**Lab1**

**Local Area Network (LAN).**

* **Four PCs**
* **One Switch**
* **Basic IP Configuration**
* **Testing connectivity using ping**

**Lab Steps: Setting Up a Simple LAN**

**Step 1: Open Cisco Packet Tracer**

Launch Cisco Packet Tracer and create a new project.

**Step 2: Add Network Devices**

Drag and drop the following devices onto the workspace:

1 x Switch

4 x PC (PC-0 to PC-4)

**Step 3: Connect the Devices**

Use Copper Straight-Through Cables to connect:

PC-0 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/1**)

PC-1 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/2**)

PC-2 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/3**)

PC-3 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/4**)

**Step 4: Assign IP Addresses to PCs**

**Click on PC-0** → Go to Desktop → Open IP Configuration:

**IP Address:** 192.168.1.1

**Subnet Mask:** 255.255.255.0

**Click on PC-1**

**IP Address:** 192.168.1.2

**Subnet Mask**: 255.255.255.0

**Click on PC-2**

**IP Address:** 192.168.1.3

**Subnet Mask**: 255.255.255.0

**Click on PC-3**

**IP Address:** 192.168.1.2

**Subnet Mask**: 255.255.255.0

**Step 5: Test Connectivity**

Open Command Prompt on PC-0 and type:-

**Ping 192.168.1.1**

**Lab2**

**Wide Area Network (WAN).**

**LAN ONE.**

* **Three PCs**
* **One Switch**
* **Basic IP Configuration**
* **Testing connectivity using ping**

**Lab Steps: Setting Up a Simple LAN**

**Step 1: Open Cisco Packet Tracer**

Launch Cisco Packet Tracer and create a new project.

**Step 2: Add Network Devices**

Drag and drop the following devices onto the workspace:

1 x Switch

3 x PC (PC-0 to PC-3)

**Step 3: Connect the Devices**

Use Copper Straight-Through Cables to connect:

PC-0 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/1**)

PC-1 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/2**)

PC-2 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/3**)

**Step 4: Assign IP Addresses to PCs**

**Click on PC-0** → Go to Desktop → Open IP Configuration:

**IP Address:** 192.11.1.1

**Subnet Mask:** 255.255.255.0

**Click on PC-1**

**IP Address:** 192.11.1.2

**Subnet Mask:** 255.255.255.0

**Click on PC-2**

**IP Address:** 192.11.1.3

**Subnet Mask:** 255.255.255.0

**LAN TWO.**

* **Three PCs**
* **One Switch**
* **Basic IP Configuration**
* **Testing connectivity using ping**

**Lab Steps: Setting Up a Simple LAN**

**Step 1: Open Cisco Packet Tracer**

Launch Cisco Packet Tracer and create a new project.

**Step 2: Add Network Devices**

Drag and drop the following devices onto the workspace:

1 x Switch

3 x PC (PC-0 to PC-3)

**Step 3: Connect the Devices**

Use Copper Straight-Through Cables to connect:

PC-0 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/1**)

PC-1 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/2**)

PC-2 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/3**)

**Step 4: Assign IP Addresses to PCs**

**Click on PC-0** → Go to Desktop → Open IP Configuration:

**IP Address:** 172.16.0.1

**Subnet Mask:** 255.255.0.0

**Click on PC-1**

**IP Address:** 172.16.0.2

**Subnet Mask:** 255.255.0.0

**Click on PC-2**

**IP Address:** 172.16.0.3

**Subnet Mask:** 255.255.0.0

**SO WE NOW WE CONMECTED BOTH TWO LABS LAB ONE AND LAB TWO.**

**To connected the two labs we use Router connects different networks and directs data between them.**

We give router two ip address by providing them with the holes they are connected to in networks.

1. **Ip address comes LAN ONE.** (**FastEthernet0)** 192.11.1.4. Make sure is on this port.
2. **Ip address Comes LAN TWO.** (**FastEthernet1)** 172.16.0.4. Make sure is on this port.

This ip address you give router was called Default Gateway.

**LAN ONE.**

* Now Go back to your network and open each PC and type the following.
* **Click on PC-0** → Go to Desktop → Open IP Configuration.
* **Default Gateway**: 192.11.1.4.

LAN TWO.

* Now Go back to your network and open each PC and type the following**.**
* **Click on PC-0** → Go to Desktop → Open IP Configuration.
* **Default Gateway**: 172.16.0.4.

Test it using this Command.

Open one pc in network land one.

