

Laboratory No: 02

Title: Configuration and Implementation Two Router of CLI Mode

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Problem Statement:

To Learn the configuration and implementation of the two-router connected to the PC and communicate with each other using Cisco Packet Tracer simulation software.

Hypothesis:

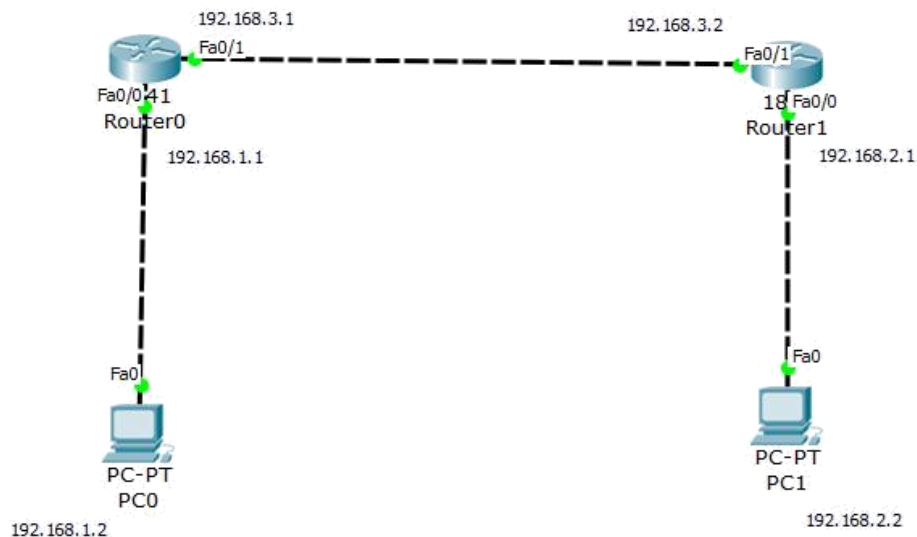
First, we need to connect the router to each PC, when it is connected then each router will be connected to the other router by IP routing. Then one PC will be able to exchange packet transmission between with another PC

Materials:

- Cisco Packet Tracer Software (version- 6.2)

Procedure:

- Design the connection using Cisco Packet Tracer Software like figure 1



- Connect Router(1841) with PCs
- PCs are connected in parallel to the router
 - PC0 with Router0
 - PC1 with Router1

Routing Connection CLI Command:



Enable Router Config :

```
Router>en
Router#
```

Configure Routing Terminal:

```
Router#config T
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#
```

Interface Mode:

```
Router(config)#int fa 0/0
Router(config-if)#
```



Ip Address and subnet mask set:

```
Router(config-if)#ip add 192.168.1.1 255.255.255.0
```



Port Status On:

```
Router(config-if)#no shut
```

✓ Exit (Save connection and close the setup)

- Two router need to be configured through these commands
- Router Interface Configuration :

| Name | Interface Name | IP Address | Subnet Mask |
|---------|------------------|-------------|---------------|
| Router0 | FastEthernet 0/0 | 192.168.1.1 | 255.255.255.0 |
| | FastEthernet 0/1 | 192.168.3.1 | 255.255.255.0 |
| Router1 | FastEthernet 0/0 | 192.168.2.1 | 255.255.255.0 |
| | FastEthernet 0/1 | 192.168.3.2 | 255.255.255.0 |

- PC Configuration:

