

在 EIGRPv6 中再分布 IPv6 BGP 默认路由的配置示例

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简介

本文提供关于如何在 EIGRPv6 和 IPv6 BGP 之间使用双向再分配，将边界网关协议 (IPv6 BGP) 默认路由再分配至高级内部网关路由协议 (EIGRPv6) 的配置示例。

先决条件

尝试进行此配置之前，请确保满足以下要求：

- 具有 EIGRPv6 的基础知识
- 具有 IPv6 BGP 的基础知识
- 具有 IPv6 寻址的基础知识

硬件与软件版本

本文中的配置基于装有 Cisco IOS® 软件版本 15.0(1) 的 Cisco 7200 系列路由器。

规则

有关文档规则的详细信息，请参阅 [Cisco 技术提示规则](#)。

配置

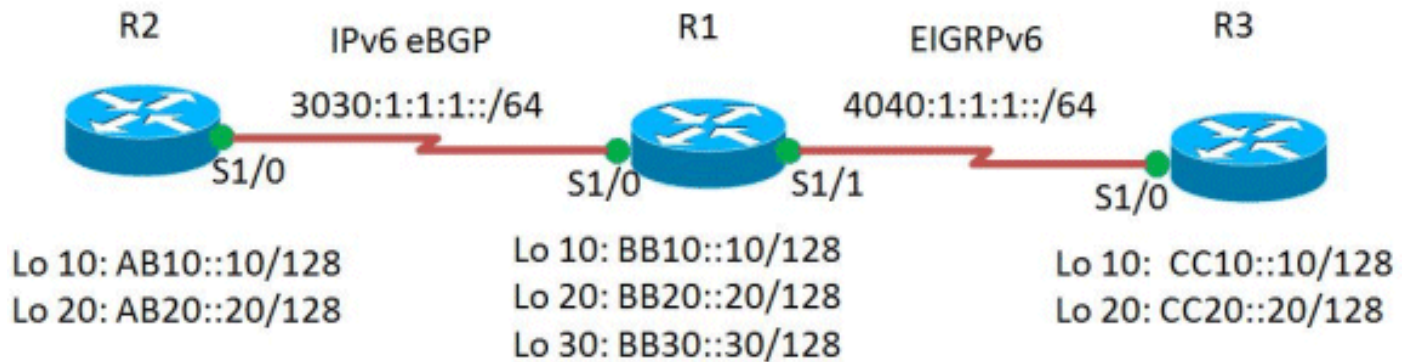
在本例中，路由器 R2 和 R1 使用 IPv6 eBGP 彼此通信。路由器 R1 和 R3 使用 EIGRPv6。默认路由在路由器 R2 中通过发出 neighbor default-originate 命令创建。为了将 IPv6 eBGP 路由双向分配到

EIGRPv6，请使用具有 EIGRP 指标的 **redistribute bgp** 命令。同样，要将EIGRPv6路由重分发到 IPv6BGP，请在地址系列配置模式下使用 **redistribute eigrp AS number** 命令。

注意：使用 [命令查找工具](#) (仅限注册客户) 可查找有关本文档中使用的命令的详细信息。

网络图

本文档使用以下网络设置：



配置

本文档使用以下配置：

- [路由器 R1](#)
- [路由器 R2](#)
- [路由器 R3](#)

路由器 R1

```
R1#show run
Building configuration...
!
version 15.0
!
hostname R1
!
ipv6 unicast-routing
ipv6 cef
!
!
interface Loopback10
 no ip address
 ipv6 address BB10::10/128
!
interface Loopback20
 no ip address
 ipv6 address BB20::20/128
!
interface Loopback30
 no ip address
 ipv6 address BB30::30/128
 ipv6 eigrp 1
!
interface Serial1/0
```

```

no ip address
ipv6 address 3030:1:1:1::11/64
serial restart-delay 0
!
interface Serial1/1
no ip address
ipv6 address 4040:1:1:1::10/64
ipv6 eigrp 1
serial restart-delay 0
!
!
router bgp 505
no synchronization
bgp router-id 1.1.1.1
bgp log-neighbor-changes
neighbor 3030:1:1:1::10 remote-as 500
no auto-summary
!
address-family ipv6
redistribute eigrp 1
!--- EIGRP is redistributed in to BGP. no
synchronization network BB10::10/128 network
BB20::20/128 neighbor 3030:1:1:1::10 activate exit-
address-family ! ipv6 router eigrp 1
eigrp router-id 1.1.1.1
redistribute bgp 505 metric 100 1 255 1 1500
!--- EIGRP for IPv6 has a shutdown feature. !--- Make
sure that the routing process is in "no shut" mode !---
in order to start running the protocol. !--- BGP is
redistributed with EIGRP default metrics. ! end

```

路由器 R2

```

R2#show run
Building configuration...
!
hostname R2
!
ipv6 unicast-routing
ipv6 cef
!
!
interface Loopback10
no ip address
ipv6 address AB10::10/128
!
interface Loopback20
no ip address
ipv6 address AB20::20/128
!
interface Serial1/0
no ip address
ipv6 address 3030:1:1:1::10/64
serial restart-delay 0
!
router bgp 500
no synchronization
bgp router-id 2.2.2.2
bgp log-neighbor-changes
neighbor 3030:1:1:1::11 remote-as 505
neighbor 3030:1:1:1::11 default-originate
no auto-summary

```

```
!  
address-family ipv6  
  no synchronization  
  network AB10::10/128  
  network AB20::20/128  
  neighbor 3030:1:1:1::11 activate  
  neighbor 3030:1:1:1::11 default-originate  
exit-address-family  
!  
end  
!--- Originates default route to the !--- neighbor  
3030:1:1:1::11.
```

