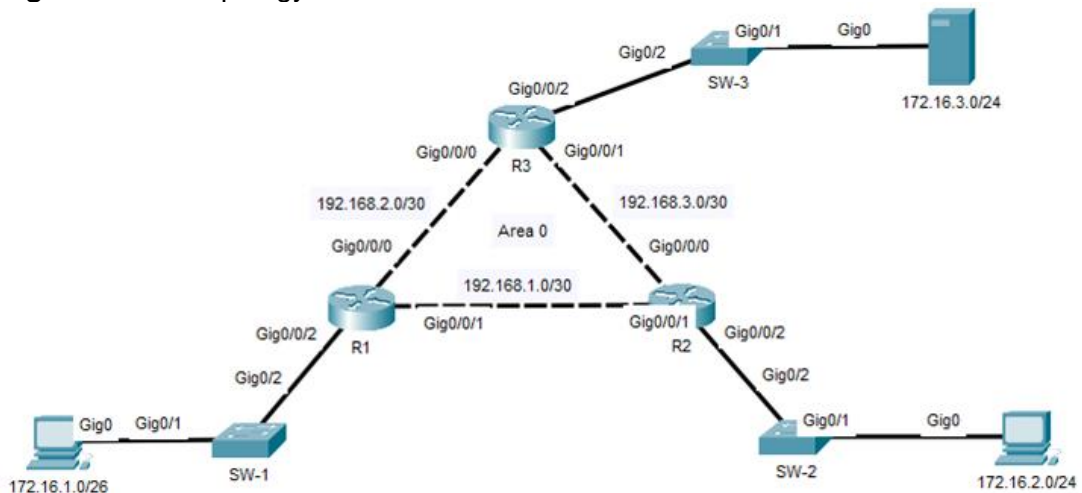


OSPF Passive Interface

Lab Summary

Configure passive interfaces on all loopback and LAN interfaces of routers.

Figure 1 Lab Topology



Lab Configuration

Start Packet Tracer File: **ospf passive interfaces.pkt**

Click on *R1* router and select *CLI* folder.

Step 1: Enter global configuration mode.

```
R1>enable
R1#configure terminal
```

Step 2: Configure OSPF passive interfaces on loopback0 and interface Gi0/0/2.

```
R1(config)#router ospf 1
R1(config-router)#passive-interface loopback0
R1(config-router)#passive-interface Gi0/0/2
R1(config-router)#end
R1#copy running-config startup-config
```

Click on *R2* router and select *CLI* folder.

Step 3: Enter global configuration mode.

```
R2>enable
R2#configure terminal
```

Step 4: Configure OSPF passive interfaces on loopback0 and interface Gi0/0/2.

```
R2(config)#router ospf 1  
R2(config-router)#passive-interface loopback0  
R2(config-router)#passive-interface Gi0/0/2  
R2(config-router)#end  
R2#copy running-config startup-config
```

Click on *R3* router and select *CLI* folder.

Step 5: Enter global configuration mode.

```
R3>enable  
R3#configure terminal
```

Step 6: Configure OSPF passive interfaces on loopback0 and interface Gi0/0/2.

```
R3(config)#router ospf 1  
R3(config-router)#passive-interface loopback0  
R3(config-router)#passive-interface Gi0/0/2  
R3(config-router)#end  
R3#copy running-config startup-config
```

Step 7: Verify Lab

R1#show ip ospf interface Gi0/0/2

GigabitEthernet0/0/2 is up, line protocol is up

Internet address is 172.16.1.60/26, Area 0

Process ID 1, Router ID 192.168.255.1, Network Type BROADCAST, Cost: 1

Transmit Delay is 1 sec, State DR, Priority 1

Designated Router (ID) 192.168.255.1, Interface address 172.16.1.60

No backup designated router on this network

Timer intervals configured, Hello 10, Dead 40, Wait 40, Retransmit 5

No Hellos (Passive interface)

R1#show ip protocols

Routing Protocol is "ospf 1"

