

Experiment No: 03

Experiment Name: Packet through Routers (Routers Configured with CLI)

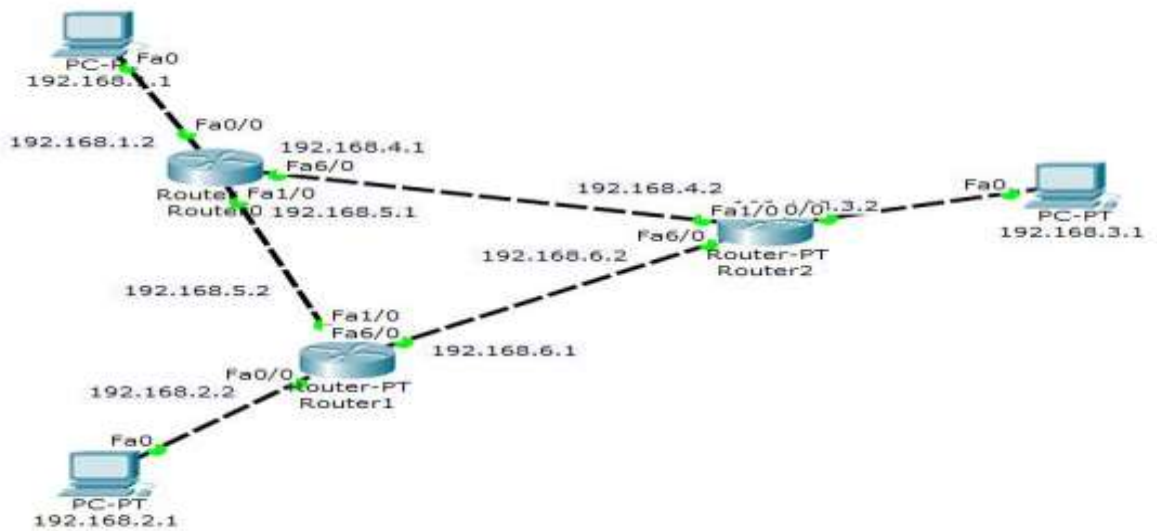
Objective:

Since we're going to transfer packet through Routers. we'll design a simple network diagram using "CISCO Packet Tracer".

In this experiment we'll test a simple packet transfer from one PC to another. The circuit contains 3 Routers with delta connection & some PCs. We'll configure the routers via command line interface and evaluate packet transfer (ICMP packet).

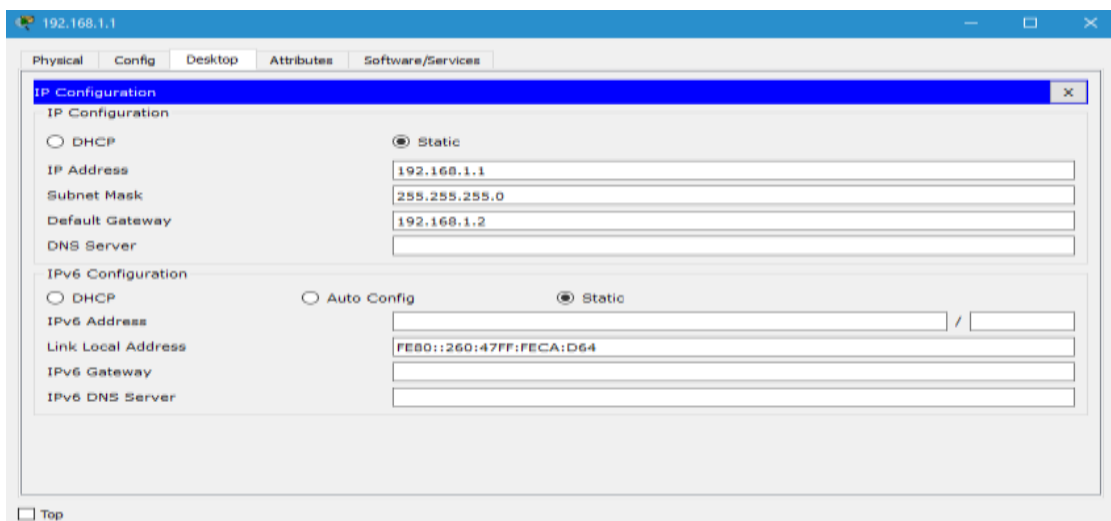
Design procedure:

- Here a simple network connection using Routers connected via a delta connection:



The above figure shows the connection among PCs & routers.

