

How Does the Passive Interface Feature Work in EIGRP?

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Introduction

You can use the **passive-interface** command to control the advertisement of routing information. The command enables the suppression of routing updates over some interfaces while it allows updates to be exchanged normally over other interfaces.

With most routing protocols, the **passive-interface** command restricts outgoing advertisements only. However, when used with Enhanced Interior Gateway Routing Protocol (EIGRP), the effect is slightly different. This document demonstrates that use of the **passive-interface** command in EIGRP suppresses the exchange of hello packets between two routers, which results in the loss of their neighbor relationship. This stops not only routing updates from being advertised, but it also suppresses incoming routing updates. This document also discusses the configuration required in order to allow the suppression of outgoing routing updates, while it also allows incoming routing updates to be learned normally from the neighbor.

Prerequisites

Requirements

There are no specific requirements for this document.

Components Used

The information in this document is based on these software and hardware versions:

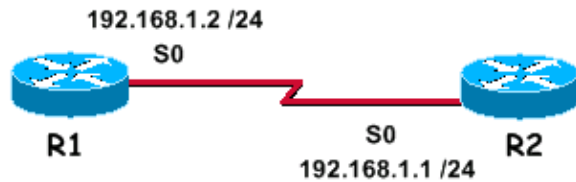
- Cisco IOS® Software Release 12.2(10b)
- Cisco 2600 series routers

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

Conventions

For more information on document conventions, refer to the Cisco Technical Tips Conventions.

The passive interface Command



With EIGRP running on a network, the **passive-interface** command stops both outgoing and incoming routing updates, since the effect of the command causes the router to stop sending and receiving hello packets over an interface.

Below is a sample **debug** output with the **passive-interface** command *not* configured for Serial0:

```
R1# debug eigrp packet hello
EIGRP Packets debugging is on
(HELLO)
R1#
Nov 20 08:07:33.131: EIGRP: Sending HELLO on Serial0
Nov 20 08:07:33.135: AS 1, Flags 0x0, Seq 0/0 idbQ 0/0 iidbQ un/rely 0/0
Nov 20 08:07:35.327: EIGRP: Received HELLO on Serial0 nbr 192.168.1.1
Nov 20 08:07:35.331: AS 1, Flags 0x0, Seq 0/0 idbQ 0/0 iidbQ un/rely 0/0 peerQ un/rely 0
```

You can see that hello packets are being exchanged in both directions. The output of the **show ip eigrp neighbor** is shown below.

```
R1# show ip eigrp neighbor
IP-EIGRP neighbors for process 1
H Address Interface Hold Uptime SRTT RTO Q Seq Type
(sec) (ms) Cnt Num
0 192.168.1.1 Se0 13 00:24:47 1 3000 0 1
```

Note: The interface is both sending and receiving hellos, and the two routers are neighbors.

Below is a sample **debug** output after the **passive-interface** command has been configured for Serial0.

```
R1(config)# router eigrp 1
R1(config-router)# passive-interface serial 0

R1# debug eigrp packet hello
EIGRP Packets debugging is on
(HELLO)
```

Note: Since no output is displayed, EIGRP is not only suppressing outbound hellos, but ignores inbound ones as well. The two routers are not neighbors any more. The output of the **show ip eigrp neighbor** after entering the **passive-interface** command is as shown below.

```
R1# show ip eigrp neighbor
IP-EIGRP neighbors for process 1
```

When the **passive-interface** command is used in EIGRP, the router cannot form neighbor adjacencies on the interface, or send or receive routing updates. However, if you want the outgoing routing updates alone be suppressed but the inbound updates continue to be received (and the routers still continue to be neighbors), then use the **distribute-list** command as follows:

```
R1(config)# access-list 20 deny any
```

```
R1(config)# router eigrp 1
R1(config-router)# no passive-interface serial 0
R1(config-router)# distribute-list 20 out serial 0
```

The output of the **show ip eigrp neighbor** commands after using the **distribute-list** command, is as shown below.

```
R1# show ip eigrp neighbor
IP-EIGRP neighbors for process 1
H   Address                Interface    Hold Uptime    SRTT   RTO   Q   Seq Type
   (sec)                    (ms)                Cnt Num
0   192.168.1.1             Se0         14 00:01:31    1   3000  0   3R1#
```

You can see that the routers are now neighbors. This example allows a neighbor adjacency to form between R1 and its neighbor on serial 0. R1 continues receiving routing updates from its neighbor, but the **distribute-list** prevents routes from being advertised out of serial 0.

Related Information

- [EIGRP Support Page](#)
- [Technical Support – Cisco Systems](#)

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