

Ex.no) 11a

Date : 8/6/24

AIM:

- a) simulate static Routing configuration using CISCO packet tracer.

### 1) Adding static Routes

• Each router knows only the networks directly connected to it. If you need to reach a network not directly connected, you add a static route.

• For example, on Router 0, networks 10.0.0.0/8, 20.0.0.0/8 and 40.0.0.0/8 are directly connected, but 30.0.0.0/8 and 50.0.0.0/8 are not. So, you add routes for 30.0.0.0/8 and 50.0.0.0/8.

### 2) Creating Main and Backup routes:

• Administrative Distance (AD) decides the preference of routes; the lower the AD, higher the preference.

Example: To configure two routes to same dest-

ip route 30.0.0.0 255.0.0.0 20.0.0.2 10 (main with  
AD 10)

ip route 30.0.0.0 255.0.0.0 40.0.0.2 20 (backup route  
with AD 20)

### 3) Router configuration

• configure static routes on each router for networks not directly.

• Example configurations

• Router 0 Adds routes for 30.0.0.0/8 and 50.0.0.0/8

• Router 1: sets up routes for 10.0.0.0/8 and 40.0.0.0/8 using router 0

### 4) Verifying routers

• Verify routes by using commands :

~~Show ip route static~~

• To this command shows the static routes

which case the backup route will show.

### 5) Testing route failures:

To see if the router switches to a backup route if the main route fails

1) Test connectivity

2) Disconnect or 'break' the link on the main route

3) Re-run the tests to confirm that the router now uses the backup route.

### 6) Deleting a static route:

To remove a static route:

1) View the existing routes with:

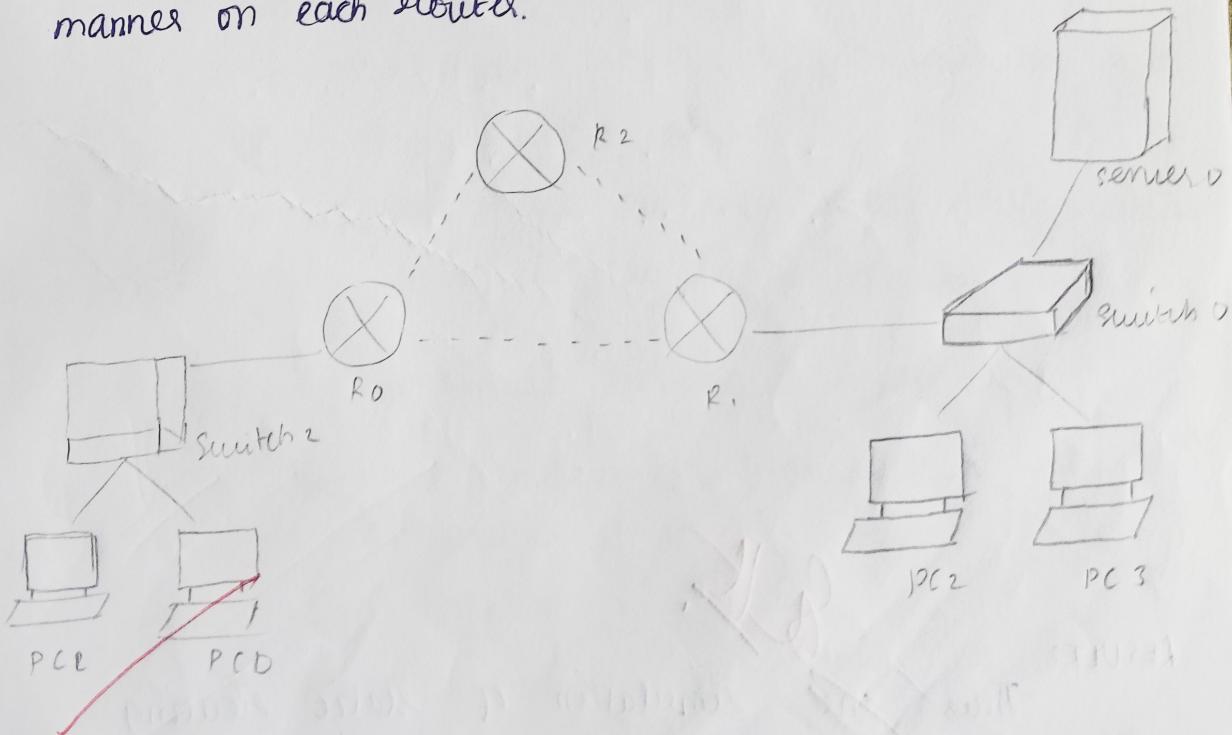
show ip route static

2) Use the no ip route command with the specific route details to delete it.

Example of deleting a route:

no ip route 30.0.0.100 255.255.255.255 40.0.0.2

Following these steps, you can add, prioritize, verify, test and delete static routes in straightforward manner on each router.