**Click on PC-0** → Go to Desktop → Command Prompt.

Write Ping 192.11.1.4.

**Lab3**

**Metropolitan Area network (MAN)**

**LAN ONE.**

* **Three PCs**
* **One Switch**
* **Basic IP Configuration**
* **Testing connectivity using ping**

**Lab Steps: Setting Up a Simple LAN**

**Step 1: Open Cisco Packet Tracer**

Launch Cisco Packet Tracer and create a new project.

**Step 2: Add Network Devices**

Drag and drop the following devices onto the workspace:

1 x Switch

3 x PC (PC-0 to PC-3)

**Step 3: Connect the Devices**

Use Copper Straight-Through Cables to connect:

PC-0 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/1**)

PC-1 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/2**)

PC-2 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/3**)

**Step 4: Assign IP Addresses to PCs**

**Click on PC-0** → Go to Desktop → Open IP Configuration:

**IP Address:** 192.1.1.1

**Subnet Mask:** 255.255.255.0

**Click on PC-1**

**IP Address:** 192.11.1.2

**Subnet Mask:** 255.255.255.0

**Click on PC-2**

**IP Address:** 192.11.1.3

**Subnet Mask:** 255.255.255.0

**LAN Two.**

* **Three PCs**
* **One Switch**
* **Basic IP Configuration**
* **Testing connectivity using ping**

**Lab Steps: Setting Up a Simple LAN**

**Step 1: Open Cisco Packet Tracer**

Launch Cisco Packet Tracer and create a new project.

**Step 2: Add Network Devices**

Drag and drop the following devices onto the workspace:

1 x Switch

3 x PC (PC-0 to PC-3)

**Step 3: Connect the Devices**

Use Copper Straight-Through Cables to connect:

PC-0 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/1**)

PC-1 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/2**)

PC-2 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/3**)

**Step 4: Assign IP Addresses to PCs**

**Click on PC-0** → Go to Desktop → Open IP Configuration:

**IP Address:** 192.0.0.1

**Subnet Mask:** 255.255.255.0

**Click on PC-1**

**IP Address:** 192.0.0.2

**Subnet Mask:** 255.255.255.0

**Click on PC-2**

**IP Address:** 192.0.0.3

**Subnet Mask:** 255.255.255.0

**LAN Three.**

* **Three PCs**
* **One Switch**
* **Basic IP Configuration**
* **Testing connectivity using ping**

**Lab Steps: Setting Up a Simple LAN**

**Step 1: Open Cisco Packet Tracer**

Launch Cisco Packet Tracer and create a new project.

**Step 2: Add Network Devices**

Drag and drop the following devices onto the workspace:

1 x Switch

3 x PC (PC-0 to PC-3)

**Step 3: Connect the Devices**

Use Copper Straight-Through Cables to connect:

PC-0 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/1**)

PC-1 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/2**)

PC-2 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/3**)

**Step 4: Assign IP Addresses to PCs**

**Click on PC-0** → Go to Desktop → Open IP Configuration:

**IP Address:** 172.16.0.1

**Subnet Mask:** 255.255.0.0

**Click on PC-1**

**IP Address:** 172.16.0.2

**Subnet Mask:** 255.255.0.0

**Click on PC-2**

**IP Address:** 172.16.0.3

**Subnet Mask:** 255.255.0.0

**LAN Four.**

* **Three PCs**
* **One Switch**
* **Basic IP Configuration**
* **Testing connectivity using ping**

**Lab Steps: Setting Up a Simple LAN**

**Step 1: Open Cisco Packet Tracer**

Launch Cisco Packet Tracer and create a new project.

**Step 2: Add Network Devices**

Drag and drop the following devices onto the workspace:

1 x Switch

3 x PC (PC-0 to PC-3)

**Step 3: Connect the Devices**

Use Copper Straight-Through Cables to connect:

PC-0 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/1**)

PC-1 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/2**)

PC-2 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/3**)

**Step 4: Assign IP Addresses to PCs**

**Click on PC-0** → Go to Desktop → Open IP Configuration:

**IP Address:** 128.0.0.1

**Subnet Mask:** 255.255.0.0

**Click on PC-1**

**IP Address:** 128.0.0.2

**Subnet Mask:** 255.255.0.0

**Click on PC-2**

**IP Address:** 128.0.0.1

**Subnet Mask:** 255.255.0.0.

**SO WE NOW WE CONMECTED FOUR LABS.**

**To connected the four labs we use Router connects different networks and directs data between them.**

We give router four ip address by providing them with the holes they are connected to in networks.

