

在BGP中重分發OSPFv3路由的配置示例

目錄

[簡介](#)

[必要條件](#)

[必要條件](#)

[硬體和軟體版本](#)

[慣例](#)

[設定](#)

[網路圖表](#)

[組態](#)

[驗證](#)

[檢驗OSPFv3配置](#)

[驗證BGP設定](#)

[相關資訊](#)

簡介

本文檔提供了將開放最短路徑優先3版(OSPFv3)路由重分發到IPv6多協定BGP的示例。OSPFv3擴展了OSPF版本2，以便支援IPv6路由字首和較大尺寸的IPv6地址。多協定BGP是一種增強型BGP，它承載多個網路層協定地址系列（如IPv6地址系列）和IP組播路由的路由資訊。

必要條件

必要條件

嘗試此組態之前，請確保符合以下要求：

- [OSPFv3 的範例組態](#)
- [適用於IPv6的多重通訊協定BGP組態範例](#)
- [重新分配路由通訊協定](#)

硬體和軟體版本

本文件所述內容不限於特定軟體和硬體版本。

本檔案中的組態是根據搭載Cisco IOS[®]軟體版本12.4(15)T1的Cisco 3700系列路由器。

慣例

如需文件慣例的詳細資訊，請參閱[思科技術提示慣例](#)。

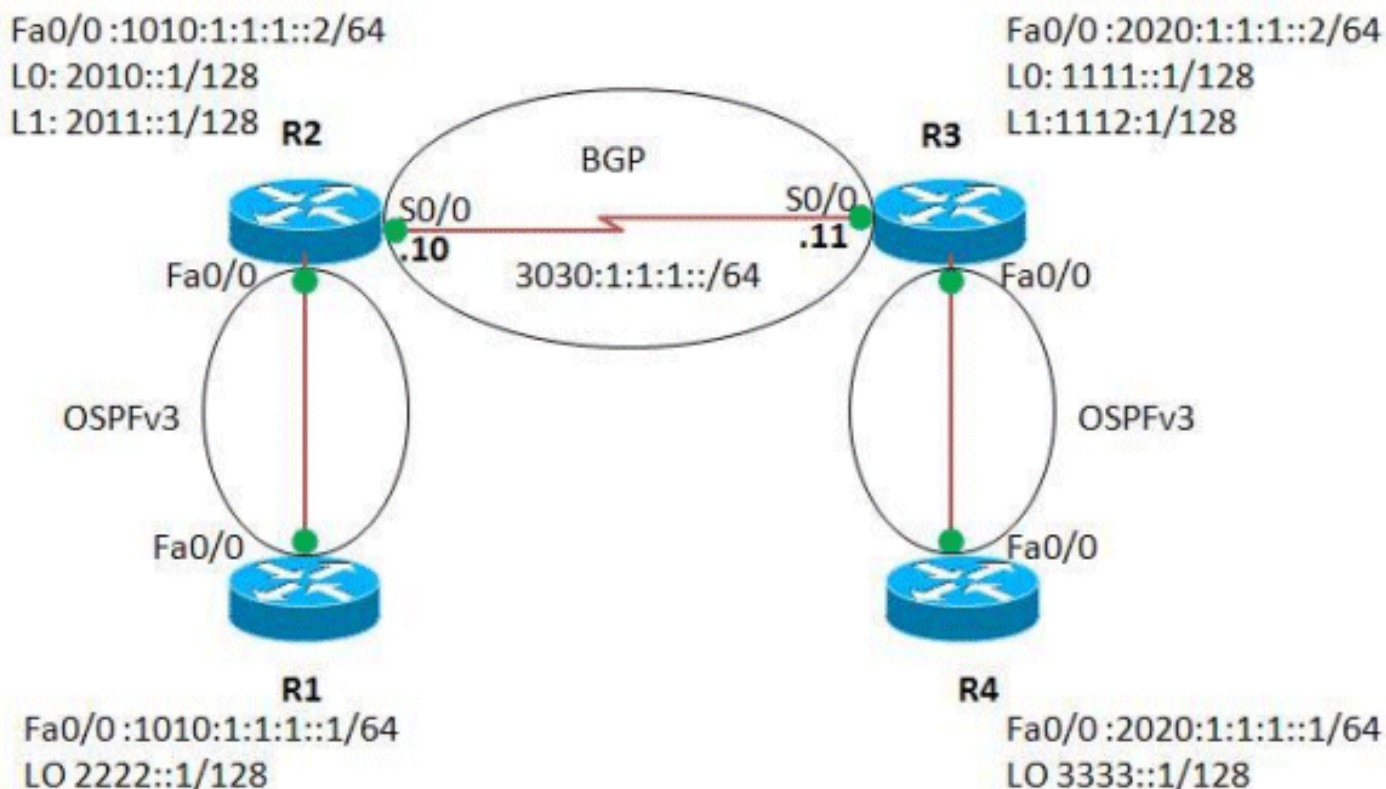
設定

在本示例中，路由器R2和R3通過串列介面連線，並且配置了多協定BGP。路由器R2和R3使用OSPFv3與其本地路由器R1和R4通訊。在路由器中建立環回地址以生成網路。同時運行BGP和OSPFv3的路由器R2和R3，使用`redistribute`命令將OSPFv3路由重分發到BGP。所有路由器都配置了IPv6地址。

