

Computer Networks: Lab Record

Week 2

Experiment 2: Routers – Introduction and Configuration

Configure IP address to routers in packet tracer to understand the working of routers in connecting devices of two different networks

9/10/24

LAB No-2

24

ROUTERS

Prac Explanation:

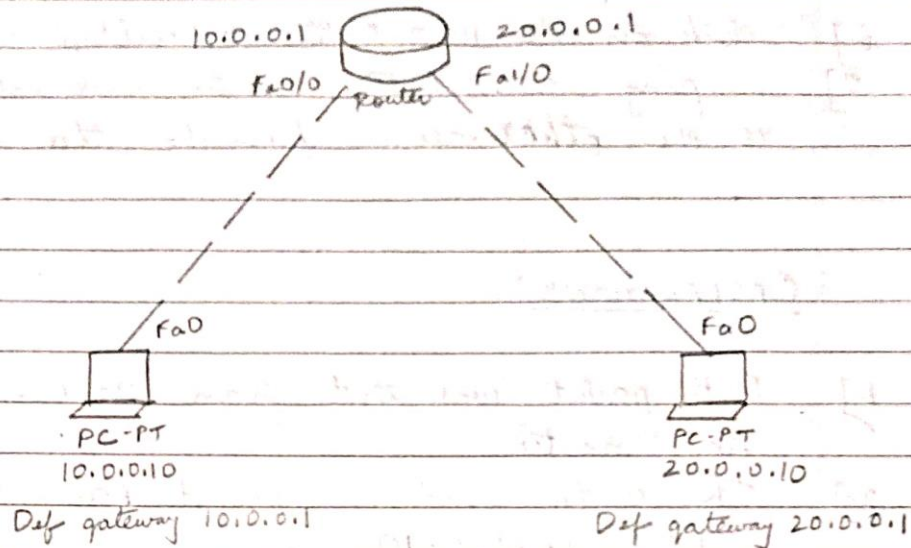
- Generic Router : 2 IP's
- Place PC's - Diffrent IP's network id
- Manual Router config :

Commands

- enable
- # config terminal
- config # interface
- interface fastethernet 0/0 ~ 0/1
- ip address 10.0.0.1 255.0.0.0
- no shutdown
- exit

Router : Connects two different networks

AIM : To configure IP address to routers in packet tracer. To demonstrate and understand the working of routers in connecting devices of two different networks

TOPOLOGY :PROCEDURE :

- 1.] Add two PC's and one generic router
- 2.] Configure end devices : 10.0.0.10 and 20.0.0.10 and mention ^{def} gateway 10.0.0.1 and 20.0.0.1 - and write below PC
- 3.] Connect the PC's to the router via copper cross over
- 4.] Click on Router → CLI → Manual configuration Commands:

Router > enable

Router # config terminal

Router (config) # interface fastethernet 0/0

Router (config-if) # ip address 10.0.0.1
255.0.0.0

Router (config-if) # no shutdown

Router (config-if) # exit

- Repeat for other PC : fastethernet 1/0

- 5.] After successful configuration, the connection turns green
- 6.] click on PC 10.0.0.10 → Desktop → Cmd prompt
- 7.] ping 20.0.0.10 → to send data packet to the ~~other~~ device from the other network

OBSERVATIONS:

- 1.] Data packet was sent from PC 10.0.0.10 to router
- 2.] The router sent the packet to PC 20.0.0.10
- 3.] Data packet back to Router → back to PC 10.0.0.10 and a tick mark is blinked

Ping command results were observed as:

Reply from 20.0.0.10: bytes=32 time=4ms
~~.....~~ TTL=127

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Ping statistics for 20.0.0.10:

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

Approx round trip time in milliseconds:

Minimum = 4ms, Maximum = 4ms, Average = 4ms

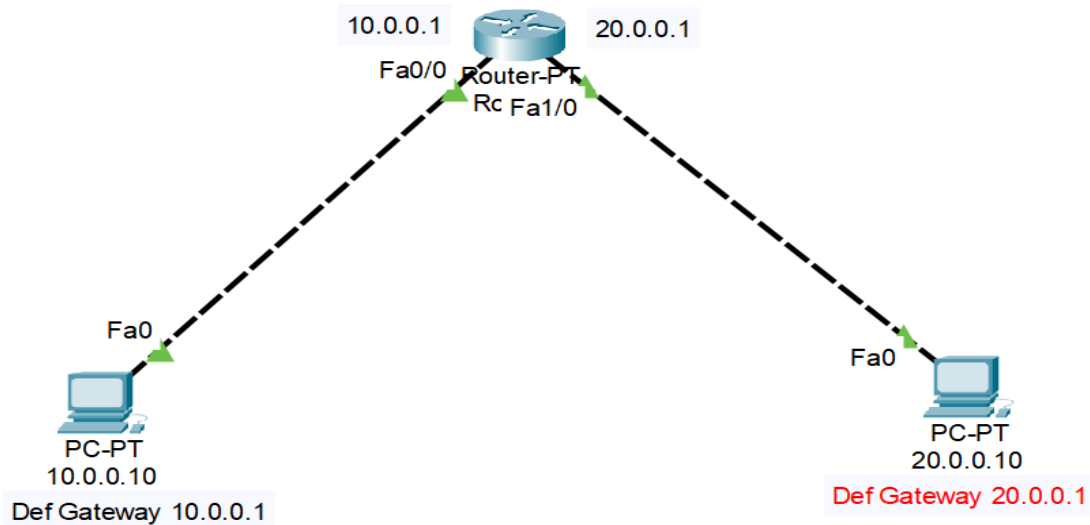
IP route was observed as:

Router # show ip route

C 10.0.0.0/8 is directly connected, FastEthernet0/0

C 20.0.0.0/8 is directly connected, FastEthernet1/0

Screenshots:



```
Router0
Physical Config CLI Attributes
IOS Command Line Interface
2 Low-speed serial(sync/async) network interface(s)
32K bytes of non-volatile configuration memory.
63488K bytes of ATA CompactFlash (Read/Write)

--- System Configuration Dialog ---

Would you like to enter the initial configuration dialog? [yes/no]: no

Press RETURN to get started!

Router>enable
Router#config terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface fastethernet0/0
Router(config-if)#ip address 10.0.0.1 255.0.0.0
Router(config-if)#no shutdown

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)#exit
Router(config)#interface fastethernet1/0
Router(config-if)#ip address 20.0.0.1 255.0.0.0
Router(config-if)#no shutdown

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

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/0, changed state to up

Router(config-if)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#
```

```
C:\>ping 20.0.0.10
```

```
Pinging 20.0.0.10 with 32 bytes of data:
```

```
Reply from 20.0.0.10: bytes=32 time<1ms TTL=127
```

```
Reply from 20.0.0.10: bytes=32 time<1ms TTL=127
```

```
Reply from 20.0.0.10: bytes=32 time<1ms TTL=127
```

```
Reply from 20.0.0.10: bytes=32 time<1ms TTL=127
```

```
Ping statistics for 20.0.0.10:
```

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

```
Approximate round trip times in milli-seconds:
```

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

```
C:\>
```

 20.0.0.10

Physical

Config

Desktop

Programming

Attributes

Command Prompt

```
Cisco Packet Tracer PC Command Line 1.0
```

```
C:\>ping 10.0.0.10
```

```
Pinging 10.0.0.10 with 32 bytes of data:
```

```
Reply from 10.0.0.10: bytes=32 time<1ms TTL=127
```

```
Reply from 10.0.0.10: bytes=32 time<1ms TTL=127
```

```
Reply from 10.0.0.10: bytes=32 time<1ms TTL=127
```

```
Reply from 10.0.0.10: bytes=32 time<1ms TTL=127
```

```
Ping statistics for 10.0.0.10:
```

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

```
Approximate round trip times in milli-seconds:
```

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