* **You can follow all networks on any computer.**

1. **Ip address comes LAN ONE.** (**FastEthernet0/0)** 192.1.1.4. Make sure is on this port.
2. **Ip address Comes LAN TWO.** (**FastEthernet0/1)** 192.0.0.4. Make sure is on this port.
3. **Ip address Comes LAN THREE.** (**FastEthernet0/1/0)** 172.16.0.4. Make sure is on this port.
4. **Ip address Comes LAN FOUR.** (**FastEthernet0/1/1)** 128.0.0.4. Make sure is on this port.

This ip address you give router was called Default Gateway.

**LAN ONE.**

* Now Go back to your network and open each PC and type the following.
* **Click on PC-0** → Go to Desktop → Open IP Configuration.
* **Default Gateway**: 192.1.1.4.

**LAN Two.**

* Now Go back to your network and open each PC and type the following.
* **Click on PC-0** → Go to Desktop → Open IP Configuration.
* **Default Gateway**: 192.0.0.4.

**LAN Three.**

* Now Go back to your network and open each PC and type the following.
* **Click on PC-0** → Go to Desktop → Open IP Configuration.
* **Default Gateway**: 172.16.0.4.

**LAN Four.**

* Now Go back to your network and open each PC and type the following.
* **Click on PC-0** → Go to Desktop → Open IP Configuration.
* **Default Gateway**: 128.0.0.4.

Test it using this Command.

* Open one pc in network land one.
* **Click on PC-0** → Go to Desktop → Command Prompt.
* Write Ping 192.0.0.2.

ROUTER CONFIGURATION.

Now, all computers within the same network can communicate with each other, but they cannot reach another network. Now we will configure them to access the other network. Follow these steps:

* Click on router – config – Static.
* Fill these blanks.
  + Network:-
  + Mask:-
  + Next Hop:-
* Then click add bottom.

**Router 2**

**Router 3**

1. Network:- 192.1.1.0

Mask: - 255.255.255.0

Next hop: - 192.168.0.1

Add.

1. Network:- 192.0.0.0

Mask: - 255.255.255.0

Next hop: - 192.168.0.1

Add.

1. Network:- 192.168.0.0

Mask: - 255.255.255.0

Next hop: - 192.168.0.0

Add.

1. Network:- 172.16.0.0

Mask: - 255.255.0.0

Next hop: - 192.168.0.2

Add.

1. Network:- 128.0.0.0

Mask: - 255.255.0.0

Next hop: - 192.168.0.2

Add.

1. Network:- 192.168.0.0.0

Mask: - 255.255.255.0

Next hop: - 192.168.0.2

Add.

**Flow these Links**

<https://www.youtube.com/watch?v=qxHbrbLeBxw>

<https://www.youtube.com/watch?v=vcAtxgDsl00>

**Lab4**

**Personal Area Network (PAN).**

**Steps to Create a PAN in Cisco Packet Tracer**

**1. Open Cisco Packet Tracer**

* Launch **Cisco Packet Tracer** on your computer.

**2. Add Devices to the Workspace**

* Go to **"End Devices"** and select:
  + **Laptop** (for connecting via Wi-Fi or Bluetooth)
  + **Smartphone** (to simulate a mobile device)
  + **Tablet** (optional)
  + **Wireless Router** (for Wi-Fi-based PAN)
  + **Bluetooth-enabled PC** (for Bluetooth PAN)
* To make your pc wireless
* **Click on PC-0** → Go to Physical and make sure is on.
* Remove RJ45 Connectors replace Wireless Connector.
* Done it working and test it.

**Lab 5**

**Metropolitan Area network (MAN)**

**Office ONE.**

* **Two PCs**
* **One Switch**
* **Basic IP Configuration**
* **Testing connectivity using ping**

**Lab Steps: Setting Up a Simple LAN**

**Step 1: Open Cisco Packet Tracer**

Launch Cisco Packet Tracer and create a new project.

**Step 2: Add Network Devices**

Drag and drop the following devices onto the workspace:

1 x Switch

2 x PC (PC-0 to PC-2)

**Step 3: Connect the Devices**

Use Copper Straight-Through Cables to connect:

PC-0 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/1**)

PC-1 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/2**)

**Step 4: Assign IP Addresses to PCs**

**Click on PC-0** → Go to Desktop → Open IP Configuration:

**IP Address:** 192.168.1.2

**Subnet Mask:** 255.255.255.0

**Click on PC-1**

**IP Address:** 192.168.1.3

**Subnet Mask:** 255.255.255.0

**Office Two.**

* **Two PCs**
* **One Switch**
* **Basic IP Configuration**
* **Testing connectivity using ping**

**Lab Steps: Setting Up a Simple LAN**

**Step 1: Open Cisco Packet Tracer**

Launch Cisco Packet Tracer and create a new project.

