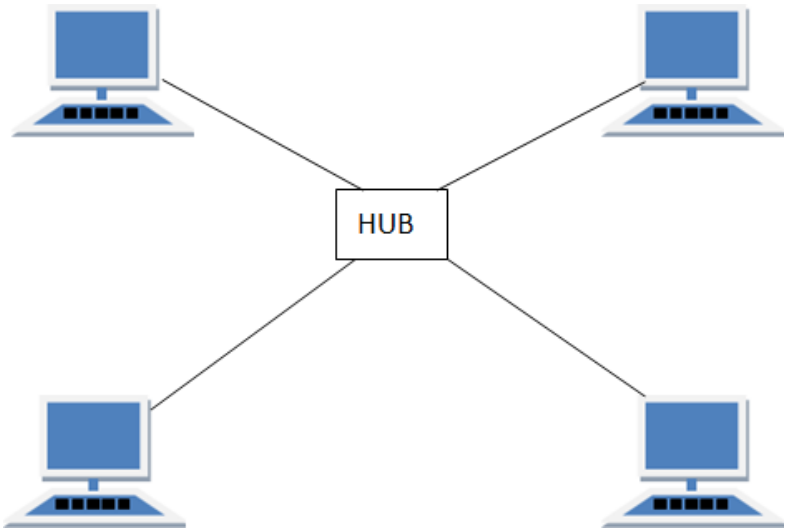


Practical No 3

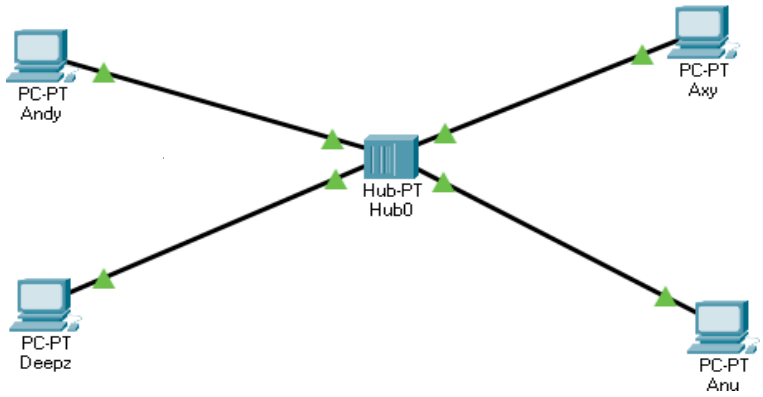
Aim:

To understand simple networks: Use Cisco Packet Tracker to design a simple network with four computers and one hub.

(Use class C addressing; simulate packets from computer one to four using ping command and ipconfig command).



Output:




```
C:\>ipconfig

FastEthernet0 Connection:(default port)

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.....: FE80::260:70FF:FEBE:CD47
   IPv6 Address.....: ::
   IPv4 Address.....: 192.168.10.1
   Subnet Mask.....: 255.255.255.0
   Default Gateway.....: ::
                                 0.0.0.0

Bluetooth Connection:

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.....: ::
   IPv6 Address.....: ::
   IPv4 Address.....: 0.0.0.0
   Subnet Mask.....: 0.0.0.0
   Default Gateway.....: ::
                                 0.0.0.0

C:\>ping 192.168.10.4

Pinging 192.168.10.4 with 32 bytes of data:

Reply from 192.168.10.4: bytes=32 time<1ms TTL=128
Reply from 192.168.10.4: bytes=32 time<1ms TTL=128
Reply from 192.168.10.4: bytes=32 time<1ms TTL=128
Reply from 192.168.10.4: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.10.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

Configuration Details:

Andy – IP Address: 192.168.10.1

Axy – IP Address: 192.168.10.2

Deepz – IP Address: 192.168.10.3

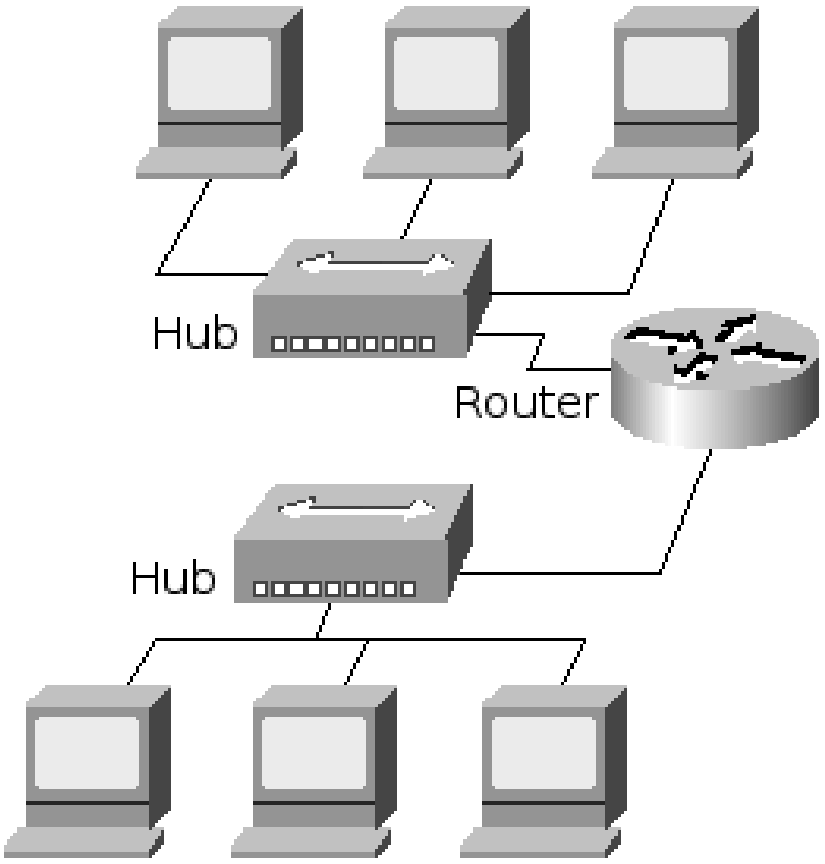
Anu – IP Address: 192.168.10.4

Practical No 4

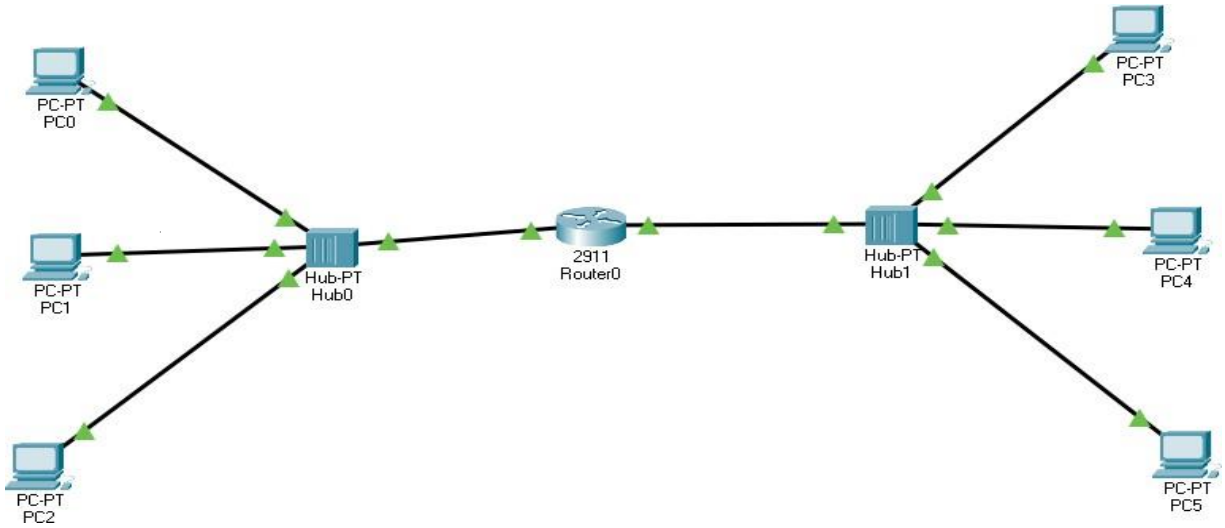
Aim:

Using Cisco Packet Tracker to design a two network with 6 computers, 2 hubs and 1 routers.

(Using class A and class B addressing).



Output:




