**Lab 2: Interface Configuration & IP Address Assignment**

**🎯 Objective**

* Configure IP addresses on router interfaces.
* Configure IP addresses on PCs.
* Test connectivity using ping.

**🧰 Devices Needed in Cisco Packet Tracer**

* **1 Router** (e.g., 2811 or 2901)
* **2 PCs**
* **2 Copper Straight-Through cables**

**🖥️ Step-by-Step Instructions**

**🧱 Step 1: Create the Topology**

1. Open Cisco Packet Tracer.
2. Drag and drop:
   * 1 **Router** (e.g., 2811)
   * 2 **PCs** (PC0 and PC1)
3. Connect:
   * **PC0 to Router’s FastEthernet0/0**
   * **PC1 to Router’s FastEthernet0/1**
   * Use **Copper Straight-Through** cables.

**📐 Step 2: IP Address Planning**

| **Device** | **Interface** | **IP Address** | **Subnet Mask** |
| --- | --- | --- | --- |
| Router | FastEthernet0/0 | 192.168.1.1 | 255.255.255.0 |
| Router | FastEthernet0/1 | 192.168.2.1 | 255.255.255.0 |
| PC0 | NIC | 192.168.1.10 | 255.255.255.0 |
| PC1 | NIC | 192.168.2.10 | 255.255.255.0 |

**⚙️ Step 3: Configure Router Interfaces**

1. Click the router → CLI tab.
2. Enter these commands:

plaintext

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Router> enable

Router# configure terminal

! Interface for PC0

Router(config)# interface fastethernet 0/0

Router(config-if)# ip address 192.168.1.1 255.255.255.0

Router(config-if)# no shutdown

Router(config-if)# exit

! Interface for PC1

Router(config)# interface fastethernet 0/1

Router(config-if)# ip address 192.168.2.1 255.255.255.0

Router(config-if)# no shutdown

Router(config-if)# exit

Router(config)# exit

Router# copy running-config startup-config

✅ Interfaces are now up and configured.

**💻 Step 4: Configure IP Addresses on PCs**

**📌 For PC0:**

1. Click **PC0** → Desktop → **IP Configuration**.
2. Enter:
   * IP Address: 192.168.1.10
   * Subnet Mask: 255.255.255.0
   * Default Gateway: 192.168.1.1

**📌 For PC1:**

1. Click **PC1** → Desktop → **IP Configuration**.
2. Enter:
   * IP Address: 192.168.2.10
   * Subnet Mask: 255.255.255.0
   * Default Gateway: 192.168.2.1

**🔎 Step 5: Verify Connectivity**

**🧪 Ping from PC0 to Router (default gateway):**

1. PC0 → Desktop → **Command Prompt**
2. Run:

bash

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ping 192.168.1.1

Should reply successfully ✅

**🧪 Ping from PC1 to Router (default gateway):**

bash

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ping 192.168.2.1

**🧪 Optional: Ping between PCs**

Try pinging 192.168.2.10 from PC0. It won’t work unless routing is configured. That’s for **future labs**.

**📘 Key Commands Used**

| **Command** | **Purpose** |
| --- | --- |
| interface fa0/0 | Enters interface mode |
| ip address [IP] [MASK] | Assigns IP |
| no shutdown | Enables interface |
| copy running-config startup-config | Saves config |

**🧠 Summary**

You learned how to:

* Connect PCs to a router.
* Assign IP addresses to router interfaces.
* Assign IP addresses and gateways to PCs.
* Verify IP connectivity using ping.

**Output**

Cisco Packet Tracer PC Command Line 1.0

C:\>ping 192.168.1.10

Pinging 192.168.1.10 with 32 bytes of data:

Reply from 192.168.1.10: bytes=32 time<1ms TTL=127

Reply from 192.168.1.10: bytes=32 time<1ms TTL=127

Reply from 192.168.1.10: bytes=32 time<1ms TTL=127

Reply from 192.168.1.10: bytes=32 time<1ms TTL=127

Ping statistics for 192.168.1.10:

Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),

Approximate round trip times in milli-seconds:

Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.2.10

Pinging 192.168.2.10 with 32 bytes of data:

Request timed out.

Reply from 192.168.2.10: bytes=32 time<1ms TTL=127

Reply from 192.168.2.10: bytes=32 time<1ms TTL=127

Reply from 192.168.2.10: bytes=32 time<1ms TTL=127

Ping statistics for 192.168.2.10:

Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),

Approximate round trip times in milli-seconds:

Minimum = 0ms, Maximum = 0ms, Average = 0ms