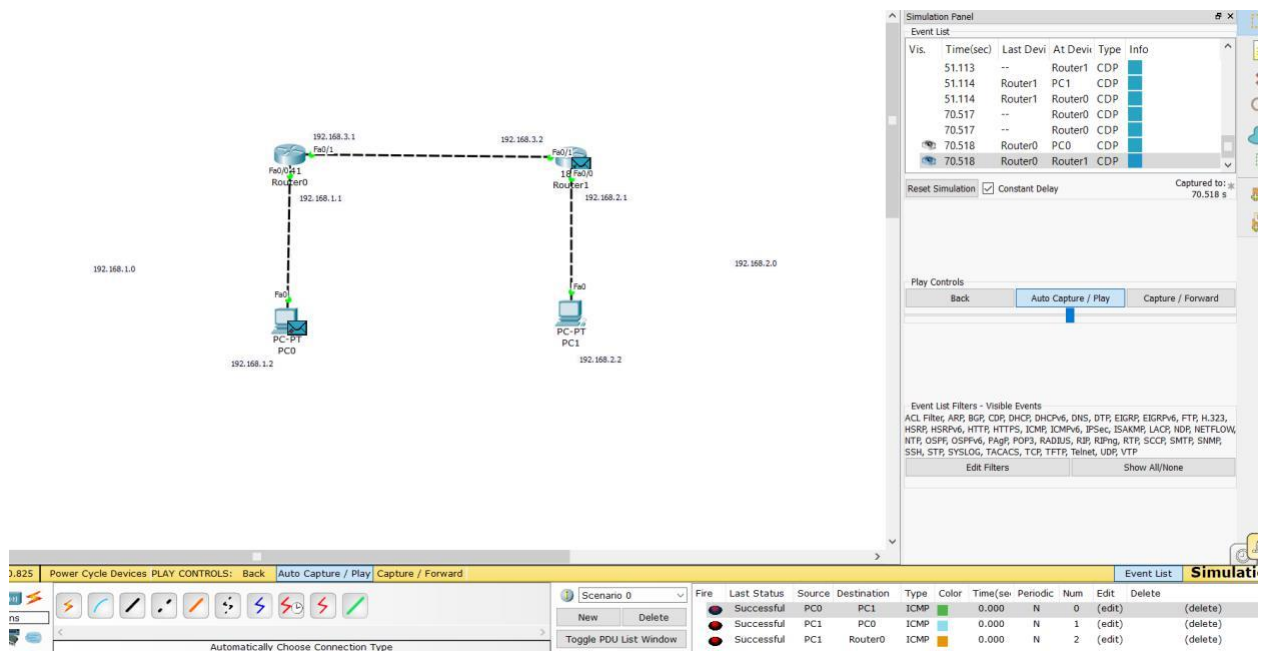
| Name | IP Address | Subnet Mask | Default Gateway |
|------|-------------|---------------|-----------------|
| PC0 | 192.168.1.2 | 255.255.255.0 | 192.168.1.1 |
| PC1 | 192.168.2.2 | 255.255.255.0 | 192.168.2.1 |

- IP routing is required to exchange packets from one router to another

```
Router(config)#ip route 192.168.1.0 255.255.255.0 192.168.3.1
```

- There first use via-connected [net-id] then using [subnet-mask] and last use [next hop IP] for which router will be connected.
- This IP must be done on Router0
- If all of the configuration has been completed correctly, the connections are green.
- Select the Message option and enter the sender and receiver information.
- If the connections are properly established and the networks are properly configured, we can send packets from one network to another.

Results (Data):



We simulate the network here by sending packets from PC0 to PC1. And Router0 sends the packet to Router1, then sends the packet to the user.

We have completed testing by transmitting data through following procedure:

| Fire | Last Status | Source | Destination | Type | Color | Time(se) | Periodic | Num | Edit | Delete |
|------|-------------|--------|-------------|------|-------|----------|----------|-----|--------|----------|
| | Successful | PC0 | PC1 | ICMP | | 0.000 | N | 0 | (edit) | (delete) |
| | Successful | PC1 | PC0 | ICMP | | 0.000 | N | 1 | (edit) | (delete) |
| | Successful | PC1 | Router0 | ICMP | | 0.000 | N | 2 | (edit) | (delete) |

- > Transmitting message from PC0 to PC1
- > Transmitting message from PC1 to PC0
- > Transmitting message from PC1 to Router0

Simulation Panel:

| Event List | | | | | |
|------------|-----------|-----------|----------|------|------|
| Vis. | Time(sec) | Last Devi | At Devic | Type | Info |
| | 0.002 | PC1 | Router1 | ICMP | |
| | 0.002 | Router0 | Router1 | ICMP | |
| | 0.002 | Router1 | Router0 | ICMP | |
| | 0.003 | Router1 | Router0 | ICMP | |
| | 0.003 | Router1 | PC1 | ICMP | |
| | 0.003 | Router0 | PC0 | ICMP | |
| | 0.004 | Router0 | Router1 | ICMP | |

Conclusions:

- After Successfully doing our simulation, so we conclude that our Hypothesis is accepted.
- The hypothesis was accepted because we connected the network between the Ethernet connections on Two routers and successfully transferred packets to each and every PC.
- it's transfer packets for all connected network simultaneously.
- The flow of this network was Ip routing, if it's not the proper way to configure then the communication between routers will be disconnected and the packet transmission has shown error messages