```
C:\>ping 110.168.10.1

Pinging 110.168.10.1 with 32 bytes of data:

Reply from 110.168.10.1: bytes=32 time<1ms TTL=127
Reply from 110.168.10.1: bytes=32 time<1ms TTL=127
Reply from 110.168.10.1: bytes=32 time<1ms TTL=127
Reply from 110.168.10.1: bytes=32 time<1ms TTL=127

Ping statistics for 110.168.10.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ipconfig

FastEthernet0 Connection:(default port)

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.....: FE80::230:A3FF:FE8A:B11B
   IPv6 Address.....: ::
   IPv4 Address.....: 189.168.11.1
   Subnet Mask.....: 255.0.0.0
   Default Gateway.....: ::
                                 189.168.11.0

Bluetooth Connection:

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.....: ::
   IPv6 Address.....: ::
   IPv4 Address.....: 0.0.0.0
   Subnet Mask.....: 0.0.0.0
   Default Gateway.....: ::
                                 0.0.0.0

C:\>
```

Configuration Details:

Router0 – IP Address: GigabitEthernet 0/0: 110.168.10.0

Router0 – IP Address: GigabitEthernet 0/1: 189.168.11.0

PC0 – IP Address: 189.168.11.1, Gateway: 189.168.11.0

PC1 – IP Address: 189.168.11.2, Gateway: 189.168.11.0

PC2 - IP Address: 189.168.11.3, Gateway: 189.168.11.0

PC3 - IP Address: 110.168.10.1, Gateway: 110.168.10.0

PC4 - IP Address: 110.168.10.2, Gateway: 110.168.10.0

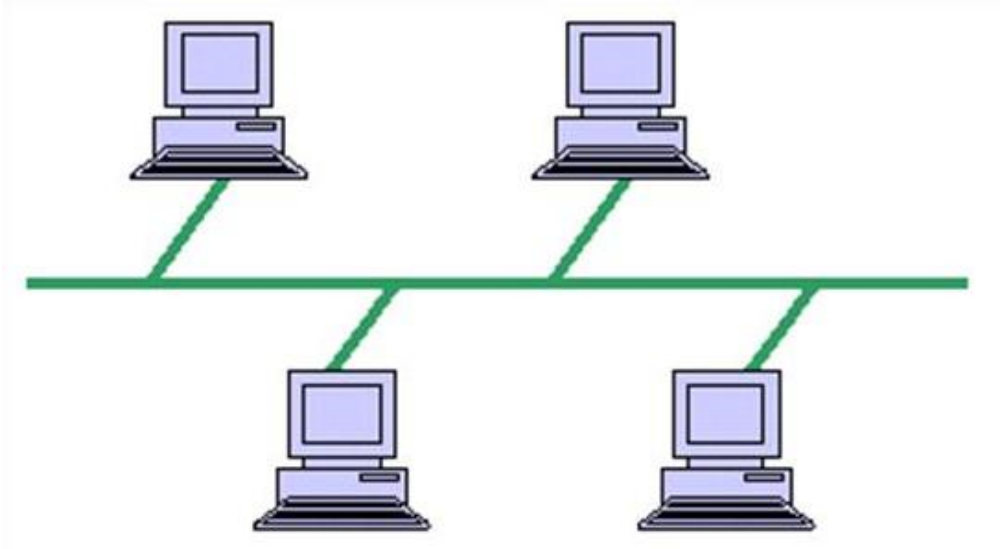
PC5 - IP Address: 110.168.10.3, Gateway: 110.168.10.0

Practical No 5

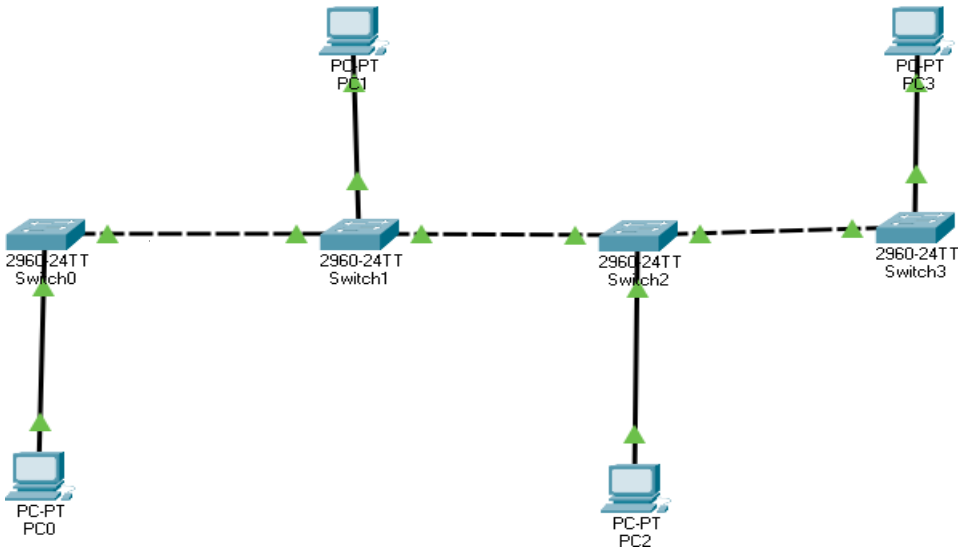
Aim:

Using Cisco Packet Tracker to implement bus topology

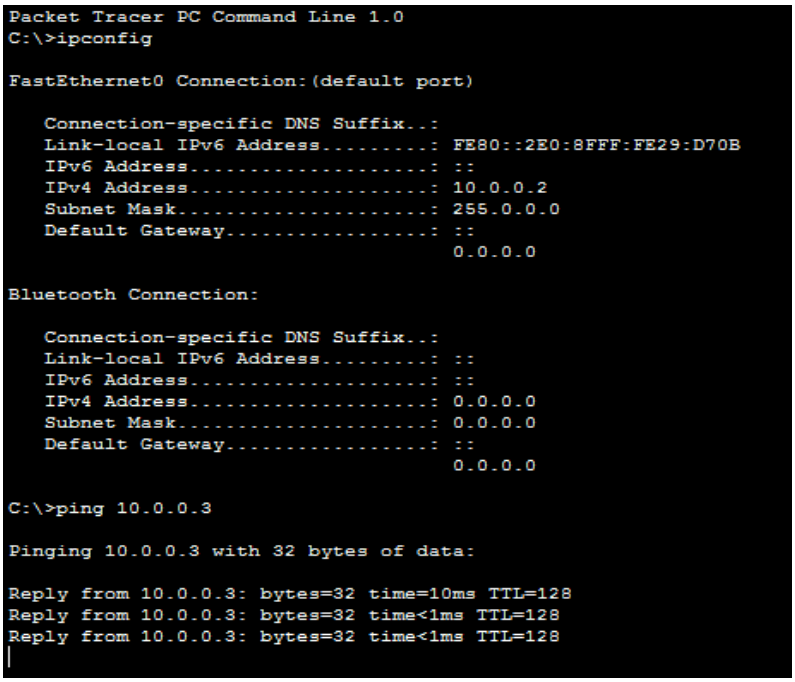
(using 4 computers).



Output:




