

Exp. No.: 11

Date: 10.25

Simulate Static Routing Configuration using CISCO Packet Tracer.

Aim:

To simulate static Routing configuration using Cisco packet tracer.

Procedure:

- 1) Set up the networks topology with three routers (Router 0, Router 1, Router 2) connected to their respective networks.

Router 0 connected to 10.0.0.0/8, 20.0.0.0/8,

Router 1 connected to 20.0.0.0/8, 30.0.0.0/8,
Router 2 connected to 40.0.0.0/8, 50.0.0.0/8

- 2) Access the CLI of Routers and configure static routers for networks not directly connected.

Add two static routes for 30.0.0.0/8
with the first via Router 1 (main) & second via Router 2 (backup) using different administrative distances.

Add two static host routes for 30.0.0.100/32, main via Router 2 & backup via Router 1.

Add two static routes for 50.0.0.0/8
main via Router 2 & backup via Router 1.

- 3) Access Router CLI & configure:

Two static routes for 10.0.0.0/8, main via Router 0, backup via Router 2.

Network configuration on Router 1

Available networks on local interfaces of Router 1

Router	Available networks on local Interfaces	Network available on other router interfaces
Router 1	10.0.0.0/8, 20.0.0.0/8, 30.0.0.0/8	40.0.0.0/8

Router 2	10.0.0.0/8, 20.0.0.0/8, 30.0.0.0/8	40.0.0.0/8, 50.0.0.0/8
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Router 3	10.0.0.0/8, 20.0.0.0/8, 30.0.0.0/8	40.0.0.0/8, 50.0.0.0/8
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Router 4	10.0.0.0/8, 20.0.0.0/8, 30.0.0.0/8	40.0.0.0/8, 50.0.0.0/8
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Network configuration on Router 2

Two static routes for 40.0.0.0/8, main via Router 1
back up via Router 2.

4) Access Router 2 CLI & configure static routes

* 10.0.0.0/8

* 30.0.0.0/8

5) Verify the routing table on each router using the command.

Show ip route static.

Ensure only main routers appear in the routing table initially.

6) Test connectivity from a PC in the 10.0.0.0/8 networks to hosts in the 30.0.0.0/8 & 50.0.0.0/8 networks using ping & traceroute commands

7) Simulate failure of main route by disabling the interface or deleting the static route to Router 1 on Router 0.

8) Verify that the backup router is now active in the routing table & test connectivity again.

9) Optionally, delete static route using
~~no ip route [destination-network]~~
[subnet-mask] [next-hop-address]

Observation:

* Static routes for unreachable networks were successfully added to each router.

* Only router with lowest administrative distance were shown in the routing table as main router.

- * Backup router automatically took over when the main router failed, ensuring network.
- * Host specific router were preferred over network router.
- * Ping & tracert tests confirmed data packets followed the expected paths.

+ Deleting static route removed them from the routing table & promoted backup router if configured.

~~2009.2.8.0/24~~ 8/1.0.0.0 110.0.7 110.0.0/8

2's network 0.0.0.0/24 0/0/02 1.9

2's network 0.0.0.0/24 0/0/02 1.9

2's network 0.0.0.0/24 0/0/02 network 1.9

2's network 0.0.0.0/24 0/0/02 1.9

2's network 0.0.0.0/24 0/0/02 1.9

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Result:

Static routers were configured successfully with main & backup paths. Backup router activated automatically upon main router failure ensure net connected.