

# Task-8

## b). Configure network topology and implement static routing using Packet Tracer Software. STATIC ROUTING:

To configure network topology and implement static routing in Cisco Packet Tracer, follow these steps:

### Step 1: Design the Network Topology

1. **Open Packet Tracer** and create a new project.
2. **Add Network Devices:**
  - Drag and drop routers, switches, and PCs onto the workspace.
  - For example, use **2 routers**, **2 switches**, and **4 PCs**.
3. **Interconnect the Devices:**
  - Use appropriate cables (copper straight-through for different devices, copper crossover for similar devices) to connect routers, switches, and PCs.
  - Make sure to connect the routers via serial connections interfaces.

### Step 2: Configure Routers

For each router, interface IP addresses, and enable the interfaces.

#### Configure Router0 and Router1

- Enter the CLI of **Router0** and **Router1**
- Configure interface IP addresses:

#### Router configuration:

##### Router0

##### Interfaces:

Fa0/0	10.0.0.3	255.0.0.0
Serial2/0	20.0.0.1	255.0.0.0

##### Router1

##### Interfaces:

Fa0/0	30.0.0.2	255.0.0.0
Serial3/0	20.0.0.2	255.0.0.0

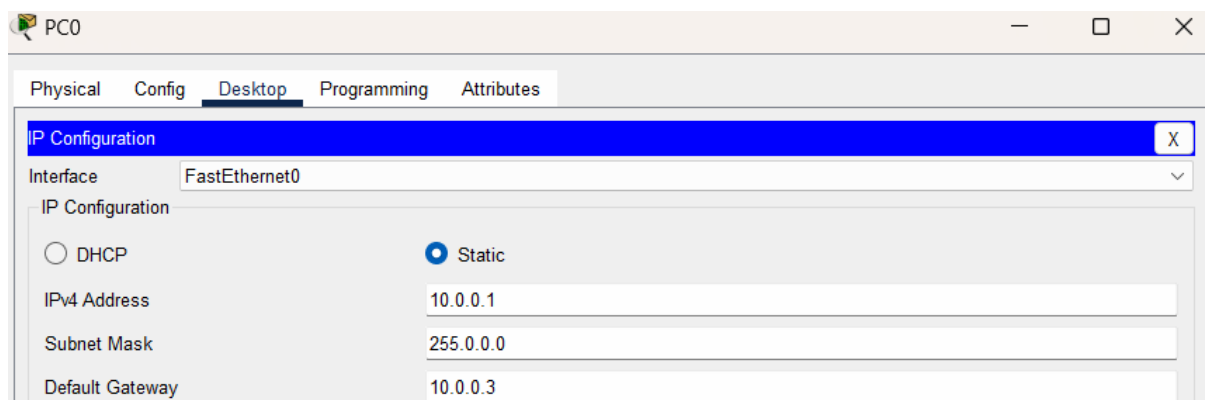
Router 0	Router 1
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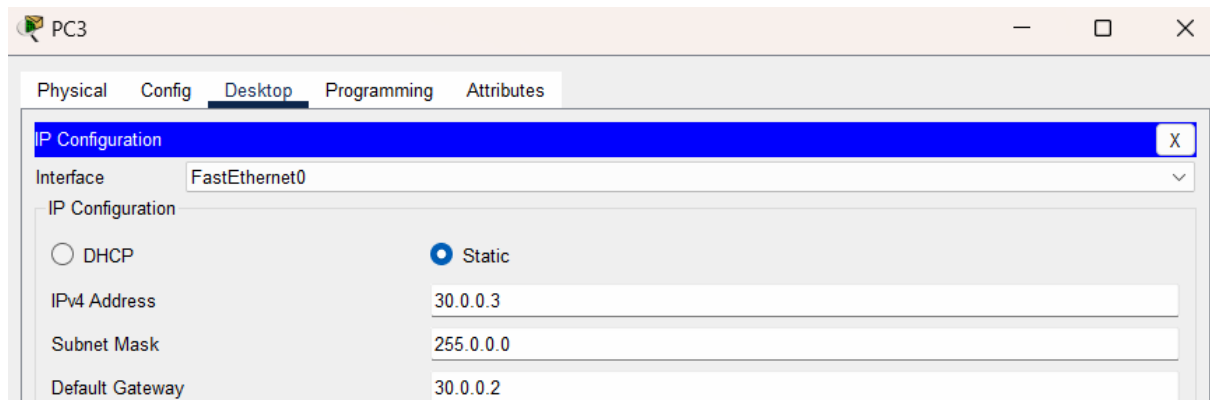
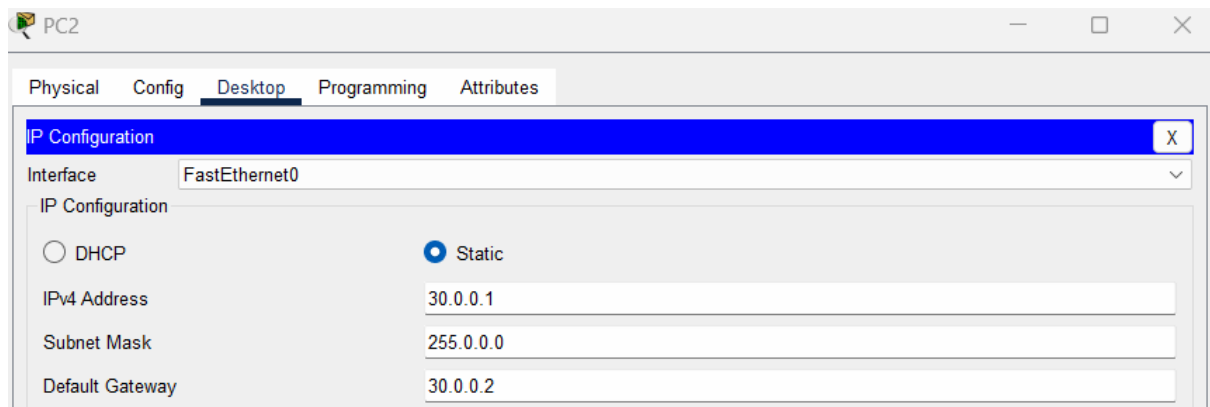
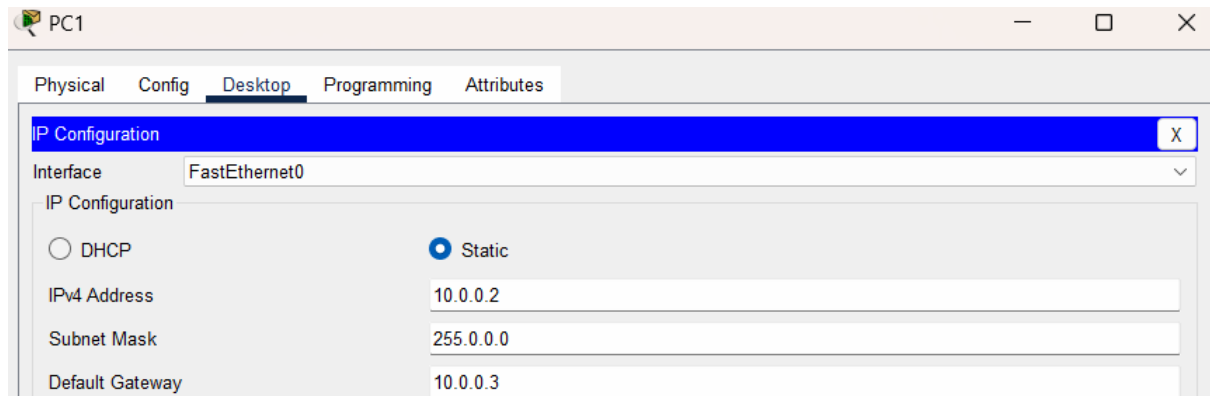
<pre> Router&gt;en Router# Router#conf t Router(config)# Router(config)#int Fa0/0 Router(config-if)#ip address 10.0.0.3 255.0.0.0 Router(config-if)#no shut  Router(config-if)#int Se2/0 Router(config-if)#ip address 20.0.0.1 255.0.0.0 Router(config-if)#no shut  Router(config-if)#exit Router(config)# <b>Router(config)#ip route 30.0.0.0 255.0.0.0 20.0.0.2</b> </pre>	<pre> Router# Router#conf t Router(config)# Router(config)#int Fa0/0 Router(config-if)#ip address 30.0.0.2 255.0.0.0 Router(config-if)#no shut  Router(config-if)#int Se3/0 Router(config-if)#ip add 20.0.0.2 255.0.0.0 Router(config-if)#no shut  Router(config-if)#exit Router(config)# <b>Router(config)#ip route 10.0.0.0 255.0.0.0 20.0.0.1</b> %Default route without gateway, if not a point-to-point interface, may impact performance Router(config)# </pre>
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### Step 3: Configure PCs