**Step 2: Add Network Devices**

Drag and drop the following devices onto the workspace:

1 x Switch

2 x PC (PC-0 to PC-2)

**Step 3: Connect the Devices**

Use Copper Straight-Through Cables to connect:

PC-0 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/1**)

PC-1 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/2**)

**Step 4: Assign IP Addresses to PCs**

**Click on PC-0** → Go to Desktop → Open IP Configuration:

**IP Address:** 192.168.2.2

**Subnet Mask:** 255.255.255.0

**Click on PC-1**

**IP Address:** 192.168.2.3

**Subnet Mask:** 255.255.255.0

**Office Three.**

* **Two PCs**
* **One Switch**
* **Basic IP Configuration**
* **Testing connectivity using ping**

**Lab Steps: Setting Up a Simple LAN**

**Step 1: Open Cisco Packet Tracer**

Launch Cisco Packet Tracer and create a new project.

**Step 2: Add Network Devices**

Drag and drop the following devices onto the workspace:

1 x Switch

2 x PC (PC-0 to PC-2)

**Step 3: Connect the Devices**

Use Copper Straight-Through Cables to connect:

PC-0 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/1**)

PC-1 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/2**)

**Step 4: Assign IP Addresses to PCs**

**Click on PC-0** → Go to Desktop → Open IP Configuration:

**IP Address:** 192.168.3.2

**Subnet Mask:** 255.255.255.0

**Click on PC-1**

**IP Address:** 192.168.3.3

**Subnet Mask:** 255.255.255.0

**SO WE NOW WE CONMECTED FOUR LABS.**

**To connected the four labs we use Router connects different networks and directs data between them.**

We give router four ip address by providing them with the holes they are connected to in networks.

* **You can follow all networks on any computer.**

1. **Ip address comes Office ONE.** (**FastEthernet0/0)** 192.168.1.1. Make sure is on this port.
2. **Ip address Comes Office TWO.** (**FastEthernet0/1)** 192.168.2.1. Make sure is on this port.
3. **Ip address Comes Office THREE.** (**FastEthernet0/1/0)** 192.168.3.1. Make sure is on this port.

This ip address you give router was called Default Gateway.

**Office ONE.**

* Now Go back to your network and open each PC and type the following.
* **Click on PC-0** → Go to Desktop → Open IP Configuration.
* **Default Gateway**: 192.168.1.1

**Office Two.**

* Now Go back to your network and open each PC and type the following.
* **Click on PC-0** → Go to Desktop → Open IP Configuration.
* **Default Gateway**: 192.168.2.1.

**Office Three.**

* Now Go back to your network and open each PC and type the following.
* **Click on PC-0** → Go to Desktop → Open IP Configuration.
* **Default Gateway**: 192.168.3.2.

Test it using this Command.

* Open one pc in network land one.
* **Click on PC-0** → Go to Desktop → Command Prompt.
* Write Ping 192.168.3.2.

**NETWORK TOPOLOGY**

**Bus Topology.**

### **Required Equipment:**

1. **3 Switches**
2. **6 Computers (PC1 – PC6)**
3. **1 Backbone Cable (Coaxial or Ethernet Hub as a Bus) RJ45 Cables**.
4. **Testing connectivity using ping.**

**Step 1: Open Cisco Packet Tracer**

Launch Cisco Packet Tracer and create a new project.

**Step 2: Add Network Devices**

Drag and drop the following devices onto the workspace:

3 x Switch

6 x PC (PC-0 to PC-5)

**Step 3: Connect the Devices**

Use Copper Straight-Through Cables to connect:

PC-0 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/1**)

PC-1 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/2**)

PC-2 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/1**)

PC-3 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/2**)

PC-4 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/1**)

PC-5 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/2**)

