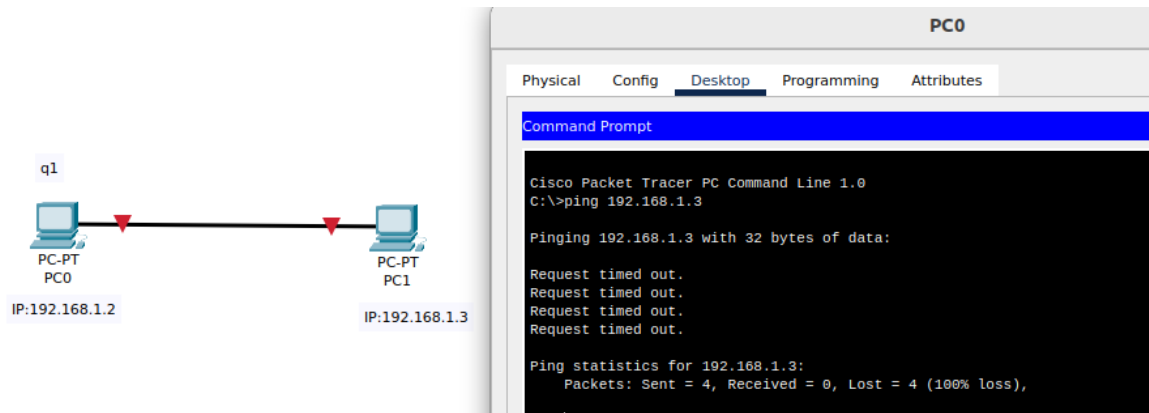
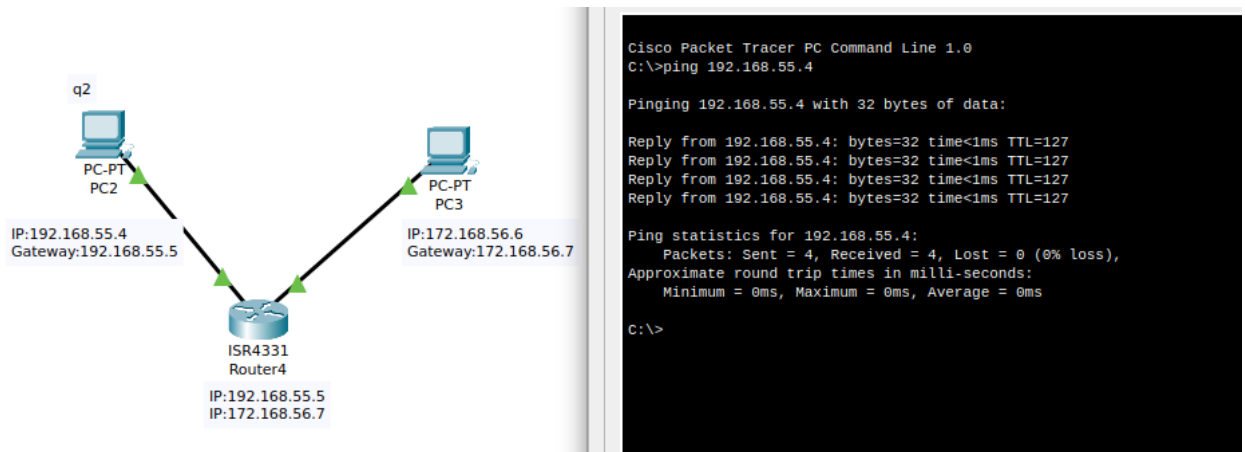


## Tutorial1: How many ways one can connect two end nodes

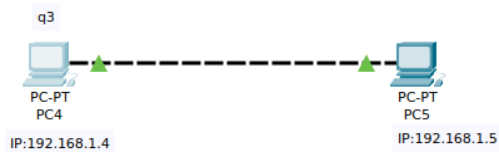
1. Two End nodes Connected with the Straight Ethernet Cable.  
Where both end nodes are in the same network



