

# 防止重复的 EIGRP 路由器 ID

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## [Introduction](#)

复制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地址分配到环回接口选择作为路由器ID。如果没有被配置的任何环回地址，最高的IP地址分配到其他接口被选择作为路由器ID。

## [Prerequisites](#)

## [Requirements](#)

There are no specific requirements for this document.

## [Components Used](#)

此配置实施了并且测试了使用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。All of the devices used in this document started with a cleared (default) configuration.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。

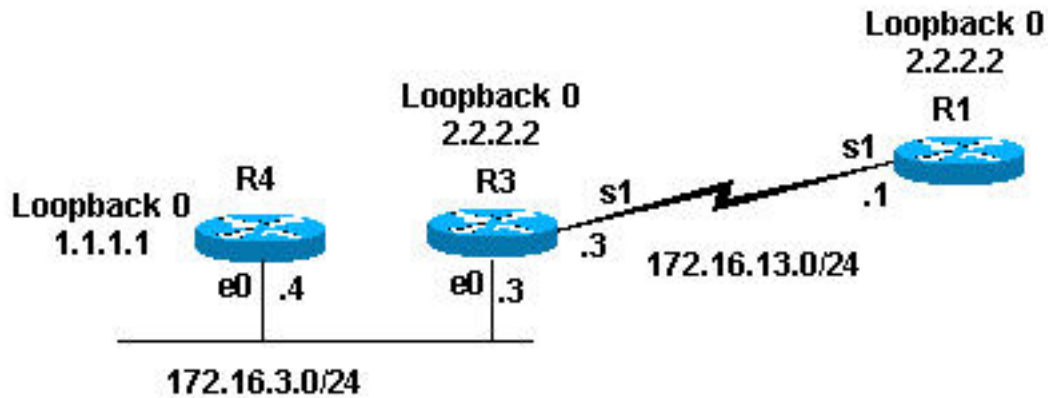
## [Conventions](#)

Refer to [Cisco Technical Tips Conventions](#) for more information on document conventions.

## 问题

用被重新分配的路由遇到由于路由器存在有复制EIGRP路由器ID的问题可以在此网络建立帮助下了解。

## Network Diagram



## 配置

### 路由器4

```
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，路由器3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#

从早先输出，您能看到路由器3了解关于网络10.0.0.0通过RIP。通过再分配，路由被输入了EIGRP拓扑表作为外部路由。路由器3也表示，它是外部路由的始发路由器;其EIGRP路由器ID是2.2.2.2。

因为路由器3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#

从早先输出您能看到期待的路由10.0.0.0/8不在路由表或EIGRP拓扑路由器表1。此的可能的原因是路由器1和3有同样EIGRP路由器ID。在Cisco IOS Software Release 12.0(2)和以后，Cisco记录在EIGRP事件日志的复制路由器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.*

从早先输出您能看到复制路由器ID是原因路由器1不接受从路由器3.的路由。

## [解决方案](#)

解决方案将更改在其中一的路由器ID路由器通过更改在环回接口的最高的IP地址。如果ause Cisco IOS软件版本12.1(6)或以上，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，我们更改了在路由器1.的路由器ID。

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

**Note:** 问题清楚的ip eigrp <自控系统命令，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这里。

```
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#
```

## [Related Information](#)

- [IP可被路由的协议技术支持](#)
- [IP 路由技术支持](#)
- [EIGRP技术支持](#)
- [RIP技术支持](#)
- [路由器产品支持](#)
- [Technical Support & Documentation - Cisco Systems](#)