- ***Details procedure of router, End Device configuration:***
 - ***End Device IP address configure:***
 - ***Device1***



○ *Device 2*

192.168.2.1

Physical Config Desktop Attributes Software/Services

IP Configuration

IP Configuration

☐ DHCP ☒ Static

IP Address: 192.168.2.1

Subnet Mask: 255.255.255.0

Default Gateway: 192.168.2.2

DNS Server:

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address: /

Link Local Address: FE80::2D0:58FF:FEB5:4224

IPv6 Gateway:

IPv6 DNS Server:

☐ Top

○ *Device 3*

192.168.3.1

Physical Config Desktop Attributes Software/Services

IP Configuration

IP Configuration

☐ DHCP ☒ Static

IP Address: 192.168.3.1

Subnet Mask: 255.255.255.0

Default Gateway: 192.168.3.2

DNS Server:

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address: /

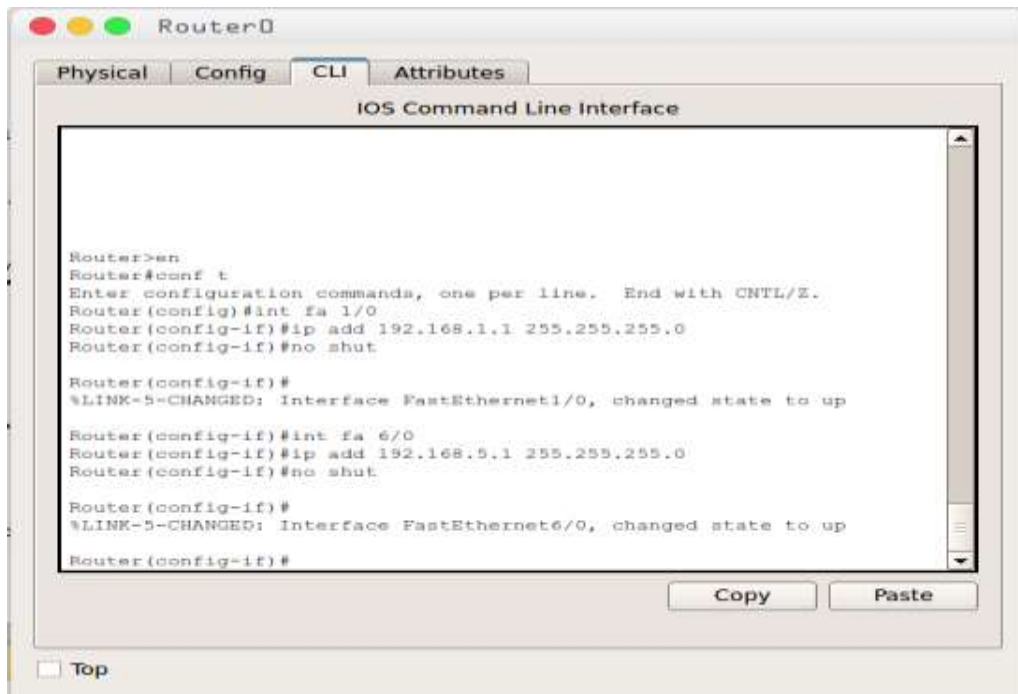
Link Local Address: FE80::202:16FF:FEBA:DA45

IPv6 Gateway:

IPv6 DNS Server:

☐ Top

- **Router configuration with CLI:** Each Router requires two step to be fully functional, first step we assign IP-addresses relative to each router. The second step we make the routing table ready. The router configuration for each router is as follows:
 - **Router:0**