註：使用[Command Lookup Tool](#)(僅限註冊客戶)查詢有關本文檔中使用的命令的更多資訊。

網路圖表

本檔案會使用以下網路設定：



組態

本檔案會使用以下設定：

- [路由器R1](#)
- [路由器R2](#)
- [路由器R3](#)
- [路由器R4](#)

路由器R1

```
!  
version 12.4  
!
```

```

hostname R1
!
ip cef
!
ipv6 unicast-routing
!--- Enables the forwarding of IPv6 packets. ! interface
Loopback0 no ip address ipv6 address 2222::1/128 ipv6
ospf 1 area 0 !--- Enables OSPFv3 on the interface and
associates !--- the interface loopback0 to area 0. !
interface FastEthernet0/0 no ip address duplex auto
speed auto ipv6 address 1010:1:1:1::1/64 ipv6 ospf 1
area 0 !--- Associates the Interface Fa0/0 to area 0. !
ipv6 router ospf 1 router-id 1.1.1.1 !--- Router R1 uses
1.1.1.1 as router ID. log-adjacency-changes ! end

```

路由器R2

```

!
version 12.4
!
hostname R2
!
ip cef
!
ipv6 unicast-routing
!
interface Loopback0
no ip address
ipv6 address 2010::1/128
ipv6 ospf 1 area 1
!
interface Loopback1
no ip address
ipv6 address 2011::1/128
ipv6 ospf 1 area 1
!
interface Loopback99
no ip address
ipv6 address 5050:55:55:55::55/128
!
interface FastEthernet0/0
no ip address
duplex auto
speed auto
ipv6 address 1010:1:1:1::2/64
ipv6 ospf 1 area 0
!
interface Serial0/0
no ip address
ipv6 address 3030:1:1:1::10/64
clock rate 2000000
!
router bgp 65000
bgp router-id 1.1.1.1
no bgp default ipv4-unicast
!--- Without configuring "no bgp default ipv4-unicast"
only !--- IPv4 will be advertised. bgp log-neighbor-
changes neighbor 3030:1:1:1::11 remote-as 65000 neighbor
3030:1:1:1::11 update-source Serial0/0 ! address-family
ipv6 neighbor 3030:1:1:1::11 activate network
5050:55:55:55::55/128 redistribute connected
redistribute ospf 1 match internal external 1 external 2
!--- This redistributes all OSPF routes into BGP. no

```

```
synchronization exit-address-family ! ipv6 router ospf 1
router-id 2.2.2.2 log-adjacency-changes ! end
```

路由器R3

```
!
version 12.4
!
hostname R3
!
ip cef
!
ipv6 unicast-routing
!
interface Loopback0
no ip address
ipv6 address 1111::1/128
ipv6 ospf 1 area 1
!
interface Loopback1
no ip address
ipv6 address 1112::1/128
ipv6 ospf 1 area 1
!
interface Loopback99
no ip address
ipv6 address 6060:66:66:66::66/128
!
interface FastEthernet0/0
no ip address
duplex auto
speed auto
ipv6 address 2020:1:1:1::2/64
ipv6 ospf 1 area 0
!
interface Serial0/0
no ip address
ipv6 address 3030:1:1:1::11/64
clock rate 2000000
!
router bgp 65000
bgp router-id 2.2.2.2
no bgp default ipv4-unicast
bgp log-neighbor-changes
neighbor 3030:1:1:1::10 remote-as 65000
neighbor 3030:1:1:1::10 update-source Serial0/0
!
address-family ipv6
neighbor 3030:1:1:1::10 activate
network 6060:66:66:66::66/128
redistribute connected
redistribute ospf 1 match internal external 1 external
2
no synchronization
exit-address-family
!
ipv6 router ospf 1
router-id 3.3.3.3
log-adjacency-changes
!
end
```

路由器R4

```
!  
version 12.4  
!  
hostname R4  
!  
ip cef  
!  
ipv6 unicast-routing  
!  
interface Loopback0  
  no ip address  
  ipv6 address 3333::1/128  
  ipv6 ospf 1 area 0  
!  
interface FastEthernet0/0  
  no ip address  
  duplex auto  
  speed auto  
  ipv6 address 2020:1:1:1::1/64  
  ipv6 ospf 1 area 0  
!  
ipv6 router ospf 1  
  router-id 5.5.5.5  
  log-adjacency-changes  
!  
end
```

