

MP-EBGP配置示例

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简介

本文提供信息如何配置在Cisco IOS路由器扩展的边界网关协议(MP-EBGP)多协议。MP-BGP是允许BGP传播多个网络网络层协议IPv6，Vpnv4和其他的路由信息的延长的BGP。MP-BGP允许您有单播路由拓扑与组播路由拓扑不同，帮助控制网络和资源。

先决条件

要求

本文档没有任何特定的要求。

使用的组件

本文档不限于特定的软件和硬件版本。

在本文的配置根据运行Cisco IOS软件版本12.4(15)T 13的Cisco 3700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，R1和R3路由器配置是AS 5500形成的iBGP。R2路由器配置是AS 6500。使用MP-EBGP，R1和R2路由器彼此连通。所有路由器配置与环回地址。

注意：有关本文档所用命令的详细信息，请使用[命令查找工具](#)（[仅限注册用户](#)）。

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](#)

在路由器R1的配置

```
R1#show run
Building configuration...
!
version 12.4
!
hostname R1
!
ip cef
!
!
interface Loopback0
 ip address 10.10.10.10 255.255.255.0
!
interface FastEthernet0/0
 ip address 192.168.100.10 255.255.255.0
 duplex auto
 speed auto
!
interface Serial10/0
 ip address 172.16.10.1 255.255.255.0
 mpls ip clock rate 2000000 ! router bgp 5500 no
synchronization bgp router-id 10.10.10.10 bgp log-
neighbor-changes network 192.168.100.0 redistribute
connected neighbor 172.16.10.2 remote-as 6500 neighbor
172.16.10.2 soft-reconfiguration inbound neighbor
192.168.100.11 remote-as 5500 no auto-summary ! address-
family vpnv4 neighbor 172.16.10.2 activate neighbor
172.16.10.2 send-community both !--- Sends the community
attribute to a BGP neighbor. exit-address-family !! end
```

在路由器R2的配置

```
R2#show run
Building configuration...
!
version 12.4
!
hostname R2
!
ip cef
!
ip vrf WAN
 rd 2020:1
 route-target export 2020:1
 route-target import 2020:1
```

```

!
!
interface Loopback0
  ip vrf forwarding WAN !--- Associates a VRF instance
  with an interface or subinterface. ip address
  20.20.20.20 255.255.255.255 ! interface Serial0/0 ip vrf
  forwarding WAN ip address 172.16.10.2 255.255.255.0 mpls
  ip clock rate 2000000 ! router bgp 6500 no
  synchronization bgp router-id 20.20.20.20 bgp log-
  neighbor-changes neighbor 172.16.10.1 remote-as 5500 no
  auto-summary ! ! address-family vpnv4 neighbor
  172.16.10.1 activate neighbor 172.16.10.1 send-community
  both exit-address-family ! address-family ipv4 vrf WAN
  redistribute connected redistribute static neighbor
  172.16.10.1 remote-as 5500 neighbor 172.16.10.1 activate
  no synchronization exit-address-family ! ! ! end

```

在路由器R3的配置

```

R3#show run
Building configuration...
!
version 12.4
!
hostname R3
!
ip cef
!
!
!
interface Loopback0
  ip address 11.11.11.11 255.255.255.255
!
interface FastEthernet0/0
  ip address 192.168.100.11 255.255.255.0
  duplex auto
  speed auto
!
router bgp 5500
  no synchronization
  bgp router-id 11.11.11.11
  bgp log-neighbor-changes
  neighbor 192.168.100.10 remote-as 5500
  no auto-summary
!
end

```

验证

为了显示条目在(BGP)路由表里，请使用[show ip bgp命令](#)。

show ip bgp

```

在路由器 R1 中 R1#show ip bgp 172.16.10.2
BGP routing table entry for 172.16.10.2/32, version 14
Paths: (1 available, best #1, table Default-IP-Routing-
Table)
  Advertised to update-groups:
    1    2
  Local
    0.0.0.0 from 0.0.0.0 (10.10.10.10)
      Origin incomplete, metric 0, localpref 100, weight
  32768, valid, sourced, best