```
C:\>ipconfig

FastEthernet0 Connection:(default port)

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.........: FE80::201:C9FF:FE53:8685
   IPv6 Address....................: ::
   IPv4 Address....................: 10.0.0.1
   Subnet Mask.....................: 255.0.0.0
   Default Gateway.................: ::
                                     0.0.0.0

Bluetooth Connection:

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.........: ::
   IPv6 Address....................: ::
   IPv4 Address....................: 0.0.0.0
   Subnet Mask.....................: 0.0.0.0
   Default Gateway.................: ::
                                     0.0.0.0

C:\>ping 10.0.0.4

Pinging 10.0.0.4 with 32 bytes of data:

Reply from 10.0.0.4: bytes=32 time=15ms TTL=128
Reply from 10.0.0.4: bytes=32 time<1ms TTL=128
Reply from 10.0.0.4: bytes=32 time<1ms TTL=128
Reply from 10.0.0.4: bytes=32 time<1ms TTL=128

Ping statistics for 10.0.0.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 15ms, Average = 3ms

C:\>
```



Configuration Details:

PC0 – IP Address: 10.0.0.1

PC1 – IP Address: 10.0.0.2

PC2 – IP Address: 10.0.0.3

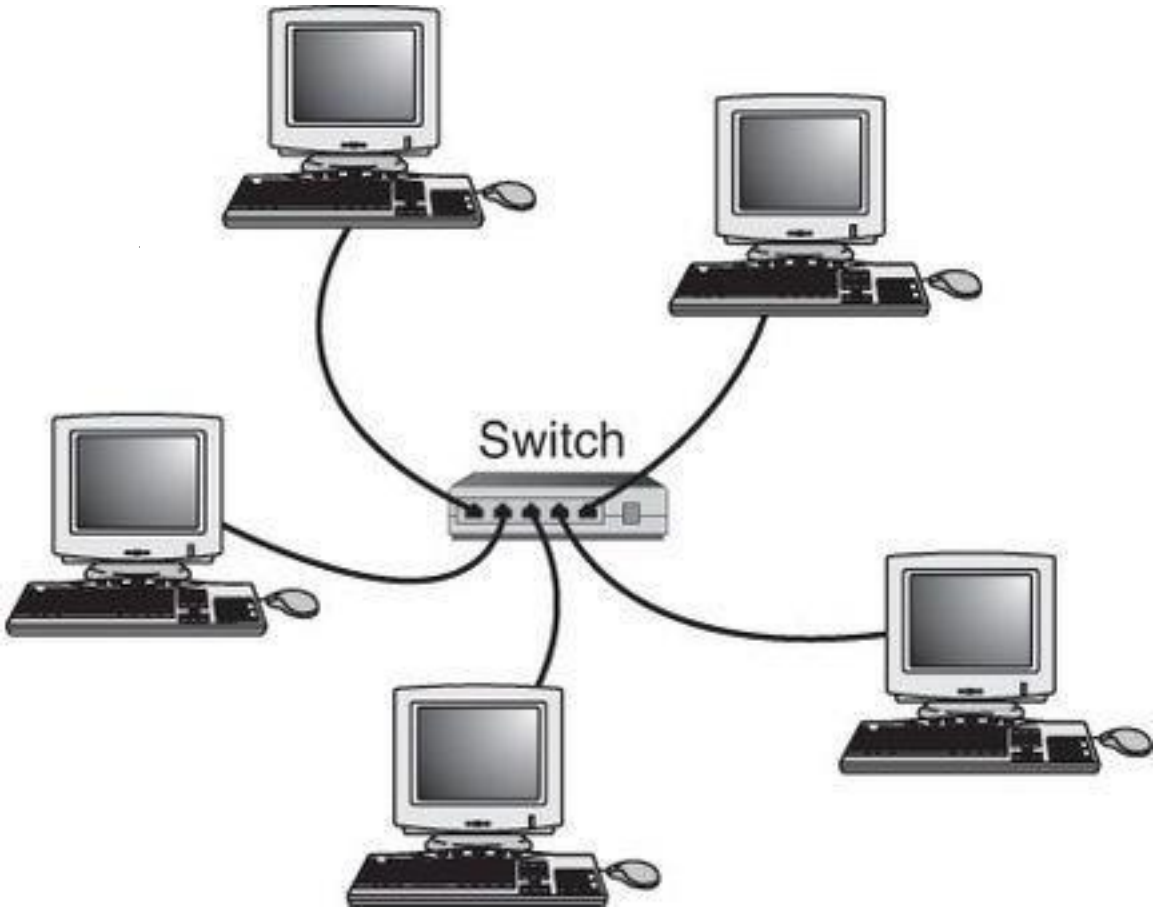
PC3 – IP Address: 10.0.0.4

Practical No 6

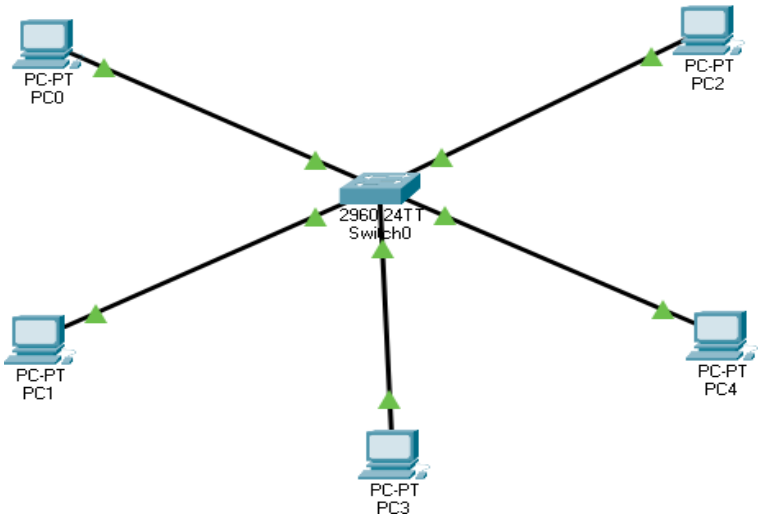
Aim:

Using Cisco Packet Tracker to implement star topology

(using 5 computers).


Switch

Output:


PC-PT
PC0
PC-PT
PC2
2960-24TT
Switch0
PC-PT
PC1
PC-PT
PC4
PC-PT
PC3

