

# Exemplo de configuração de MP-EBGP

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## [Introduction](#)

Este documento fornece informações sobre como configurar o Protocolo de Gateway de Borda Estendida multiprotocolo (MP-EBGP - Multiprotocol Extended Border Gateway Protocol) em roteadores Cisco IOS. MP-BGP é um BGP estendido que permite que o BGP transporte informações de roteamento para vários protocolos de camada de rede IPv6, VPNv4 e outros. O MP-BGP permite que você tenha uma topologia de roteamento unicast diferente de uma topologia de roteamento multicast, que ajuda a controlar a rede e os recursos.

## [Prerequisites](#)

### [Requirements](#)

Não existem requisitos específicos para este documento.

### [Componentes Utilizados](#)

Este documento não se restringe a versões de software e hardware específicas.

As configurações neste documento são baseadas no Cisco 3700 Series Router que executa o Cisco IOS® Software Release 12.4 (15)T 13.

### [Conventions](#)

Consulte as [Convenções de Dicas Técnicas da Cisco para obter mais informações sobre convenções de documentos](#).

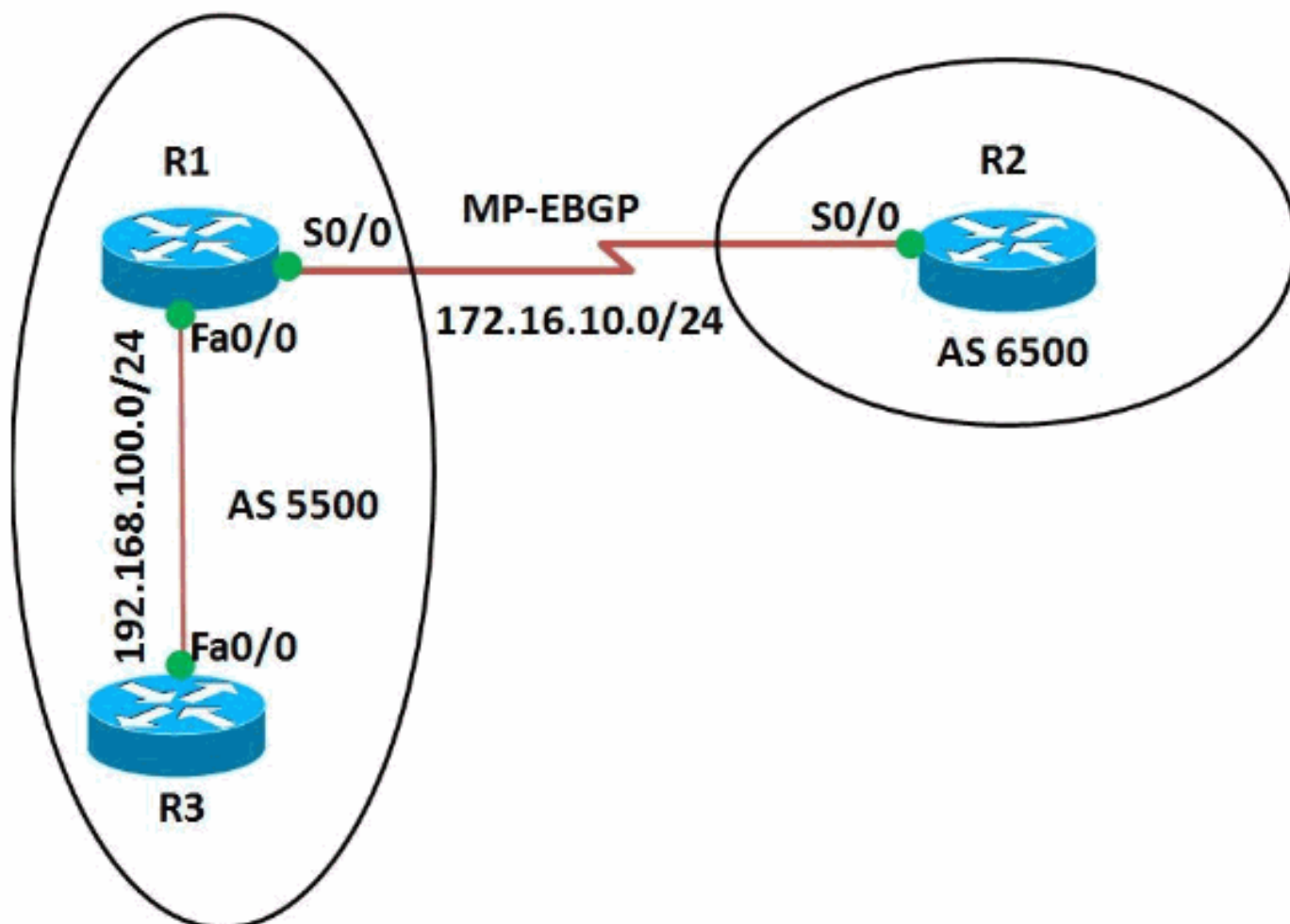
## Configurar

Neste exemplo, os roteadores R1 e R3 estão configurados para estarem no AS 5500 formando iBGP. O roteador R2 está configurado para estar no AS 6500. Os roteadores R1 e R2 se comunicam usando MP-EBGP. Todos os roteadores são configurados com endereços de loopback.

Nota: Use a Command Lookup Tool (somente clientes registrados) para obter mais informações sobre os comandos usados neste documento.

## Diagrama de Rede

Este documento utiliza a seguinte configuração de rede:



## Configurações

Este documento utiliza as seguintes configurações:

- [Roteador R1](#)
- [Roteador R2](#)
- [Roteador R3](#)

Configuração no roteador R1

```
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
```

## Configuração no roteador R2

```
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 Serial10/0 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 vpv4 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
```

## Configuração no roteador R3

```
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
```

## Verificar

Para exibir entradas na tabela de roteamento (BGP), use o comando [show ip bgp](#).

## show ip bgp

### No roteador R1

```
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*

### No roteador R3

```
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*

No roteador R2, use o comando [show ip bgp vpnv4](#) para exibir informações de endereço (VPNv4) da tabela (BGP).

### show ip bgp vpnv4

#### No roteador R2

```
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
```

O MP-EBGP é estabelecido entre os roteadores R1 e R2. Use o comando ping para verificar a acessibilidade de R1 para R2 e vice-versa.

## ping

### No roteador R1

```
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.
```

### No roteador R2

```
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.
```

## [Informações Relacionadas](#)

- [BGP \(Border Gateway Protocol\)](#)
- [Extensões BGP multiprotocolo para comandos multicast IP](#)
- [Suporte Técnico e Documentação - Cisco Systems](#)