2. Two End nodes Connected with the Straight Ethernet Cable.  
Where both end nodes are in the different network



3. Two End nodes Connected with the Cross Coupled Ethernet Cable. Where both end nodes are in the same network



```
Command Prompt

Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.5

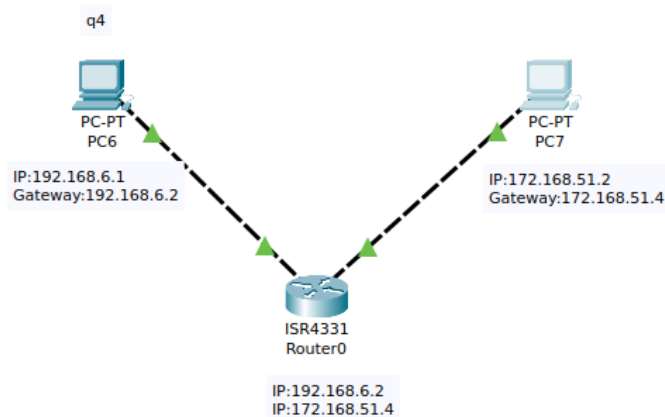
Pinging 192.168.1.5 with 32 bytes of data:

Reply from 192.168.1.5: bytes=32 time<1ms TTL=128
Reply from 192.168.1.5: bytes=32 time<1ms TTL=128
Reply from 192.168.1.5: bytes=32 time<1ms TTL=128
Reply from 192.168.1.5: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

4. Two End nodes Connected with the Cross Coupled Ethernet Cable. Where both end nodes are in the different network.



```
Command Prompt

Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.6.1

Pinging 192.168.6.1 with 32 bytes of data:

Reply from 192.168.6.1: bytes=32 time<1ms TTL=127
Reply from 192.168.6.1: bytes=32 time<1ms TTL=127
Reply from 192.168.6.1: bytes=32 time=19ms TTL=127
Reply from 192.168.6.1: bytes=32 time<1ms TTL=127

Ping statistics for 192.168.6.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 19ms, Average = 4ms

C:\>
```

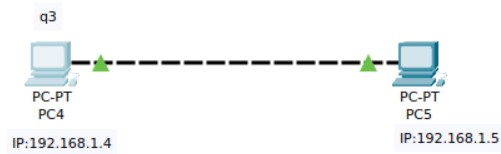
5. What are ways (or technologies) two computers are directly connected and communicate with each other

- **Ethernet Connectivity:** Two computers can be linked via Ethernet cables to form a Local Area Network (LAN), enabling high-speed data exchange suitable for both home and office environments.
- **USB Link:** Computers can be directly connected using USB cables or USB-to-USB adapters, aiding in quick file transfers between the two devices.
- **Firewire Technology:** Firewire (IEEE 1394) is a high-speed data transfer method for connecting computers, external hard drives, and digital cameras.
- **Crossover Cable Setup:** A crossover Ethernet cable can directly connect two computers, useful for activities such as file sharing or gaming without the need for a network switch.
- **Serial Connectivity:** Although less prevalent now, serial cables still offer a basic means of direct data transfer between computers, albeit at slower speeds.
- **Direct Cable Connection:** Some operating systems offer software-based direct cable connection using a serial or parallel cable. This can enable file sharing and communication between computers.
- **Point-to-Point Protocol (PPP):** PPP can be used to establish a direct connection between two computers over a serial connection. It's often used for dial-up internet connections.

## **6.What is cross over Ethernet Cable. Show connection**

A crossover Ethernet cable is a type of Ethernet cable that is used to directly connect two computers or devices without the need for an intermediary device like a network switch. This type of cable is designed to enable communication between two similar devices, such as two computers, without the need for a dedicated network infrastructure.

An example of cross-over connection is given below:



#### Command Prompt

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.5

Pinging 192.168.1.5 with 32 bytes of data:

Reply from 192.168.1.5: bytes=32 time<1ms TTL=128
Reply from 192.168.1.5: bytes=32 time<1ms TTL=128
Reply from 192.168.1.5: bytes=32 time<1ms TTL=128
Reply from 192.168.1.5: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

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