

# Configure la característica de la preferencia local del IPv6 BGP

## Contenido

[Introducción](#)

[prerrequisitos](#)

[Requisitos](#)

[Componentes Utilizados](#)

[Convenciones](#)

[Antecedentes](#)

[Configurar](#)

[Diagrama de la red](#)

[Configuraciones](#)

[Verificación](#)

[Troubleshooting](#)

[Información Relacionada](#)

## [Introducción](#)

Este documento explica la característica Preferencia Local del Border Gateway Protocol (BGP) de IPv6. La preferencia local es una indicación para el AS sobre qué trayectoria tiene preferencia para salir del AS a fin de alcanzar una red determinada. Se prefiere un trayecto con preferencia local más alta. El valor predeterminado de preferencia es 100.

## [prerrequisitos](#)

### [Requisitos](#)

Asegúrese de cumplir estos requisitos antes de intentar esta configuración:

- Comprensión del Routing Protocol BGP y de su operación
- Comprensión del esquema de direccionamiento del IPv6

### [Componentes Utilizados](#)

La información en este documento se prueba en estas versiones de software y hardware

- Cisco IOS Software Release 12.4, conjunto de características anticipado de los Servicios IP
- Routers de acceso multiservicio Cisco de la serie 3700

## [Convenciones](#)

Consulte [Convenciones de Consejos TécnicosCisco](#) para obtener más información sobre las convenciones del documento.

## [Antecedentes](#)

En el ejemplo, el r1, el r2 y el R3 del router son el número del sistema autónomo 123 de la parte de BGP. El R4 es el sistema autónomo 101 de la parte de y el sistema autónomo 100 de la parte de R5.

Configuran al tres Routers (r1, r2 y R3) con OSPFv3 para la Conectividad IGP. Prefijo del IPv6 del loop - la interfaz posterior Lo 0 (1111:111:111:A::/64 eui-64, 2222:222:222:A::/64 eui-64 y 3333:333:333:A::/64 eui-64) del tres Routers se hace publicidad en el área 0 del Routing Protocol OSPFv3.

La mirada del IBGP se forma entre el r1 del Routers, el r2 y el R3 con los prefijos aprendidos del loopback. El r1 del router y el R4 están conectados sobre un link PÁLIDO (conexión en serie) y forma el peering EBGP. Semejantemente el router R3 y R5 está formando el EBGP que mira sobre el link PÁLIDO.

El router R4 y R5 inyecta los mismos prefijos del IPv6:

1. red BC01:BC1:10:A::/64
2. red BC02:BC1:11:A::/64
3. red BC03:BC1:12:A::/64

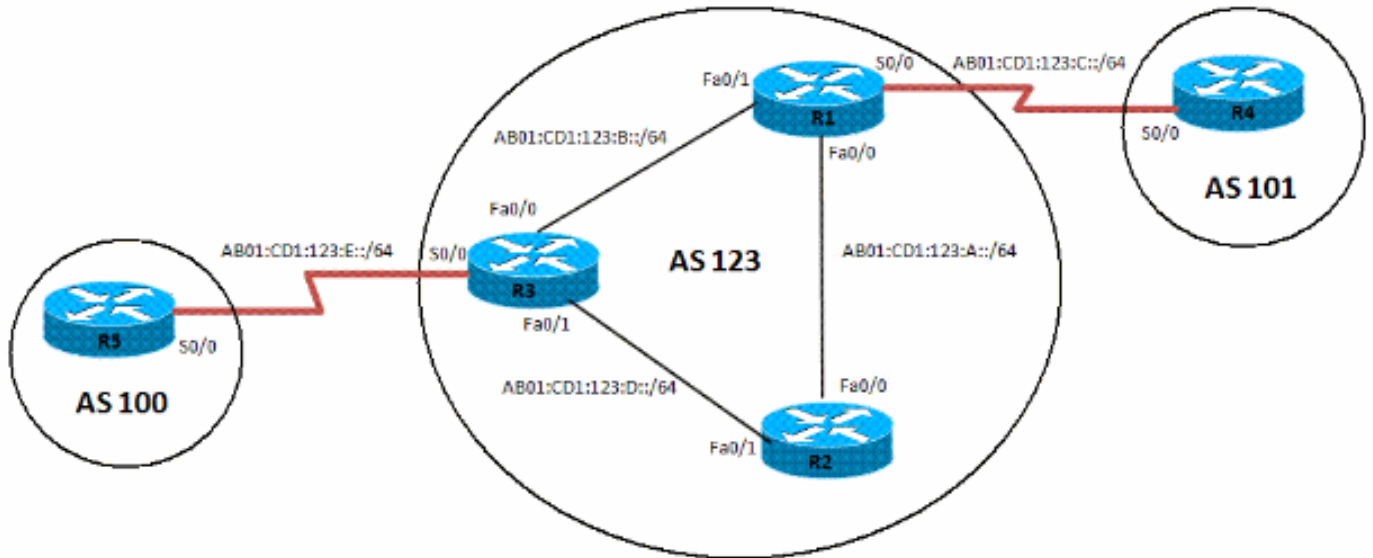
Pues el dos Routers R4 y R5 inyecta los mismos prefijos del IPv6, la selección de trayecto se basa en los atributos bien conocidos BGP. En este ejemplo, se elige la preferencia local. El valor de la preferencia local BGP de 500 se fija para el prefijo BC01:BC1:10:A::/64 en el router R3 con el route-map. Esto da lugar al R3 como el punto de salida para este prefijo y r1 el punto de salida para los dos prefijos restantes.