Ex: 11b  
Date: 9/10/24

AIM:  
b) simulate

step by step

1) initial

Device 1: R1

PCO Fast

RouterID 0

Router 0

Router 0

Router 1

Router 1: R2

PCI

2) Assign

con

assign

mode

3) Enable

each

Exa

RESULT:

*S.K.*  
Thus the simulation of static routing configuration using cisco packet tracer is done successfully

Ex: 11b

Date: 9/10/24

## RIP using CISCO packet tracer.

AIM:

b) simulate RIP using CISCO packet tracer.

step by step RIP configuration guide

1) initial IP configuration for devices

Device	Interface	IP Address	connected to
PC0	Fast Ethernet	10.0.0.2/8	Router 0's Fa0/1
Router0	Fa0/1	10.0.0.1/8	PC0's Fast Ethernet

Router0	S0/0/0	192.168.1.249/30	Router1's S0/0/0
---------	--------	------------------	------------------

Router0	S0/0/1	192.168.1.254/30	Router2's S0/0/0
---------	--------	------------------	------------------

Router1	S0/0/0	192.168.1.246/30	Router0's S0/0/0
---------	--------	------------------	------------------

Router1	S0/0/0	192.168.1.245/30	Router1's S0/0/1
---------	--------	------------------	------------------

PC1	Fast Ethernet	20.0.0.2/8	Router2's Fa0/1
-----	---------------	------------	-----------------

2) Assign IP Addresses to devices

configure each device's IP through packet tracer

- For PC's : Access the PC's IP configuration and assign the IPs as listed above

- for Routers: Access CLI, enter global configuration mode, and assign IPs to each interface.

3) Enable and configure Interfaces on routers

- use the following commands to set up each router interface

Example for Router 0:

Router > enable

Router # configure terminal

Router (config)# interface fast Ethernet 0/1

```

Router (config-if)# ip address 10.0.0.1 255.0.0.0
Router (config-if)# no shutdown
Router (config-if)# exit
Router (config-if)# interface serial 0/0/0
Router (config-if)# clock rate 64000
Router (config-if)# bandwidth 64
Router (config-if)# no shutdown

```

4) Configuring RIP on routers:

- RIP setup involves enabling RIP
- Adding directly connected networks to the RIP

configuration for Router 0:

```

router(config)# router rip

```

```

router(config-router)# network 10.0.0.0

```

```

router(config-router)# network 192.168.1.252

```

```

router(config-router)# network 192.168.1.252

```

repeat like this for Router 1 & 2.

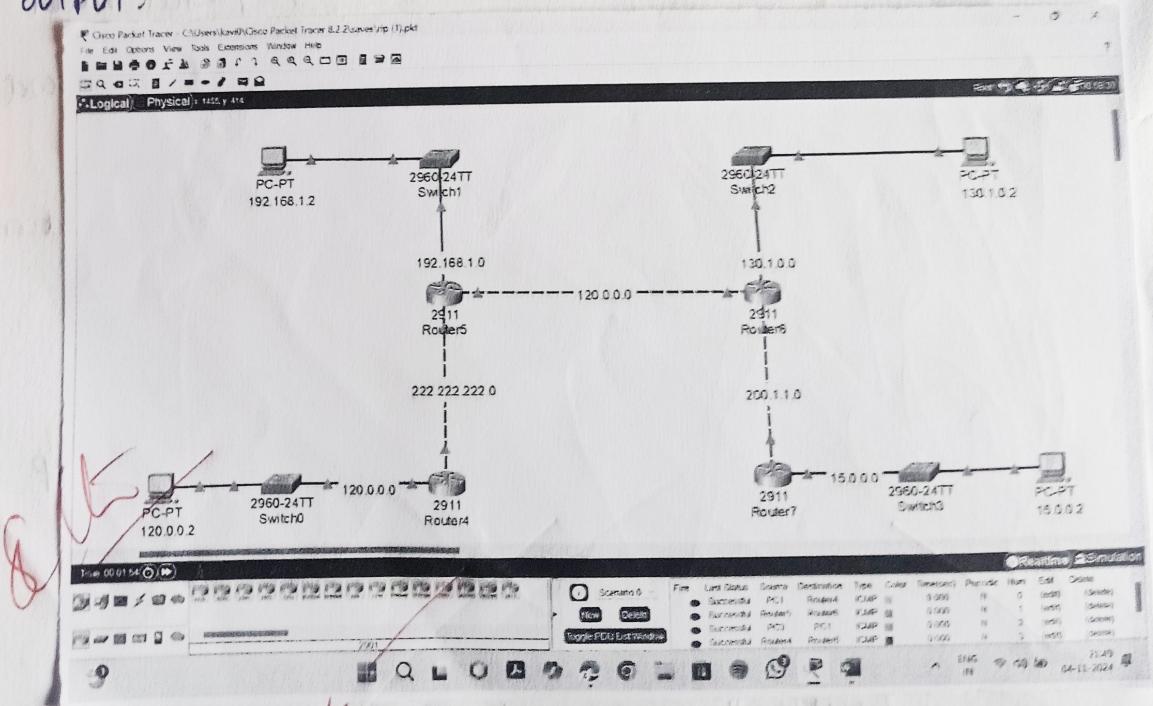
5) Verification:

- Use the ping command on PC1 to test connectivity to PCs
- Use the traceroute command to trace the path

6) Testing redundancy:

- Simulate a route failure by disconnecting the cable between Router0 and Router2 on their serial interfaces
- Use traceroute again to see RIP selecting new route

OUTPUT:



RESULT: Thus simulate RIP using Cisco packet tracer is executed successfully.