Outgoing update filter list for all interfaces is not set

Incoming update filter list for all interfaces is not set

Router ID 192.168.255.1

Number of areas in this router is 1. 1 normal 0 stub 0 nssa

Maximum path: 4

Routing for Networks:

192.168.1.0 0.0.0.3 area 0

192.168.2.0 0.0.0.3 area 0

192.168.255.1 0.0.0.0 area 0

172.16.1.0 0.0.0.63 area 0

Passive Interface(s):

GigabitEthernet0/0/2

Loopback0

R2#show ip ospf interface Gi0/0/2

GigabitEthernet0/0/2 is up, line protocol is up

Internet address is 172.16.2.254/24, Area 0

Process ID 1, Router ID 192.168.255.2, Network Type BROADCAST, Cost: 1

Transmit Delay is 1 sec, State DR, Priority 1

Designated Router (ID) 192.168.255.2, Interface address 172.16.2.254

No backup designated router on this network

Timer intervals configured, Hello 10, Dead 40, Wait 40, Retransmit 5

No Hellos (Passive interface)

R2#show ip protocols

Routing Protocol is "ospf 1"

Outgoing update filter list for all interfaces is not set

Incoming update filter list for all interfaces is not set

Router ID 192.168.255.2

Number of areas in this router is 1. 1 normal 0 stub 0 nssa

Maximum path: 4

Routing for Networks:

192.168.1.0 0.0.0.3 area 0

192.168.3.0 0.0.0.3 area 0

172.16.2.0 0.0.0.255 area 0

192.168.255.2 0.0.0.0 area 0

Passive Interface(s):

GigabitEthernet0/0/2

Loopback0

R2#show ip route

<output omitted>

172.16.0.0/16 is variably subnetted, 4 subnets, 3 masks

- O **172.16.1.0/26** [110/2] via 192.168.1.1, 00:05:31, GigabitEthernet0/0/1
- O **172.16.3.0/24** [110/2] via 192.168.3.2, 00:05:41, GigabitEthernet0/0/0
- O **192.168.255.1/32** [110/2] via 192.168.1.1, 00:05:31, GigabitEthernet0/0/1
- O **192.168.255.3/32** [110/2] via 192.168.3.2, 00:05:41, GigabitEthernet0/0/0

R3#show ip ospf interface Gi0/0/2

GigabitEthernet0/0/2 is up, line protocol is up

Internet address is 172.16.3.254/24, Area 0

Process ID 1, Router ID 192.168.255.3, Network Type BROADCAST, Cost: 1

Transmit Delay is 1 sec, State DR, Priority 1

Designated Router (ID) 192.168.255.3, Interface address 172.16.3.254

No backup designated router on this network

Timer intervals configured, Hello 10, Dead 40, Wait 40, Retransmit 5

No Hellos (Passive interface)

R3#show ip protocols

Routing Protocol is "ospf 1"

Outgoing update filter list for all interfaces is not set

Incoming update filter list for all interfaces is not set

Router ID 192.168.255.3

Number of areas in this router is 1. 1 normal 0 stub 0 nssa

Maximum path: 4

Routing for Networks:

192.168.2.0 0.0.0.3 area 0

192.168.3.0 0.0.0.3 area 0

172.16.3.0 0.0.0.255 area 0

192.168.255.3 0.0.0.0 area 0

Passive Interface(s):

GigabitEthernet0/0/2

Loopback0

Lab Notes

The purpose of passive interface command is to prevent interface from sending OSPF hello packets to a neighbor. This lab configured the loopback interfaces and LAN interfaces as passive. The result is passive interfaces cannot establish OSPF adjacency with a neighbor and consequently advertise routes.

This is recommended for security purposes when a downstream neighbor is not enabled with OSPF. VLAN interfaces should also be configured as passive. The network address of a passive interface can still be advertised to the routing domain. This is shown with the routing table of R2 that has network address 172.16.1.0/26 of LAN interface Gi0/0/2 advertised from R1.