```
Packet Tracer PC Command Line 1.0
C:\>ipconfig

FastEthernet0 Connection:(default port)

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.....: FE80::202:4AFF:FE8C:80CB
   IPv6 Address.....: ::
   IPv4 Address.....: 10.0.0.2
   Subnet Mask.....: 255.0.0.0
   Default Gateway.....: ::
                                 0.0.0.0

Bluetooth Connection:

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.....: ::
   IPv6 Address.....: ::
   IPv4 Address.....: 0.0.0.0
   Subnet Mask.....: 0.0.0.0
   Default Gateway.....: ::
                                 0.0.0.0

C:\>ping 10.0.0.4

Pinging 10.0.0.4 with 32 bytes of data:

Reply from 10.0.0.4: bytes=32 time<1ms TTL=128
Reply from 10.0.0.4: bytes=32 time<1ms TTL=128
Reply from 10.0.0.4: bytes=32 time<1ms TTL=128
```

Configuration Details:

PC0 – IP Address: 10.0.0.1

PC1 – IP Address: 10.0.0.2

PC2 – IP Address: 10.0.0.5

PC3 – IP Address: 10.0.0.3

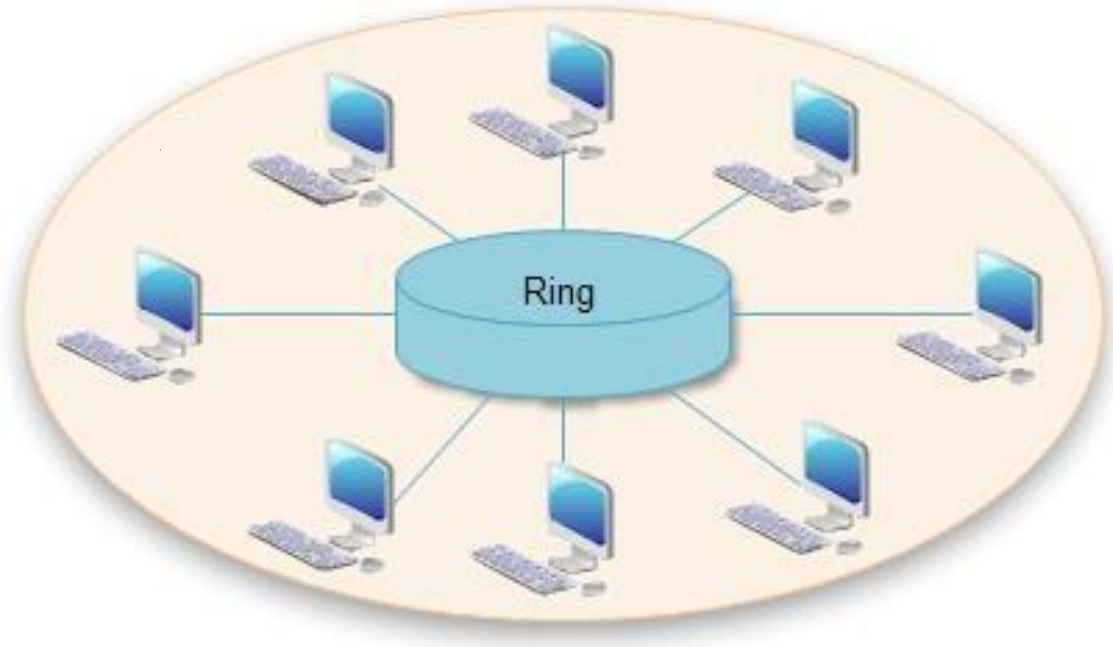
PC4 – IP Address: 10.0.0.4

Practical No 7

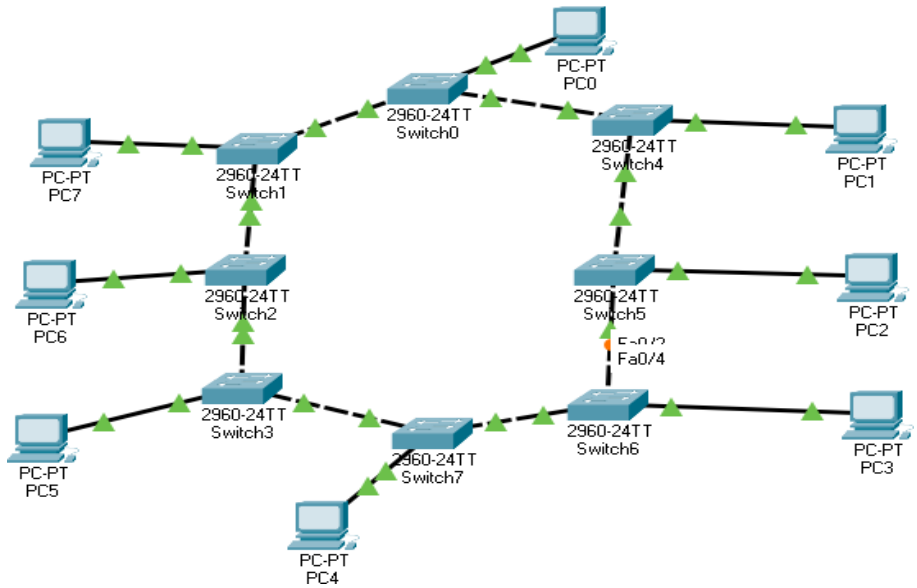
Aim:

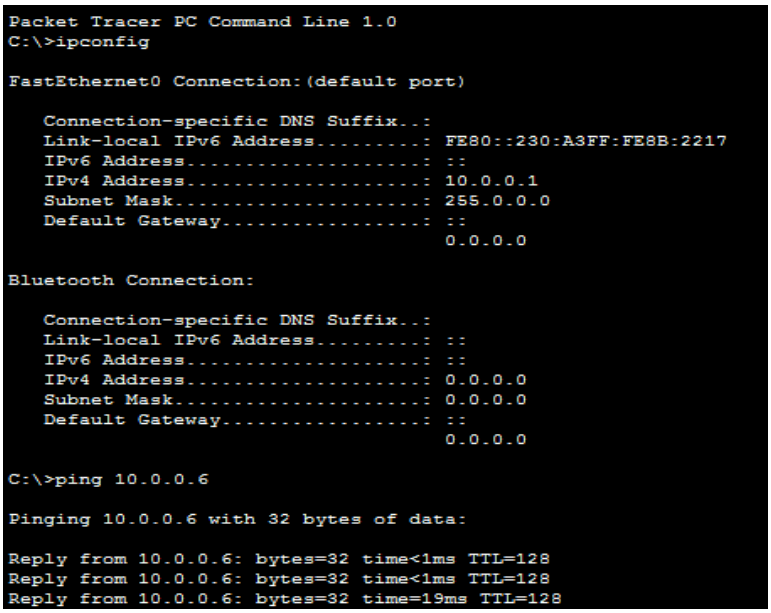
Using Cisco Packet Tracker to implement ring topology

(using 8 computers).



Output:





Configuration Details:

PC0 – IP Address: 10.0.0.1

PC1 – IP Address: 10.0.0.2

PC2 – IP Address: 10.0.0.3

PC3 – IP Address: 10.0.0.4

PC4 – IP Address: 10.0.0.5

PC5 – IP Address: 10.0.0.6

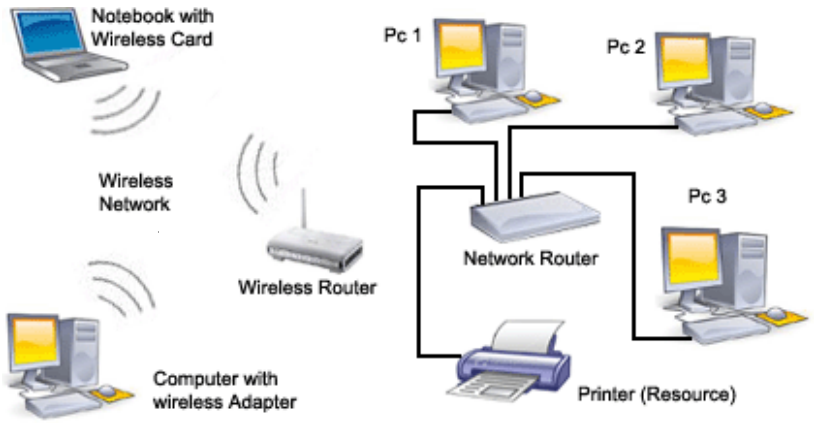
PC6 – IP Address: 10.0.0.7

PC7 – IP Address: 10.0.0.8

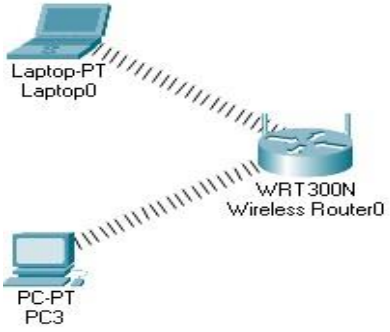
Practical No 8

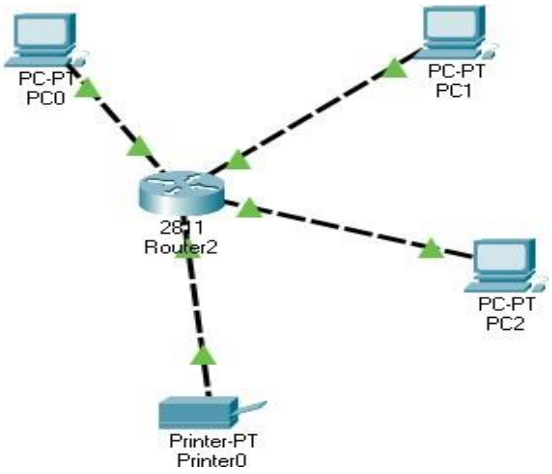
Aim:

The network shown in the diagram to implement by using Cisco Packet Tracker.



Output:





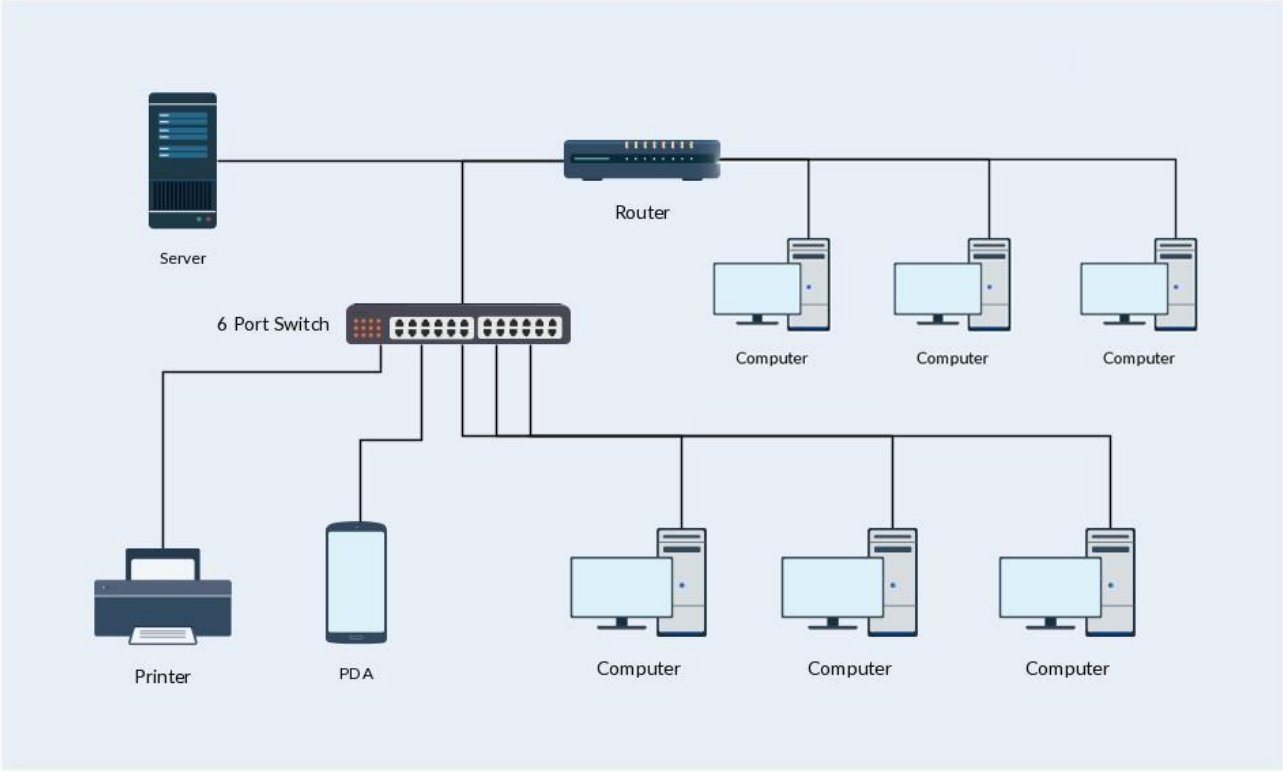

