BASIC OSPF - Suppress Hello Packets

Because simplex interfaces between two devices on an Ethernet represent only one network segment, for OSPF you must configure the transmitting interface to be a passive interface. This prevents OSPF from sending hello packets for the transmitting interface. Both devices are able to see each other via the hello packet generated for the receiving interface.

Configuration

On point-to-point demand circuits, both endpoints must agree to suppress the sending of Hello Packets. To ensure this agreement, a router sets the DC-bit in OSPF Hellos and Database Description Packets sent out the demand interface. Receiving a Hello or a Database Description Packet with the DC-bit set indicates agreement. Receiving an Hello with the DC-bit clear and also listing the router's Router ID in the body of the Hello message, or a Database Description Packet with the DC-bit clear (either one indicating bidirectional connectivity) indicates that the other end refuses to suppress Hellos.

Suppress The Sending Of Hello Packets

```
NetStepByStep-R6(config-router)# passive-interface ?
  Async              Async interface
  BVI                Bridge-Group Virtual Interface
  CTunnel            CTunnel interface
  Dialer             Dialer interface
  Ethernet           IEEE 802.3
  Group-Async        Async Group interface
  Lex                Lex interface
  Loopback           Loopback interface
  MFR                Multilink Frame Relay bundle interface
  Multilink          Multilink-group interface
  Null               Null interface
  Port-channel       Ethernet Channel of interfaces
  Tunnel             Tunnel interface
  Vif                PGM Multicast Host interface
  Virtual-PPP        Virtual PPP interface
  Virtual-Template   Virtual Template interface
  Virtual-TokenRing  Virtual TokenRing
  default            Suppress routing updates on all interfaces
```

- Use to disable sending routing updates on an interface.

- This command is a router configuration command.
- To re-enable the sending of routing updates, use the **no** form of this command.
- If you disable the sending of routing updates on an interface, the particular subnet will continue to be advertised to other interfaces, and updates from other routers on that interface continue to be received and processed.
- For OSPF, OSPF routing information is neither sent nor received through the specified router interface. The specified interface address appears as a stub network in the OSPF domain.

```
NetStepByStep-R5(config-router)# passive-interface default
```

- Use to set all interfaces as passive by default.
- This command is a router configuration command.
- It is useful in Internet service provider and large enterprise networks where many of the distribution routers have more than 200 interfaces.

```
NetStepByStep-R5(config-router)# no passive-interface Ethernet 0/0
```

- Use to activate only those interfaces that need to have adjacencies set
- Ethernet 0/0 stands for the interface

```
NetStepByStep-R5(config-router)# no passive-interface Ethernet 0/1
```

- Use to activate only those interfaces that need to have adjacencies set
- Ethernet 0/1 stands for the interface.

Verification

```
show ip ospf interface e0/1
```

- Use to view the authentication type configured for an interface.
- **e** stands for Interface type. If the *interface-type* argument is included, only information for the specified interface type is included.
- **0** stand for interface number. Interface number. If the *interface-number* argument is included, only information for the specified interface number is included.

```
NetStepByStep-R5# sh ip ospf inter e0/1
Ethernet0/1 is up, line protocol is up
  Internet Address 56.56.56.5/24, Area 2
  Process ID 5, Router ID 5.5.5.5, Network Type BROADCAST, Cost: 10
  Transmit Delay is 1 sec, State DR, Priority 1
```

```
Designated Router (ID) 5.5.5.5, Interface address 56.56.56.5
No backup designated router on this network
Timer intervals configured, Hello 10, Dead 40, Wait 40, Retransmit 5
  oob-resync timeout 40
  No Hellos (Passive interface)
Supports Link-local Signaling (LLS)
Index 3/3, flood queue length 0
Next 0x0(0)/0x0(0)
Last flood scan length is 0, maximum is 0
Last flood scan time is 0 msec, maximum is 0 msec
Neighbor Count is 0, Adjacent neighbor count is 0
Suppress hello for 0 neighbor(s)
```

Troubleshoot

```
debug ip ospf hello
```

- Use to show the authentication process if OSPF authentication is configured.
- Issues log messages describing Hellos and Hello failures.

Video Cheat Sheet

R6

```
router ospf 6
passive-interface ethernet 0/3
```

R5

```
router ospf 5
passive-interface default

no passive-interface Ethernet 0/0
no passive-interface Ethernet 0/1
```