**Step 4: Assign IP Addresses to PCs**

**Click on PC-0** → Go to Desktop → Open IP Configuration:

**Click on PC-3**

**IP Address:** 192.16.1.3

**Subnet Mask:** 255.255.255.0

**Default Gateway**: 192.16.1.1

**Click on PC-4**

**IP Address:** 192.16.1.4

**Subnet Mask:** 255.255.255.0

**Default Gateway**: 192.16.1.1

**IP Address:** 192.16.1.2

**Subnet Mask:** 255.255.255.0

**Default Gateway**: 192.16.1.1

**Click on PC-1**

**IP Address:** 192.16.1.2

**Subnet Mask:** 255.255.255.0

**Default Gateway**: 192.16.1.1

**Click on PC-5**

**IP Address:** 192.16.1.5

**Click on PC-7**

**IP Address:** 192.16.1.7

**Subnet Mask:** 255.255.255.0

**Default Gateway**: 192.16.1.1

**Subnet Mask:** 255.255.255.0

**Default Gateway**: 192.16.1.1

**Click on PC-6**

**IP Address:** 192.16.1.6

**Subnet Mask:** 255.255.255.0

**Default Gateway**: 192.16.1.1

Test it using this Command.

* Open one pc in network land one.
* **Click on PC-0** → Go to Desktop → Command Prompt.
* Write Ping 192.16.1.7

**Star Topology.**

### **Required Equipment:**

1. **1 Switches**
2. **4 Computers (PC1 – PC4)**
3. **1 Backbone Cable (Coaxial or Ethernet Hub as a Bus) RJ45 Cables**.
4. **Testing connectivity using ping.**

**Step 1: Open Cisco Packet Tracer**

Launch Cisco Packet Tracer and create a new project.

**Step 2: Add Network Devices**

Drag and drop the following devices onto the workspace:

1 x Switch

4 x PC (PC-0 to PC-4)

**Step 3: Connect the Devices**

Use Copper Straight-Through Cables to connect:

PC-0 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/1**)

PC-1 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/2**)

PC-2 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/3**)

PC-3 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/4**)

**Step 4: Assign IP Addresses to PCs**

**Click on PC-0** → Go to Desktop → Open IP Configuration:

**Click on PC-3**

**IP Address:** 128.12.1.3

**Subnet Mask:** 255.255.0.0

**Default Gateway**: 128.12.1.1

**Click on PC-4**

**IP Address:** 128.12.1.4

**Subnet Mask:** 255.255.0.0

**Default Gateway**: 128.12.1.1

**IP Address:** 128.12.1.2

**Subnet Mask:** 255.255.0.0

**Default Gateway**: 128.12.1.1

**Click on PC-1**

**IP Address:** 128.12.1.3

**Subnet Mask:** 255.255.0.0

**Default Gateway**: 128.12.1.1

Test it using this Command.

* Open one pc in network land one.
* **Click on PC-0** → Go to Desktop → Command Prompt.
* Write Ping 128.12.1.2

**Ring Topology.**

### **Required Equipment:**

1. **4 Switches**
2. **4 Computers (PC1 – PC4)**
3. **1 Backbone Cable (Coaxial or Ethernet Hub as a Bus) RJ45 Cables**.
4. **Testing connectivity using ping.**

**Step 1: Open Cisco Packet Tracer**

Launch Cisco Packet Tracer and create a new project.

**Step 2: Add Network Devices**

Drag and drop the following devices onto the workspace:

4 x Switch

4 x PC (PC-0 to PC-4)

**Step 3: Connect the Devices**

Use Copper Straight-Through Cables to connect:

PC-0 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/1**)

PC-1 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/1**)

PC-2 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/1**)

PC-3 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/1**)

**Step 4: Assign IP Addresses to PCs**

**Click on PC-0** → Go to Desktop → Open IP Configuration:

**Click on PC-3**

**IP Address:** 192.20.1.4

**Subnet Mask:** 255.255.255.0

**Default Gateway**: 192.20.1.1

**Click on PC-5**

**IP Address:** 192.20.1.5

**Subnet Mask:** 255.255.255.0

**Default Gateway**: 192.20.1.1

**IP Address:** 192.20.1.2

**Subnet Mask:** 255.255.255.0

**Default Gateway**: 192.20.1.1

**Click on PC-1**

**IP Address:** 192.20.1.3

**Subnet Mask:** 255.255.255.0

**Default Gateway**: 192.20.1.1

Test it using this Command.

* Open one pc in network land one.
* **Click on PC-0** → Go to Desktop → Command Prompt.
* Write Ping 192.20.1.5

**Mesh Topology.**

### **Required Equipment:**

1. **4 Switches**
2. **4 Computers (PC1 – PC4)**
3. **1 Backbone Cable (Coaxial or Ethernet Hub as a Bus) RJ45 Cables**.
4. **Testing connectivity using ping.**

**Step 1: Open Cisco Packet Tracer**

Launch Cisco Packet Tracer and create a new project.