```
Packet Tracer PC Command Line 1.0
C:\>
ipconfig

Bluetooth Connection:(default port)

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.....: ::
   IPv6 Address.....: ::
   IPv4 Address.....: 0.0.0.0
   Subnet Mask.....: 0.0.0.0
   Default Gateway.....: ::
                                 0.0.0.0

Wireless0 Connection:

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.....: FE80::20A:F3FF:FED8:7033
   IPv6 Address.....: ::
   IPv4 Address.....: 192.168.0.2
   Subnet Mask.....: 255.255.255.0
   Default Gateway.....: ::
                                 192.168.0.1

C:\>ping 192.168.0.3

Pinging 192.168.0.3 with 32 bytes of data:

Reply from 192.168.0.3: bytes=32 time=15ms TTL=128
Reply from 192.168.0.3: bytes=32 time=22ms TTL=128
Reply from 192.168.0.3: bytes=32 time=24ms TTL=128
```

```
C:\>ipconfig

FastEthernet0 Connection:(default port)

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.....: FE80::290:CFF:FE35:1AB7
   IPv6 Address.....: ::
   IPv4 Address.....: 192.168.12.2
   Subnet Mask.....: 255.255.255.0
   Default Gateway.....: ::
                                 192.168.12.1

Bluetooth Connection:

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.....: ::
   IPv6 Address.....: ::
   IPv4 Address.....: 0.0.0.0
   Subnet Mask.....: 0.0.0.0
   Default Gateway.....: ::
                                 0.0.0.0

C:\>ping 192.168.10.2

Pinging 192.168.10.2 with 32 bytes of data:

Reply from 192.168.10.2: bytes=32 time<1ms TTL=127
Reply from 192.168.10.2: bytes=32 time<1ms TTL=127
Reply from 192.168.10.2: bytes=32 time<1ms TTL=127
Reply from 192.168.10.2: bytes=32 time<1ms TTL=127

Ping statistics for 192.168.10.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

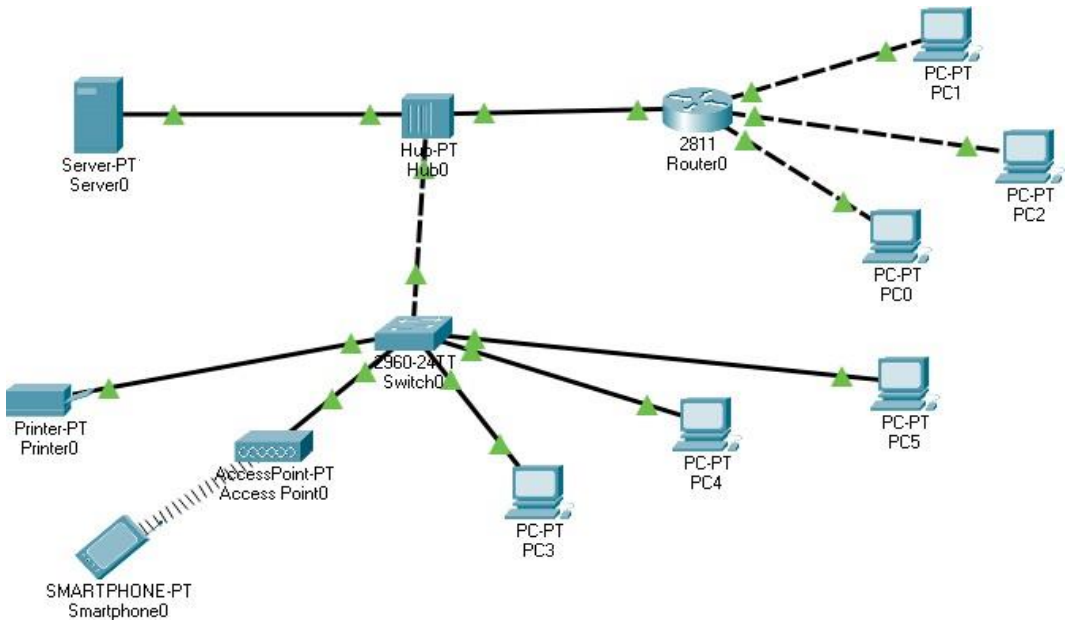
Practical No 9

Aim:

The network shown in the diagram to implement by using Cisco Packet Tracker.



Output:



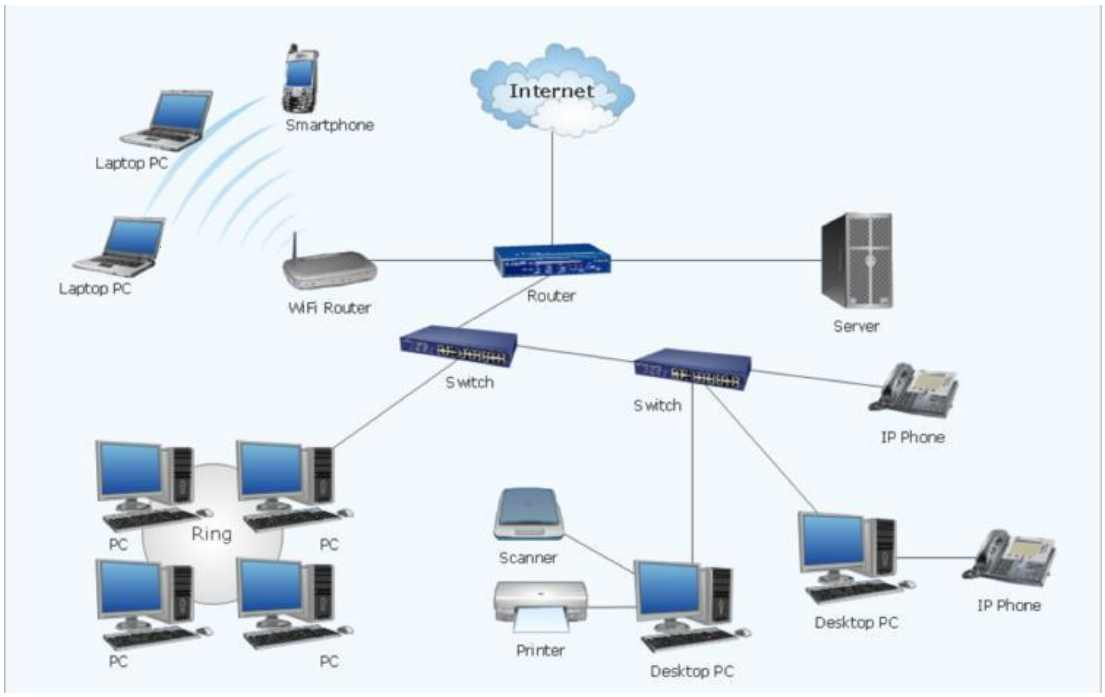

```
Packet Tracer SERVER Command Line 1.0
C:\>ipconfig

FastEthernet0 Connection:(default port)

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.....: FE80::2E0:8FFF:FED6:4B45
   IPv6 Address.....: ::
   IPv4 Address.....: 192.168.10.2
   Subnet Mask.....: 255.255.255.0
   Default Gateway.....: ::
                         192.168.10.1

C:\>ping 192.168.10.6

Pinging 192.168.10.6 with 32 bytes of data:

Reply from 192.168.10.6: bytes=32 time<1ms TTL=128
Reply from 192.168.10.6: bytes=32 time<1ms TTL=128
Reply from 192.168.10.6: bytes=32 time<1ms TTL=128
Reply from 192.168.10.6: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.10.6:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

```
   Link-local IPv6 Address.....: FE80::260:2FFF:FE18:5615
   IPv6 Address.....: ::
   IPv4 Address.....: 192.168.10.7
   Subnet Mask.....: 255.255.255.0
   Default Gateway.....: ::
                         192.168.10.1

3G/4G Cell1 Connection:

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.....: FE80::20A:41FF:FE8A:EC6
   IPv6 Address.....: ::
   Autoconfiguration IPv4 Address..: 169.254.14.198
   Subnet Mask.....: 255.255.0.0
   Default Gateway.....: ::
                         0.0.0.0

Bluetooth Connection:
 --More--
   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.....: ::
   IPv6 Address.....: ::
   IPv4 Address.....: 0.0.0.0
   Subnet Mask.....: 0.0.0.0
   Default Gateway.....: ::
                         0.0.0.0


C:\>ping 192.168.12.2

Pinging 192.168.12.2 with 32 bytes of data:

Reply from 192.168.12.2: bytes=32 time=17ms TTL=127
Reply from 192.168.12.2: bytes=32 time=17ms TTL=127
Reply from 192.168.12.2: bytes=32 time=24ms TTL=127
Reply from 192.168.12.2: bytes=32 time=15ms TTL=127
```

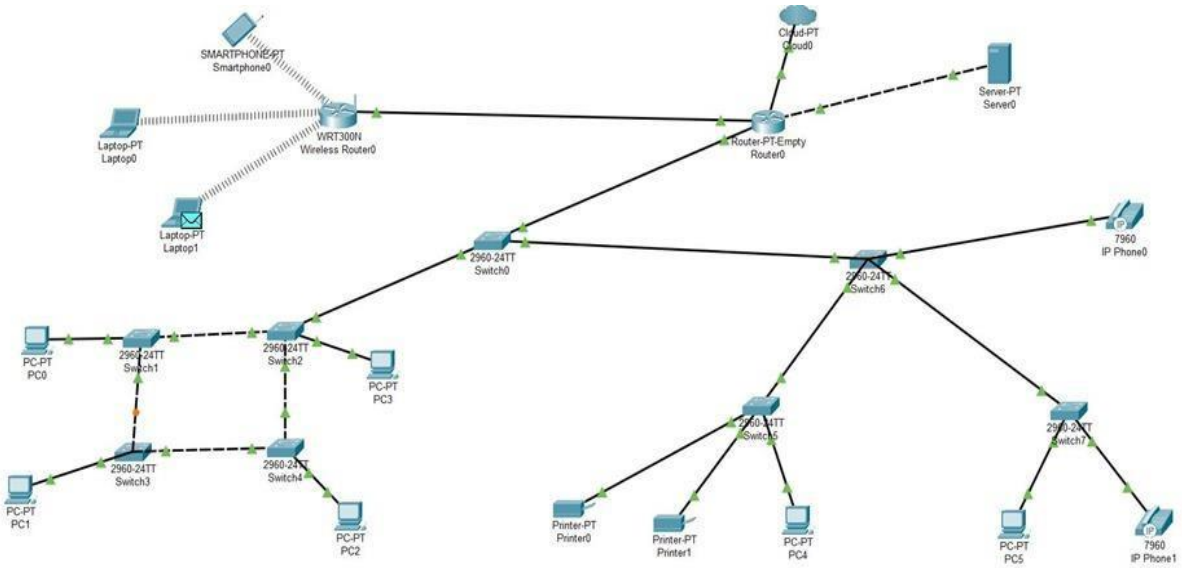
Practical No 10

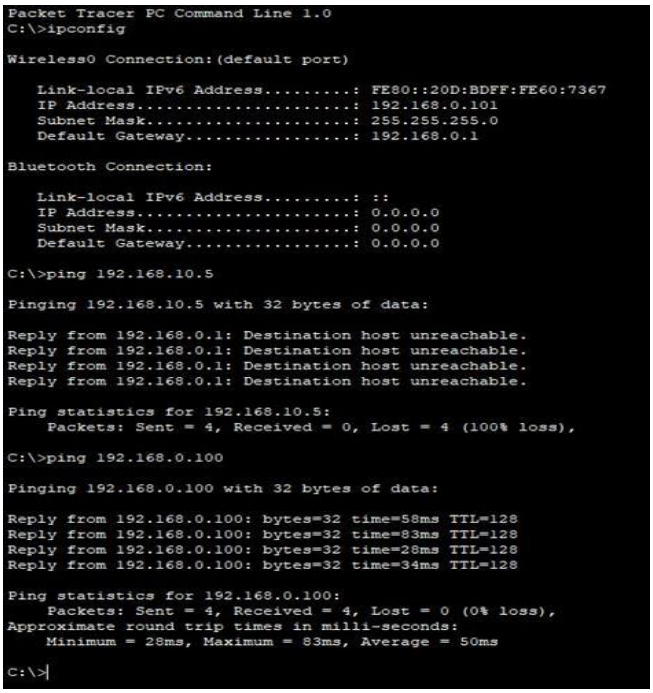
Aim:

The network shown in the diagram to implement by using Cisco Packet Tracker.


Internet
Smartphone
Laptop PC
Laptop PC
WiFi Router
Router
Server
Switch
Switch
IP Phone
Ring
PC
PC
PC
PC
Scanner
Printer
Desktop PC
Desktop PC
IP Phone

Output:

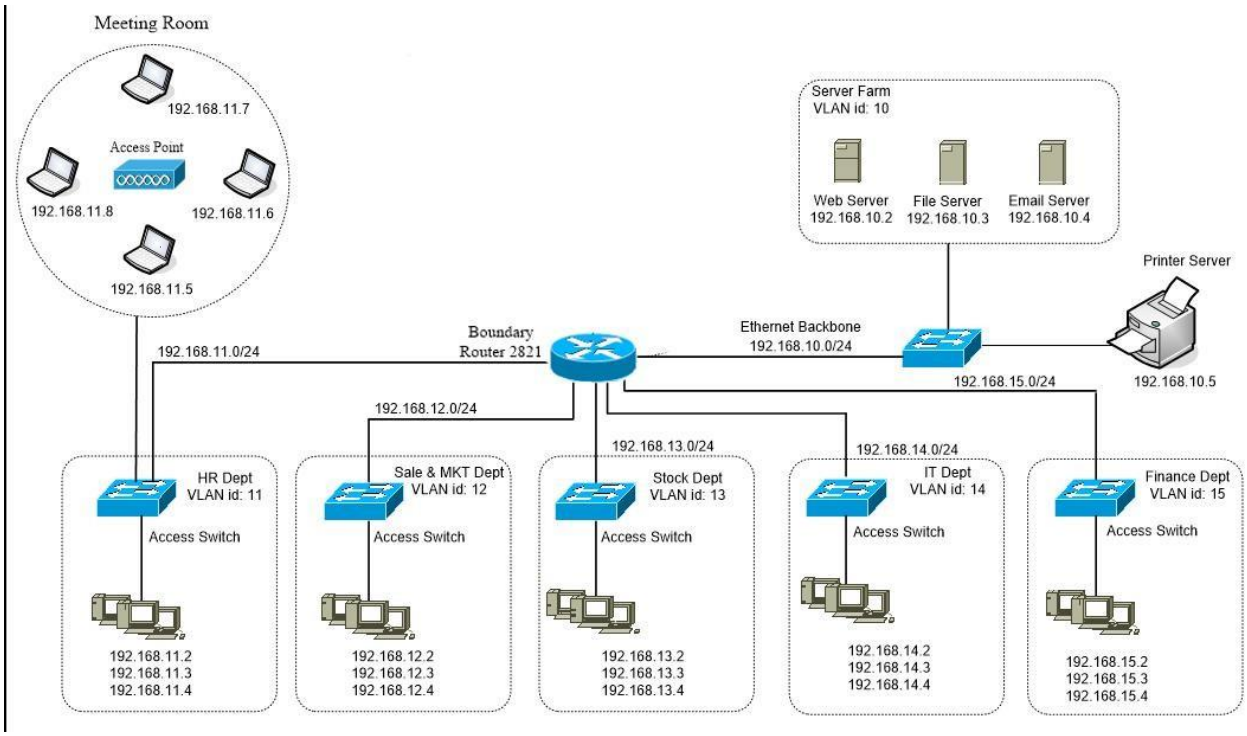

SMARTPHONE-PT
Smartphone0
Cloud-PT
Cloud0
Server-PT
Server0
Laptop-PT
Laptop0
WRT300N
Wireless Router0
Router-PT-Empty
Router0
Laptop-PT
Laptop1
2960-24TT
Switch0
7960
IP Phone0
PC-PT
PC0
2960-24TT
Switch1
2960-24TT
Switch2
PC-PT
PC3
2960-24TT
Switch3
2960-24TT
Switch4
PC-PT
PC1
PC-PT
PC2
Printer-PT
Printer0
Printer-PT
Printer1
PC-PT
PC4
PC-PT
PC5
7960
IP Phone1



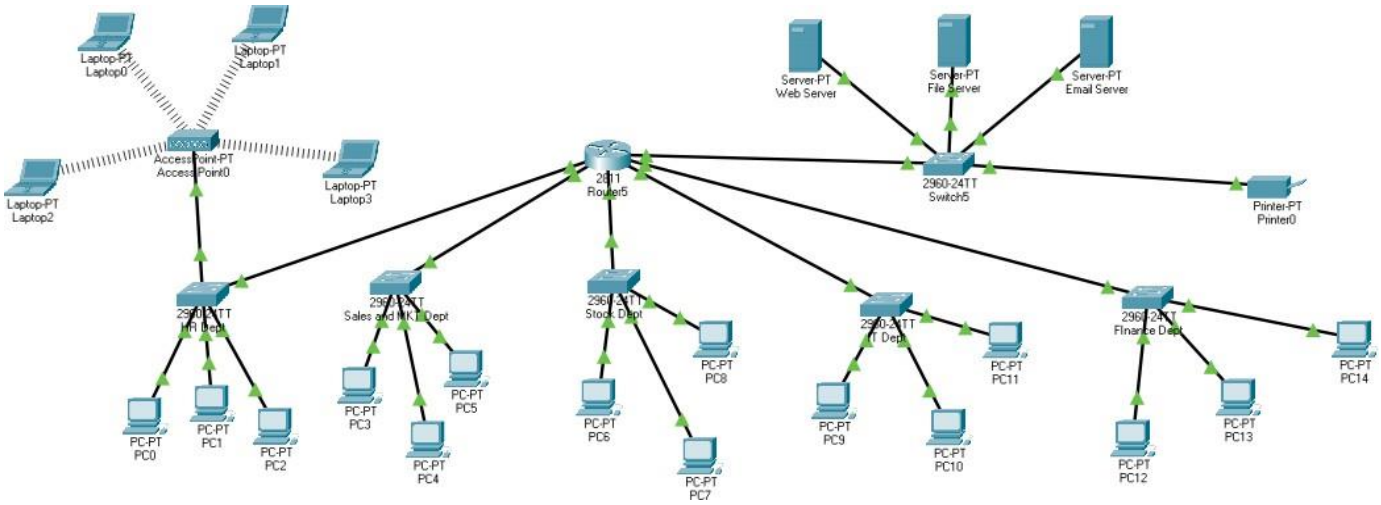
Practical No 11

Aim:

The network shown in the diagram to implement by using Cisco Packet Tracker.


Meeting Room
192.168.11.7
Access Point
192.168.11.8
192.168.11.6
192.168.11.5
192.168.11.0/24
Boundary
Router 2821
Ethernet Backbone
192.168.10.0/24
Server Farm
VLAN id: 10
Web Server
192.168.10.2
File Server
192.168.10.3
Email Server
192.168.10.4
Printer Server
192.168.10.5
192.168.15.0/24
192.168.12.0/24
192.168.13.0/24
192.168.14.0/24
HR Dept
VLAN id: 11
Access Switch
192.168.11.2
192.168.11.3
192.168.11.4
Sale & MKT Dept
VLAN id: 12
Access Switch
192.168.12.2
192.168.12.3
192.168.12.4
Stock Dept
VLAN id: 13
Access Switch
192.168.13.2
192.168.13.3
192.168.13.4
IT Dept
VLAN id: 14
Access Switch
192.168.14.2
192.168.14.3
192.168.14.4
Finance Dept
VLAN id: 15
Access Switch
192.168.15.2
192.168.15.3
192.168.15.4

Output:


Laptop-PT
Laptop0
Laptop-PT
Laptop1
Laptop-PT
Laptop2
Access Point-PT
Access Point0
Laptop-PT
Laptop3
Server-PT
Web Server
Server-PT
File Server
Server-PT
Email Server
2811
Router5
2960-24TT
Switch5
Printer-PT
Printer0
2960-24TT
HR Dept
2960-24TT
Sales and MKT Dept
2960-24TT
Stock Dept
2960-24TT
IT Dept
2960-24TT
Finance Dept
PC-PT
PC0
PC-PT
PC1
PC-PT
PC2
PC-PT
PC3
PC-PT
PC4
PC-PT
PC5
PC-PT
PC6
PC-PT
PC7
PC-PT
PC8
PC-PT
PC9
PC-PT
PC10
PC-PT
PC11
PC-PT
PC12
PC-PT
PC13
PC-PT
PC14

