

Lab 6: Implementing Static and Dynamic Routing Protocols

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Aim: Configure and compare static and dynamic routing protocols for network routing.

Objectives:

1. Setupstaticroutingbetweenmultiplenetworks.
2. Configureadynamicroutingprotocol(e.g.,OSPF)onrouters.
3. Compare static and dynamic routing performance.

Steps:

1. OpenCiscoPacketTracer:

- Createanewproject.

2. Add Devices:

- AddRouters: Drag multiple routers (e.g., 2911).
- AddPCs: Connect PCs to each router.

3. Configure Static Routing:

- AccesseachrouterCLIandconfigurestaticroutes:

Router1> enable

- Router1# configure terminal

- Router1(config)# ip route 192.168.2.0 255.255.255.0
10.0.0.2

- Router1(config)# exit

4. Configure Dynamic Routing (OSPF):

Access router CLI and configure OSPF:

```
Router1> enable
```

```
Router1# configure terminal
```

```
Router1(config)# router ospf 1
```

```
Router1(config-router)# network 10.0.0.0 0.0.0.255  
area 0
```

```
Router1(config-router)# exit
```

5. Test Routing:

- On PCs, use the ping and traceroute commands to test connectivity and routing paths.