Assign static IP addresses to each PC.

- **PC0:** 10.0.0.1, **Subnet Mask:** 255.0.0.0, **Default Gateway:** 10.0.0.3
- **PC1:** 10.0.0.2, **Subnet Mask:** 255.0.0.0, **Default Gateway:** 10.0.0.3
- **PC2:** 30.0.0.1, **Subnet Mask:** 255.0.0.0, **Default Gateway:** 30.0.0.2
- **PC3:** 30.0.0.3, **Subnet Mask:** 255.0.0.0, **Default Gateway:** 30.0.0.2





#### Step 4: Test Connectivity

- **Ping** from one PC to another (e.g., from **PC0** to **PC3**) to ensure static routing is functioning properly.

```
PC0
Physical Config Desktop Programming Attributes
Command Prompt X
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 30.0.0.3

Pinging 30.0.0.3 with 32 bytes of data:

Request timed out.
Reply from 30.0.0.3: bytes=32 time=1ms TTL=126
Reply from 30.0.0.3: bytes=32 time=1ms TTL=126
Reply from 30.0.0.3: bytes=32 time=1ms TTL=126

Ping statistics for 30.0.0.3:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 1ms, Average = 1ms

C:\>ping 30.0.0.2

Pinging 30.0.0.2 with 32 bytes of data:

Reply from 30.0.0.2: bytes=32 time=21ms TTL=254
Reply from 30.0.0.2: bytes=32 time=1ms TTL=254
Reply from 30.0.0.2: bytes=32 time=1ms TTL=254
Reply from 30.0.0.2: bytes=32 time=1ms TTL=254

Ping statistics for 30.0.0.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 21ms, Average = 6ms

C:\>
```