```
C:\>ipconfig

Wireless0 Connection:(default port)

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.....: FE80::200:CFF:FE54:758B
   IPv6 Address.....: ::
   IPv4 Address.....: 192.168.11.6
   Subnet Mask.....: 255.255.255.0
   Default Gateway.....: ::
                                 192.168.11.1

Bluetooth Connection:

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.....: ::
   IPv6 Address.....: ::
   IPv4 Address.....: 0.0.0.0
   Subnet Mask.....: 0.0.0.0
   Default Gateway.....: ::
                                 0.0.0.0

C:\>ping 192.168.16.2

Pinging 192.168.16.2 with 32 bytes of data:

Request timed out.
Reply from 192.168.16.2: bytes=32 time=18ms TTL=127
Reply from 192.168.16.2: bytes=32 time=15ms TTL=127
Reply from 192.168.16.2: bytes=32 time=70ms TTL=127

Ping statistics for 192.168.16.2:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 15ms, Maximum = 70ms, Average = 34ms

C:\>
```

```
C:\>ipconfig

FastEthernet0 Connection:(default port)

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.....: FE80::209:7CFF:FEE8:7B3E
   IPv6 Address.....: ::
   IPv4 Address.....: 192.168.15.4
   Subnet Mask.....: 255.255.255.0
   Default Gateway.....: ::
                                 192.168.15.1

Bluetooth Connection:

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.....: ::
   IPv6 Address.....: ::
   IPv4 Address.....: 0.0.0.0
   Subnet Mask.....: 0.0.0.0
   Default Gateway.....: ::
                                 0.0.0.0

C:\>ping 192.168.11.7

Pinging 192.168.11.7 with 32 bytes of data:

Request timed out.
Reply from 192.168.11.7: bytes=32 time=3ms TTL=127
Reply from 192.168.11.7: bytes=32 time=66ms TTL=127
Reply from 192.168.11.7: bytes=32 time=76ms TTL=127

Ping statistics for 192.168.11.7:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 3ms, Maximum = 76ms, Average = 48ms

C:\>
```