

# Esempio di configurazione MP-EBGP

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## [Introduzione](#)

In questo documento viene spiegato come configurare il protocollo MP-EBGP (Multiprotocol Extended Border Gateway Protocol) nei router Cisco IOS. MP-BGP è un BGP esteso che consente a BGP di trasportare informazioni di routing per più protocolli di livello rete IPv6, VPNv4 e altri. MP-BGP consente di avere una topologia di routing unicast diversa da una topologia di routing multicast, che aiuta a controllare la rete e le risorse.

## [Prerequisiti](#)

### [Requisiti](#)

Nessun requisito specifico previsto per questo documento.

### [Componenti usati](#)

Il documento può essere consultato per tutte le versioni software o hardware.

Le configurazioni di questo documento si basano sul router Cisco serie 3700 con software Cisco IOS® versione 12.4 (15)T 13.

### [Convenzioni](#)

Per ulteriori informazioni sulle convenzioni usate, consultare il documento [Cisco sulle convenzioni nei suggerimenti tecnici](#).

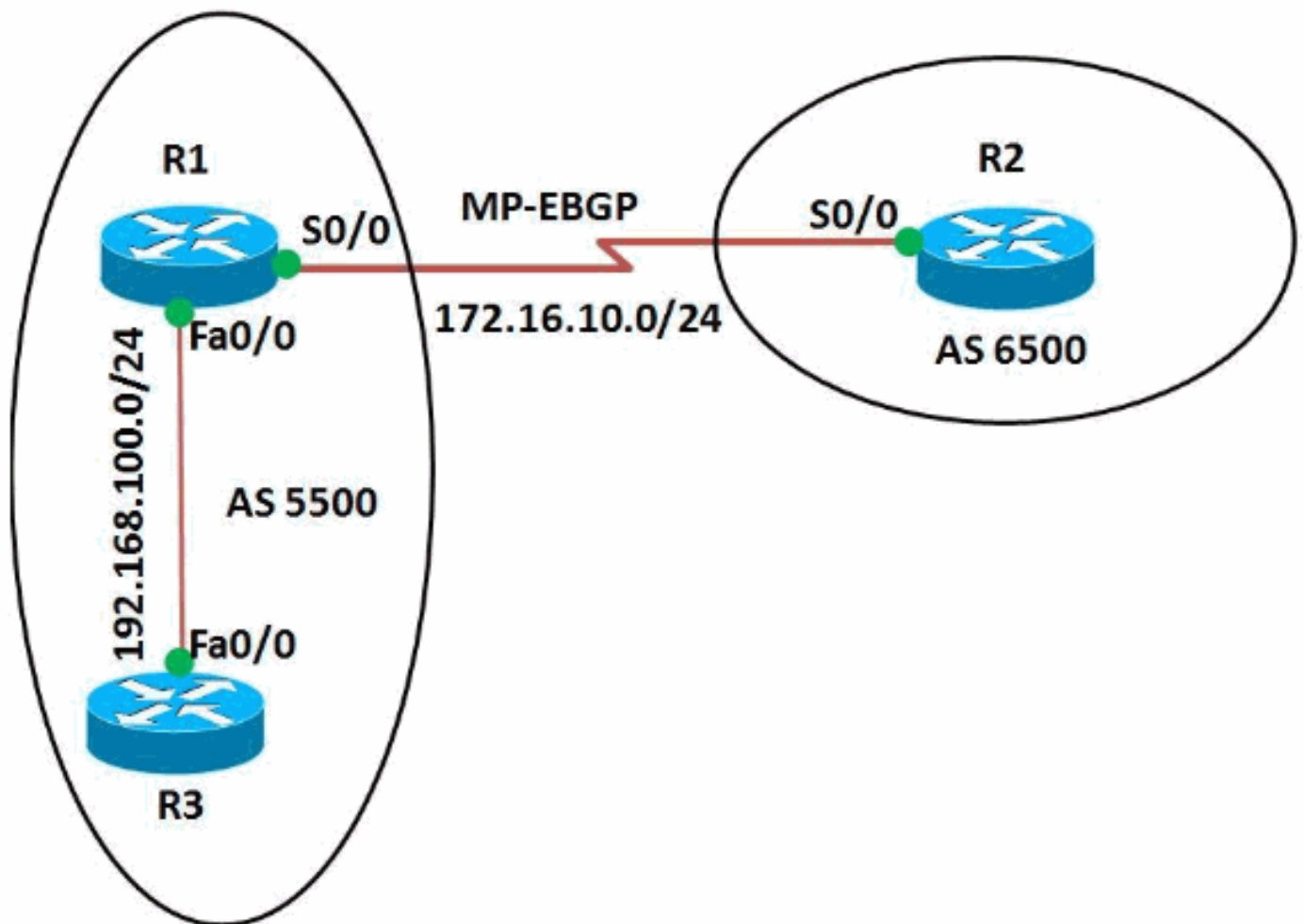
## [Configurazione](#)

Nell'esempio, i router R1 e R3 sono configurati per essere inclusi nell'AS 5500 e formare iBGP. Il router R2 è configurato per essere in AS 6500. I router R1 e R2 comunicano tra loro utilizzando MP-EBGP. Tutti i router sono configurati con indirizzi di loopback.

**Nota:** per ulteriori informazioni sui comandi menzionati in questo documento, usare lo [strumento di ricerca](#) dei comandi (solo utenti [registrati](#)).

## Esempio di rete

Nel documento viene usata questa impostazione di rete:



## Configurazioni

Nel documento vengono usate queste configurazioni:

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

### Configurazione sul router 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 Serial0/0
 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

```

## Configurazione sul router 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 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
```

### Configurazione sul router 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
```

## Verifica

Per visualizzare le voci nella tabella di routing (BGP), usare il comando [show ip bgp](#).

### show ip bgp

#### Nel router 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
```

### Nel router 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
```

Nel router R2, usare il comando [show ip bgp vpnv4](#) per visualizzare le informazioni sull'indirizzo (VPNv4) dalla tabella (BGP).

### show ip bgp vpnv4

#### Nel router 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

MP-EBGP stabilito tra i router R1 e R2. Utilizzare il comando ping per verificare la raggiungibilità da R1 a R2 e viceversa.

## ping

### Nel router 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.
```

### Nel router 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.
```

## Informazioni correlate

- [Border Gateway Protocol \(BGP\)](#)
- [Estensioni BGP multiprotocollo per comandi IP Multicast](#)
- [Documentazione e supporto tecnico – Cisco Systems](#)