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. Set up static routing between multiple networks.
2. Configure a dynamic routing protocol (e.g., OSPF) on routers.
3. Compare static and dynamic routing performance.

Steps:

1. **Open Cisco Packet Tracer:** ○   Create a new project.

2. **Add Devices:**
   - **Add Routers:** Drag multiple routers (e.g., 2911).
   - **Add PCs:** Connect PCs to each router.

3. **Configure Static Routing:**
   - Access each router CLI and configure static routes:

```
    Router1> enable
o Router1# configure terminal
o Router1(config)# ip route 192.168.2.0 255.255.255.0
    10.0.0.2
o 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.