The screenshot shows the CLI window for Router0. The window has tabs for Physical, Config, CLI, and Attributes. The CLI tab is active, showing the IOS Command Line Interface. The text in the window is as follows:

```
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int fa 1/0
Router(config-if)#ip add 192.168.1.1 255.255.255.0
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet1/0, changed state to up

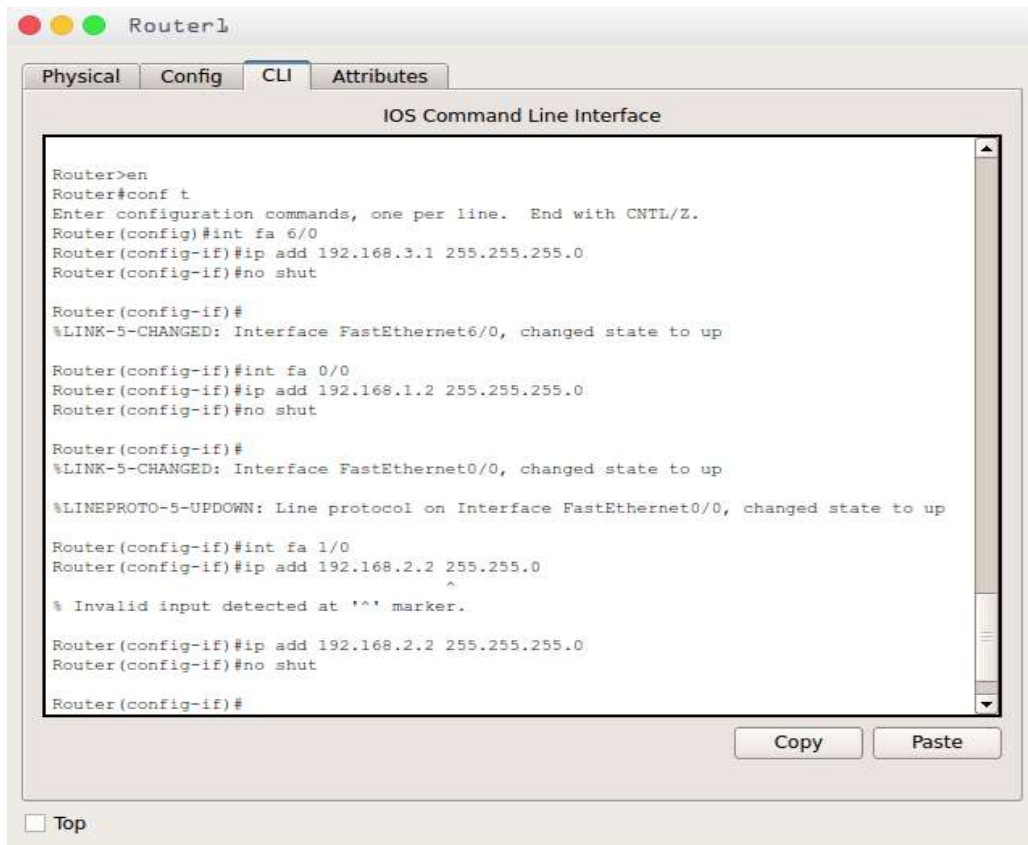
Router(config-if)#int fa 6/0
Router(config-if)#ip add 192.168.5.1 255.255.255.0
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet6/0, changed state to up

Router(config-if)#
```

At the bottom of the window, there are 'Copy' and 'Paste' buttons, and a 'Top' button with a checkbox.

- **Router:1**



The screenshot shows the CLI window for Router1. The window has tabs for Physical, Config, CLI, and Attributes. The CLI tab is active, showing the IOS Command Line Interface. The text in the window is as follows:

```
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int fa 6/0
Router(config-if)#ip add 192.168.3.1 255.255.255.0
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet6/0, changed state to up

Router(config-if)#int fa 0/0
Router(config-if)#ip add 192.168.1.2 255.255.255.0
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

Router(config-if)#int fa 1/0
Router(config-if)#ip add 192.168.2.2 255.255.0

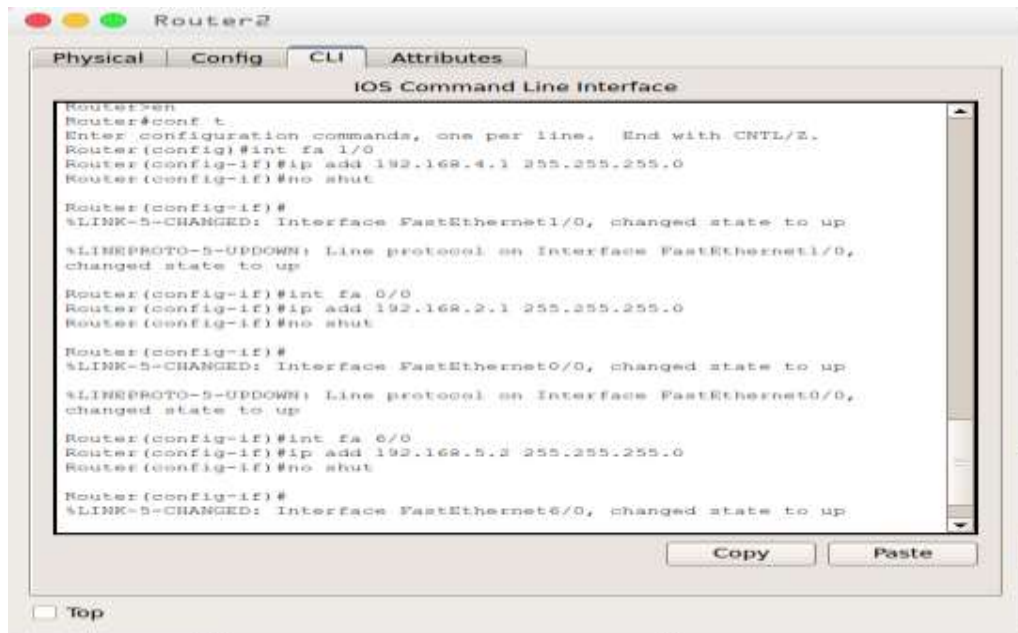
% Invalid input detected at '^' marker.

Router(config-if)#ip add 192.168.2.2 255.255.255.0
Router(config-if)#no shut

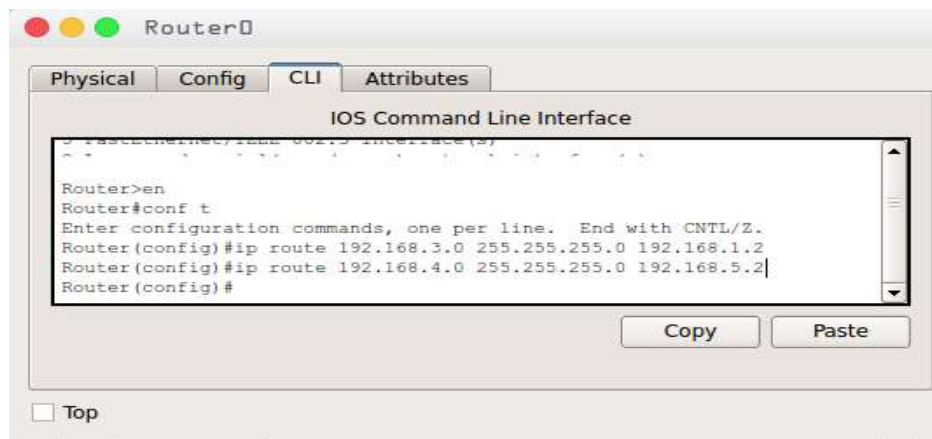
Router(config-if)#
```