路由器 R3

```
R3#show run  
!  
version 15.0  
!  
hostname R3  
!  
ipv6 unicast-routing  
ipv6 cef  
!  
interface Loopback10  
  no ip address  
  ipv6 address CC10::10/128  
  ipv6 eigrp 1  
!  
interface Loopback20  
  no ip address  
  ipv6 address CC20::20/128  
  ipv6 eigrp 1  
!  
interface Serial1/0  
  no ip address  
  ipv6 address 4040:1:1:1::11/64  
  ipv6 eigrp 1  
  serial restart-delay 0  
!  
!  
ipv6 router eigrp 1  
  eigrp router-id 3.3.3.3  
!  
end
```

验证

使用本部分可确认配置能否正常运行。

[命令输出解释程序 \(仅限注册用户 \) \(OIT\) 支持某些 show 命令。](#) 使用 OIT 可查看对 show 命令输出的分析。

显示命令

为了验证路由器 R3 接收再分配的 IPv6 BGP 默认路由，请在路由器 R3 中使用 [show ipv6 route eigrp 命令](#)。

show ipv6 route eigrp

在路由器 R3 中

```
R3#show ipv6 route eigrp
IPv6 Routing Table - default - 9 entries
Codes: C - Connected, L - Local, S - Static, U - Per-
user Static route
        B - BGP, HA - Home Agent, MR - Mobile Router, R -
RIP
        I1 - ISIS L1, I2 - ISIS L2, IA - ISIS interarea,
IS - ISIS summary
        D - EIGRP, EX - EIGRP external, ND - Neighbor
Discovery
        O - OSPF Intra, OI - OSPF Inter, OE1 - OSPF ext
1, OE2 - OSPF ext 2
        ON1 - OSPF NSSA ext 1, ON2 - OSPF NSSA ext 2
EX  ::/0 [170/26112256]
        via FE80::C806:16FF:FE08:0, Serial1/0
EX  AB10::10/128 [170/26112256]
        via FE80::C806:16FF:FE08:0, Serial1/0
EX  AB20::20/128 [170/26112256]
        via FE80::C806:16FF:FE08:0, Serial1/0
D    BB30::30/128 [90/2297856]
        via FE80::C806:16FF:FE08:0, Serial1/0
!--- The above output shows that the default route !---
is redistributed in EIGRP. EX indicates EIGRP external
routes.
```

为了验证 IPv6 BGP 默认路由在路由器 R2 中正确再分配，请在路由器 R2 中使用 [show ipv6 route bgp](#) 命令。

show ipv6 route bgp

在路由器 R2 中

```
R2#show ipv6 route bgp
IPv6 Routing Table - default - 9 entries
Codes: C - Connected, L - Local, S - Static, U - Per-
user Static route
        B - BGP, HA - Home Agent, MR - Mobile Router, R -
RIP
        I1 - ISIS L1, I2 - ISIS L2, IA - ISIS interarea,
IS - ISIS summary
        D - EIGRP, EX - EIGRP external, ND - Neighbor
Discovery
        O - OSPF Intra, OI - OSPF Inter, OE1 - OSPF ext
1, OE2 - OSPF ext 2
        ON1 - OSPF NSSA ext 1, ON2 - OSPF NSSA ext 2
B    BB10::10/128 [20/0]
        via FE80::C806:16FF:FE08:0, Serial1/0
B    BB20::20/128 [20/0]
        via FE80::C806:16FF:FE08:0, Serial1/0
B    CC10::10/128 [20/2297856]
        via FE80::C806:16FF:FE08:0, Serial1/0
B    CC20::20/128 [20/2297856]
        via FE80::C806:16FF:FE08:0, Serial1/0
!--- The above output shows that the eigrp routes !---
are redistributed in to BGP.
```

使用 ping 命令验证路由器 R2 和 R3 之间的可接通性。

ping

从路由器 R2 :

```
R2#ping CC10::10
```

```
Type escape sequence to abort.  
Sending 5, 100-byte ICMP Echos to CC10::10, timeout is 2  
seconds:  
!!!!!  
Success rate is 100 percent (5/5), round-trip  
min/avg/max = 4/40/96 ms
```

```
R2#ping CC20::20
```

```
Type escape sequence to abort.  
Sending 5, 100-byte ICMP Echos to CC20::20, timeout is 2  
seconds:  
!!!!!  
Success rate is 100 percent (5/5), round-trip  
min/avg/max = 4/44/100 ms
```

从路由器 R3 :

```
R3#ping AA10::10
```

```
Type escape sequence to abort.  
Sending 5, 100-byte ICMP Echos to AA10::10, timeout is 2  
seconds:  
!!!!!  
Success rate is 100 percent (5/5), round-trip  
min/avg/max = 4/33/92 ms
```

```
R3#ping AA20::20
```

```
Type escape sequence to abort.  
Sending 5, 100-byte ICMP Echos to AA20::20, timeout is 2  
seconds:  
!!!!!  
Success rate is 100 percent (5/5), round-trip  
min/avg/max = 4/33/92 ms  
!--- The above ping responses shows that R1 and R3 are  
able !--- to communicate with each other.
```

相关信息

- [BGP 支持页](#)
- [IPv6 支持页面](#)
- [Cisco IOS IPv6 命令参考](#)
- [BGP 案例分析](#)
- [EIGRP 支持页](#)
- [技术支持和文档 - Cisco Systems](#)