```

```

!--- Displays the routing table entries for the host
172.16.10.2 R1#sh ip bgp 192.168.100.11 BGP routing
table entry for 192.168.100.0/24, version 4 Paths: (1
available, best #1, table Default-IP-Routing-Table)
Advertised to update-groups: 1 2 Local 0.0.0.0 from
0.0.0.0 (10.10.10.10) Origin IGP, metric 0, localpref
100, weight 32768, valid, sourced, local, best !---
Displays the entries for the host 192.168.100.11 在路由
器 R3 中 R3#sh ip bgp 192.168.100.10
BGP routing table entry for 192.168.100.0/24, version 4
Paths: (1 available, best #1, table Default-IP-Routing-
Table, RIB-failure(17))
Not advertised to any peer
Local
192.168.100.10 from 192.168.100.10 (10.10.10.10)
Origin IGP, metric 0, localpref 100, valid,
internal, best
!--- Displays the entries for the host 192.168.100.10

```

在路由器R2中，请使用[show ip bgp vpnv4](#)命令显示(从(BGP)表的Vpnv4)地址信息。

```

show ip bgp vpnv4
在路由器 R2 中 R2#sh ip bgp vpnv4 vrf WAN
BGP table version is 24, local router ID is 20.20.20.20
Status codes: s suppressed, d damped, h history, *
valid, > best, I - internal,
                r RIB-failure, S Stale
Origin codes: I - IGP, e - EGP, ? - incomplete

Network          Next Hop          Metric LocPrf
Weight Path
Route Distinguisher: 2020:1 (default for vrf WAN)
*> 10.10.10.0/24  172.16.10.1        0
0 5500 ?
*> 20.20.20.20/32 0.0.0.0            0
32768 ?
* 172.16.10.0/24 172.16.10.1        0
0 5500 ?
*>                  0.0.0.0            0
32768 ?
r> 172.16.10.2/32 172.16.10.1        0
0 5500 ?
*> 192.168.100.0  172.16.10.1        0
0 5500 I
!--- Displays prefixes associated with the (VRF)
instance WAN. R2#show ip bgp vpnv4 vrf WAN 172.16.10.1
BGP routing table entry for 2020:1:172.16.10.0/24,
version 7
Paths: (2 available, best #2, table WAN)
Advertised to update-groups:
  1
  5500
    172.16.10.1 from 172.16.10.1 (10.10.10.10)
      Origin incomplete, metric 0, localpref 100, valid,
external
      Extended Community: RT:2020:1
      mpls labels in/out 18/nolabel
  Local
    0.0.0.0 from 0.0.0.0 (20.20.20.20)
      Origin incomplete, metric 0, localpref 100, weight
32768, valid, sourced, best
      Extended Community: RT:2020:1

```

```
mpls labels in/out 18/aggregate(WAN)
!--- Displays prefixes associated with neighbor
172.16.10.1
```

MP-EBGP设立在R1和R2路由器之间。请使用ping命令验证可接通性从R1到R2反之亦然。

ping

在路由器 R1 中 R1#ping 172.16.10.2

```
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 172.16.10.2, timeout
is 2 seconds:
```

```
!!!!!
```

```
Success rate is 100 percent (5/5), round-trip
min/avg/max = 12/64/208 ms
```

R1#ping 192.168.100.11

```
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.100.11,
timeout is 2 seconds:
```

```
!!!!!
```

```
Success rate is 100 percent (5/5), round-trip
min/avg/max = 12/41/96 ms
```

!--- Router R1 can successfully ping the routers R2 and R3. 在路由器 R2 中 R2#ping vrf WAN 172.16.10.1

```
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 172.16.10.1, timeout
is 2 seconds:
```

```
!!!!!
```

```
Success rate is 100 percent (5/5), round-trip
min/avg/max = 4/32/96 ms
```

R2#ping vrf WAN 192.168.100.11

```
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.100.11,
timeout is 2 seconds:
```

```
!!!!!
```

```
Success rate is 100 percent (5/5), round-trip
min/avg/max = 32/73/204 ms
```

!--- Router R2 can successfully reach router R1 and R3.

相关信息

- [边界网关协议 \(BGP\)](#)
- [IP 多播命令的多协议 BGP 扩展](#)
- [技术支持和文档 - Cisco Systems](#)