驗證

使用本節內容，確認您的組態是否正常運作。

[輸出直譯器工具](#)(僅供已註冊客戶使用)(OIT)支援某些show命令。使用OIT檢視show命令輸出的分析

。

以下show命令用於驗證設定：

- [show ipv6 route ospf](#)
- [show ipv6 route bgp](#)

檢驗OSPFv3配置

為了檢驗OSPFv3配置是否正確，請在路由器R1和R4中使用[show ipv6 route ospf](#)命令。

show ipv6 route ospf

在路由器R1中

```
R1#show ipv6 route ospf  
IPv6 Routing Table - 6 entries  
Codes: C - Connected, L - Local, S - Static, R - RIP, B  
- BGP  
       U - Per-user Static route, M - MIPv6  
       I1 - ISIS L1, I2 - ISIS L2, IA - ISIS interarea,  
IS - ISIS summary  
       O - OSPF intra, OI - OSPF inter, OE1 - OSPF ext  
1, OE2 - OSPF ext 2  
       ON1 - OSPF NSSA ext 1, ON2 - OSPF NSSA ext 2
```

```
D - EIGRP, EX - EIGRP external
OI 2010::1/128 [110/10]
   via FE80::C001:16FF:FEDC:0, FastEthernet0/0
OI 2011::1/128 [110/10]
   via FE80::C001:16FF:FEDC:0, FastEthernet0/0
```

路由器R4中

```
R4#show ipv6 route ospf
IPv6 Routing Table - 6 entries
Codes: C - Connected, L - Local, S - Static, R - RIP, B
- BGP
      U - Per-user Static route, M - MIPv6
      I1 - ISIS L1, I2 - ISIS L2, IA - ISIS interarea,
IS - ISIS summary
      O - OSPF intra, OI - OSPF inter, OE1 - OSPF ext
1, OE2 - OSPF ext 2
      ON1 - OSPF NSSA ext 1, ON2 - OSPF NSSA ext 2
      D - EIGRP, EX - EIGRP external
OI 1111::1/128 [110/10]
   via FE80::C002:16FF:FEDC:0, FastEthernet0/0
OI 1112::1/128 [110/10]
   via FE80::C002:16FF:FEDC:0, FastEthernet0/0
```

驗證BGP設定

要驗證OSPFv3路由是否重新分發到BGP，請在路由器R2和R3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 - 14 entries
Codes: C - Connected, L - Local, S - Static, R - RIP, B
- BGP
      U - Per-user Static route, M - MIPv6
      I1 - ISIS L1, I2 - ISIS L2, IA - ISIS interarea,
IS - ISIS summary
      O - OSPF intra, OI - OSPF inter, OE1 - OSPF ext
1, OE2 - OSPF ext 2
      ON1 - OSPF NSSA ext 1, ON2 - OSPF NSSA ext 2
      D - EIGRP, EX - EIGRP external
B 1111::1/128 [200/0]
   via 3030:1:1:1::11
B 1112::1/128 [200/0]
   via 3030:1:1:1::11
B 2020:1:1:1::/64 [200/0]
   via 3030:1:1:1::11
B 3333::1/128 [200/10]
   via 3030:1:1:1::11
!--- The above routes are OSPFv3 routes !--- that are
redistributed in to BGP. B 6060:66:66:66::66/128 [200/0]
via 3030:1:1:1::11
```

在路由器R3中

```
R3#show ipv6 route bgp
IPv6 Routing Table - 14 entries
Codes: C - Connected, L - Local, S - Static, R - RIP, B
- BGP
      U - Per-user Static route, M - MIPv6
      I1 - ISIS L1, I2 - ISIS L2, IA - ISIS interarea,
IS - ISIS summary
```

```
O - OSPF intra, OI - OSPF inter, OE1 - OSPF ext
1, OE2 - OSPF ext 2
ON1 - OSPF NSSA ext 1, ON2 - OSPF NSSA ext 2
D - EIGRP, EX - EIGRP external
B 1010:1:1:1::/64 [200/0]
   via 3030:1:1:1::10
B 2010::1/128 [200/0]
   via 3030:1:1:1::10
B 2011::1/128 [200/0]
   via 3030:1:1:1::10
B 2222::1/128 [200/10]
   via 3030:1:1:1::10
!--- The above routes are OSPFv3 routes !--- that are
redistributed in to BGP. B 5050:55:55:55::55/128 [200/0]
via 3030:1:1:1::10
```

相關資訊

- [IPv6支援頁面](#)
- [OSPF支援頁](#)
- [BGP 支援頁面](#)
- [技術支援與文件 - Cisco Systems](#)