**Step 2: Add Network Devices**

Drag and drop the following devices onto the workspace:

4 x Switch

4 x PC (PC-0 to PC-4)

**Step 3: Connect the Devices**

Use Copper Straight-Through Cables to connect:

PC-0 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/1**)

PC-1 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/1**)

PC-2 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/1**)

PC-3 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/1**)

**Step 4: Assign IP Addresses to PCs**

**Click on PC-0** → Go to Desktop → Open IP Configuration:

**Click on PC-2**

**IP Address:** 128.30.4.3

**Subnet Mask:** 255.255.0.0

**Click on PC-3**

**IP Address:** 128.30.4.4

**Subnet Mask:** 255.255.0.0

**IP Address:** 128.30.4.2

**Subnet Mask:** 255.255.0.0

**Click on PC-1**

**IP Address:** 128.30.4.3

**Subnet Mask:** 255.255.0.0

Test it using this Command.

* Open one pc in network land one.
* **Click on PC-0** → Go to Desktop → Command Prompt.
* Write Ping 128.30.4.4.

**Hybrid Topology.**

**Star Topology.**

### **Required Equipment:**

1. **1 Switches**
2. **4 Computers (PC1 – PC4)**
3. **1 Backbone Cable (Coaxial or Ethernet Hub as a Bus) RJ45 Cables**.
4. **Testing connectivity using ping.**

**Step 1: Open Cisco Packet Tracer**

Launch Cisco Packet Tracer and create a new project.

**Step 2: Add Network Devices**

Drag and drop the following devices onto the workspace:

1 x Switch

4 x PC (PC-0 to PC-4)

**Step 3: Connect the Devices**

Use Copper Straight-Through Cables to connect:

PC-0 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/1**)

PC-1 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/2**)

PC-2 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/3**)

PC-3 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/4**)

**Step 4: Assign IP Addresses to PCs**

**Click on PC-0** → Go to Desktop → Open IP Configuration:

**Click on PC-2**

**IP Address:** 192.50.1.10

**Subnet Mask:** 255.255.255.0

**Click on PC-3**

**IP Address:** 192.50.1.11

**Subnet Mask:** 255.255.255.0

**IP Address:** 192.50.1.9

**Subnet Mask:** 255.255.255.0

**Click on PC-1**

**IP Address:** 192.50.1.8

**Subnet Mask:** 255.255.255.0

Test it using this Command.

* Open one pc in network land one.
* **Click on PC-0** → Go to Desktop → Command Prompt.
* Write Ping 192.50.1.9.

**Bus Topology.**

### **Required Equipment:**

1. **3 Switches**
2. **5 Computers (PC1 – PC6)**
3. **1 Backbone Cable (Coaxial or Ethernet Hub as a Bus) RJ45 Cables**.
4. **Testing connectivity using ping.**

**Step 1: Open Cisco Packet Tracer**

Launch Cisco Packet Tracer and create a new project.

**Step 2: Add Network Devices**

Drag and drop the following devices onto the workspace:

3 x Switch

6 x PC (PC-0 to PC-5)

**Step 3: Connect the Devices**

Use Copper Straight-Through Cables to connect:

PC-0 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/1**)

PC-1 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/2**)

PC-2 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/1**)

PC-4 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/2**)

PC-5 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/1**)

PC-6 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/2**)

**Step 4: Assign IP Addresses to PCs**

**Click on PC-4** → Go to Desktop → Open IP Configuration:

**Click on PC-7**

**IP Address:** 192.50.1.5

**Subnet Mask:** 255.255.255.0

**Click on PC-8**

**IP Address:** 192.50.1.6

**Subnet Mask:** 255.255.255.0

**Click on PC-9**

**IP Address:** 192.50.1.7

**Subnet Mask:** 255.255.255.0

**IP Address:** 192.50.1.2

**Subnet Mask:** 255.255.255.0

**Click on PC-5**

**IP Address:** 192.50.1.3

**Subnet Mask:** 255.255.255.0

**Click on PC-6**

**IP Address:** 192.50.1.4

**Subnet Mask:** 255.255.255.0

Test it using this Command.

* Open one pc in network land one.
* **Click on PC-0** → Go to Desktop → Command Prompt.
* Write Ping 192.50.1.9.