防止重复的 EIGRP 路由器 ID

目录

简介

重复的增强的内部网关路由选择协议(EIGRP)路由器ID能引起问题由于EIGRP外部路由的再分配。本文解释问题并且提供正确的配置防止它。

EIGRP路由器ID通常选择与开放最短路径优先(OSPF)同样。最高的IP地址分配到回环接口选择作为路由器ID。如果没有配置的任何环回地址，最高的IP地址分配到其他接口选择作为路由器ID。

先决条件

要求

本文档没有任何特定的要求。

使用的组件

此配置开发并且测试了使用Cisco IOS软件版本12.2(10b)。

本文档中的信息都是基于特定实验室环境中的设备创建的。本文档中使用的所有设备最初均采用原始（默认）配置。如果您是在真实网络上操作，请确保您在使用任何命令前已经了解其潜在影响。

规则

有关文档规则的详细信息，请参阅 Cisco 技术提示规则。

问题

用被重新分配的路由遇到由于路由器在线状态有重复的EIGRP路由器ID的问题可以在此网络设置帮助下了解。

网络图

配置

Router4

```
interface Loopback0

 ip address 1.1.1.1 255.255.255.255

!

interface Loopback1

 ip address 10.10.10.10 255.255.255.0

!

interface Ethernet0

 ip address 172.16.3.4 255.255.255.0

!

router rip

 version 2

 network 10.0.0.0

 network 172.16.0.0
```

路由器 3

```
interface Loopback0

 ip address 2.2.2.2 255.255.255.255

!

interface Ethernet0

 ip address 172.16.3.3 255.255.255.0

 ip pim sparse-dense-mode

!

interface Serial1

 ip address 172.16.13.3 255.255.255.0

 clockrate 4000000

!

router eigrp 7

 redistribute rip metric 1 1 1 1 1
```

```
 network 172.16.0.0

!

router rip

 version 2

 network 172.16.0.0
```

路由器 1

```
interface Loopback0

 ip address 2.2.2.2 255.255.255.0

!

interface Serial1

 ip address 172.16.13.1 255.255.255.0

 no ip mroute-cache

!

router eigrp 7

 network 172.16.0.0

 auto-summary

 no eigrp log-neighbor-changes
```

显示命令

如以前显示， Router3再分布路由信息协议(RIP)路由到EIGRP。这是3路由表和EIGRP拓扑表。

```
Router-3#show ip route Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area N1 - OSPF NSSA external type 1,
N2 - OSPF NSSA external type 2 E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP i -
IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area * - candidate default, U -
per-user static route, o - ODR P - periodic downloaded static route Gateway of last resort is
not set 2.0.0.0/32 is subnetted, 1 subnets C 2.2.2.2 is directly connected, Loopback0 R
10.0.0.0/8 [120/1] via 172.16.3.4, 00:00:25, Ethernet0 !--- Router 3 sees network 10.0.0.0.
172.16.0.0/24 is subnetted, 3 2 subnets C 172.16.13.0 is directly connected, Serial1 C
172.16.3.0 is directly connected, Ethernet0 router-3# router-3#show ip eigrp topology 10.0.0.0
255.0.0.0 IP-EIGRP (AS 7): topology entry for 10.0.0.0/8 State is Passive, Query origin flag is
1, 1 Successor(s), FD is 2560000256 Routing Descriptor Blocks: 0.0.0.0, from Redistributed, Send
flag is 0x0 Composite metric is (2560000256/0), Route is External Vector metric: Minimum
bandwidth is 1 Kbit Total delay is 10 microseconds Reliability is 1/255 Load is 1/255 Minimum
MTU is 1 Hop count is 0 External data: Originating router is 2.2.2.2 (this system) !--- Shows
that Router 3 is the originating router of the external route. AS number of route is 0 External
protocol is RIP, external metric is 1 Administrator tag is 0 (0x00000000) router-3#
```