At the bottom of the window, there are 'Copy' and 'Paste' buttons, and a 'Top' button with a checkbox.

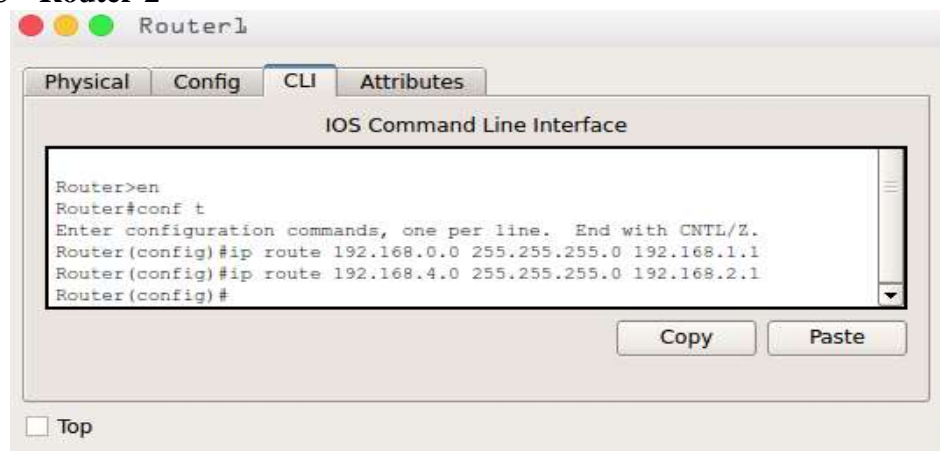
- **Router:2**



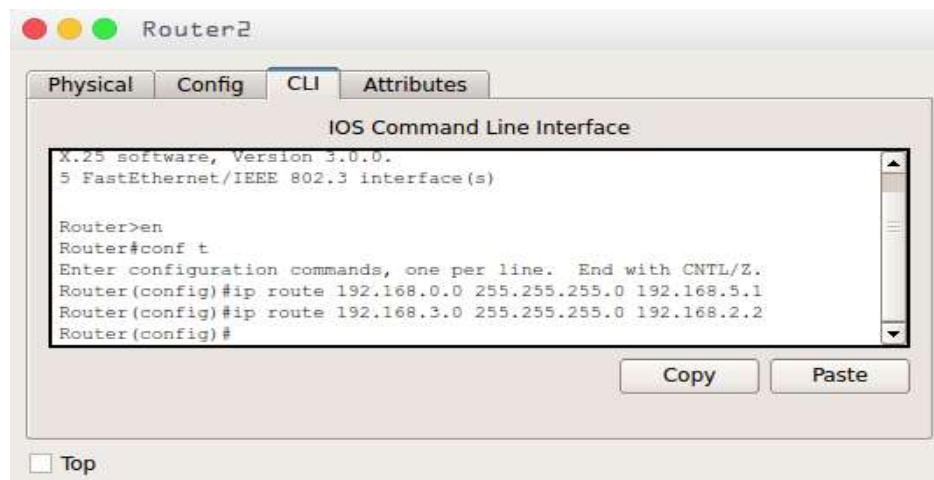
- **Routing Table:**
 - **Router-0**



- **Router-2**



- **Router-3**



- Packet transferring between two Device.