从上一个输出，您能看到Router3了解关于网络10.0.0.0通过RIP。通过再分配，路由被输入了到EIGRP拓扑表作为外部路由。Router3也显示它是外部路由的始发路由器;其EIGRP路由器ID是2.2.2.2。

因为Router3似乎再分布外部路由，在路由器1路由表里预计发现它。这是路由表和EIGRP拓扑表的显示路由器的1。

```
router-1#show ip route Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
```

```
D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area N1 - OSPF NSSA external type 1,
N2 - OSPF NSSA external type 2 E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP i -
IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area * - candidate default, U -
per-user static route, o - ODR P - periodic downloaded static route Gateway of last resort is
not set 2.0.0.0/24 is subnetted, 1 subnets C 2.2.2.0 is directly connected, Loopback0
172.16.0.0/24 is subnetted, 3 2 subnets C 172.16.13.0 is directly connected, Serial1 D
172.16.3.0 [90/2195456] via 172.16.13.3, 00:31:59, Serial1 router-1# router-1# show ip eigrp
topology IP-EIGRP Topology Table for AS(7)/ID(2.2.2.2) Codes: P - Passive, A - Active, U -
Update, Q - Query, R - Reply, r - reply Status, s - sia Status P 172.16.13.0/24, 1 successors,
FD is 2169856 via Connected, Serial1 P 172.16.3.0/24, 1 successors, FD is 2195456 via
172.16.13.3 (2195456/281600), Serial1 router-1#
```

从上一个输出您能看到预计路由10.0.0.0/8不在路由表或EIGRP拓扑表路由器里1。此的可能的原因是路由器1和3有同一个EIGRP路由器ID。在Cisco IOS软件版本12.0(2)及以上版本， Cisco记录在EIGRP事件日志的相同的路由器ID，您能用**show ip eigrp events命令**查看。这是此的输出路由器的1 ：

```
router-1 #show ip eigrp events Event information for AS 7: 1 18:06:15.863 Change queue emptied,
entries: 1 2 18:06:15.863 Ignored route, metric: 10.0.0.0 2560512256 3 18:06:15.863 Ignored
route, neighbor info: 172.16.13.3 Serial2 4 18:06:15.863 Ignored route, dup router: 2.2.2.2 !---
Output suppressed.
```

从上一个输出您能看到相同的路由器ID是原因路由器1不接受从Router3的路由。

解决方案

解决方案将更改在其中一的路由器ID路由器通过更改在回环接口的最高的IP地址。如果ause Cisco IOS软件版本12.1(6)或以后，您能也使用**eigrp router-id** *<router-id>* router子命令为了更改路由器ID。在本例中，我们更改在路由器1.的路由器ID。

```
router-1(config)#router eigrp 7 router-1(config-router)#eigrp router-id 3.3.3.3
```

注意： 问题**清楚ip eigrp <自治系统**命令，在您更改EIGRP路由器ID后。

外部路由在路由表里当前出现如显示此处。

```
router-1#show ip route Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area N1 - OSPF NSSA external type 1,
N2 - OSPF NSSA external type 2 E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP i -
IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, IA - IS-IS inter area * - candidate default, U -
per-user static route, o - ODR P - periodic downloaded static route Gateway of last resort is
not set 2.0.0.0/24 is subnetted, 1 subnets C 2.2.2.0 is directly connected, Loopback0
172.16.0.0/24 is subnetted, 2 subnets C 172.16.13.0 is directly connected, Serial1 D 172.16.3.0
[90/2195456] via 172.16.13.3, 00:00:00, Serial1 D EX 10.0.0.0/8 [170/2560512256] via
172.16.13.3, 00:00:00, Serial1 router-1#
```

相关信息

- IP可被路由的协议支持
- IP路由技术支持
- EIGRP技术支持
- RIP技术支持
- 路由器产品支持
- 技术支持和文档 - Cisco Systems