## [Configurar](#)

Las interfaces Fast Ethernet (F0/0 y F0/1) del r1, del r2 y del R3 del Routers son IPv6 habilitado con el direccionamiento del IPv6 del formato eui-64.

## [Diagrama de la red](#)

En este documento, se utiliza esta configuración de red:



## Configuraciones

En este documento, se utilizan estas configuraciones:

- [Configuración del r1](#)
- [Configuración del r2](#)
- [Configuración R3](#)
- [Configuración R4](#)
- [Configuración R5](#)

**Note:** Habilitan a todo el Routers con la expedición de los paquetes del IPv6 usando el comando del [Unicast Routing del IPv6](#).

### R1

```
interface Loopback0
  no ip address
  ipv6 address 1111:111:111:A::/64 eui-64
  ipv6 enable
  ipv6 ospf 10 area 0
  !--- Enables OSPFv3 on the interface and associates !---
  the interface loopback0 to area 0. ! interface
FastEthernet0/0 description CONNECTED TO Rtr2 no ip
address duplex auto speed auto ipv6 address
AB01:CD1:123:A::/64 eui-64 ipv6 enable ipv6 ospf 10 area
0 ! interface Serial0/0 no ip address ipv6 address
AB01:CD1:123:C::/64 eui-64 ipv6 enable clock rate
2000000 ! interface FastEthernet0/1 no ip address duplex
auto speed auto ipv6 address AB01:CD1:123:B::/64 eui-64
ipv6 enable ipv6 ospf 10 area 0 ! ipv6 router ospf 10
router-id 1.1.1.1 log-adjacency-changes redistribute
connected route-map CONNECTED ! route-map CONNECTED
permit 10 match interface Serial0/0 ! router bgp 123 bgp
router-id 1.1.1.1 no bgp default ipv4-unicast bgp log-
neighbor-changes neighbor 2222:222:222:A:C602:3FF:FEF0:0
remote-as 123 neighbor 2222:222:222:A:C602:3FF:FEF0:0
update-source Loopback0 neighbor
3333:333:333:A:C603:3FF:FEF0:0 remote-as 123 neighbor
3333:333:333:A:C603:3FF:FEF0:0 update-source Loopback0
neighbor AB01:CD1:123:C:C604:16FF:FE98:0 remote-as 101
```

```
neighbor AB01:CD1:123:C:C604:16FF:FE98:0 ebgp-multihop 5
! address-family ipv6 neighbor
2222:222:222:A:C602:3FF:FEF0:0 activate neighbor
2222:222:222:A:C602:3FF:FEF0:0 next-hop-self neighbor
3333:333:333:A:C603:3FF:FEF0:0 activate neighbor
3333:333:333:A:C603:3FF:FEF0:0 next-hop-self neighbor
AB01:CD1:123:C:C604:16FF:FE98:0 activate exit-address-
family
```

## R2

```
interface Loopback0
  no ip address
  ipv6 address 2222:222:222:A::/64 eui-64
  ipv6 enable
  ipv6 ospf 10 area 0
!
interface FastEthernet0/0
  no ip address
  duplex auto
  speed auto
  ipv6 address AB01:CD1:123:A::/64 eui-64
  ipv6 ospf 10 area 0
!
interface FastEthernet0/1
  no ip address
  duplex auto
  speed auto
  ipv6 address AB01:CD1:123:D::/64 eui-64
  ipv6 enable
  ipv6 ospf 10 area 0
!
ipv6 router ospf 10
  router-id 2.2.2.2
  log-adjacency-changes
!
router bgp 123
  no synchronization
  bgp router-id 2.2.2.2
  bgp log-neighbor-changes
  neighbor 1111:111:111:A:C601:3FF:FEF0:0 remote-as 123
  neighbor 1111:111:111:A:C601:3FF:FEF0:0 update-source
Loopback0
  neighbor 3333:333:333:A:C603:3FF:FEF0:0 remote-as 123
  neighbor 3333:333:333:A:C603:3FF:FEF0:0 update-source
Loopback0
  no auto-summary
!
address-family ipv6
  neighbor 1111:111:111:A:C601:3FF:FEF0:0 activate
  neighbor 3333:333:333:A:C603:3FF:FEF0:0 activate
exit-address-family
```

## R3

```
interface Loopback0
  no ip address
  ipv6 address 3333:333:333:A::/64 eui-64
  ipv6 enable
  ipv6 ospf 10 area 0
!
interface FastEthernet0/0
  no ip address
```

```

duplex auto
speed auto
ipv6 address AB01:CD1:123:B::/64 eui-64
ipv6 enable
ipv6 ospf 10 area 0
!
interface Serial0/0
no ip address
ipv6 address AB01:CD1:123:E::/64 eui-64
ipv6 enable
clock rate 2000000
!
interface FastEthernet0/1
no ip address
duplex auto
speed auto
ipv6 address AB01:CD1:123:D::/64 eui-64
ipv6 ospf 10 area 0
!
ipv6 router ospf 10
router-id 3.3.3.3
log-adjacency-changes
redistribute connected route-map CONNECTED
!
router bgp 123
no synchronization
bgp router-id 3.3.3.3
bgp log-neighbor-changes
neighbor 1111:111:111:A:C601:3FF:FEF0:0 remote-as 123
neighbor 1111:111:111:A:C601:3FF:FEF0:0 update-source
Loopback0
neighbor 2222:222:222:A:C602:3FF:FEF0:0 remote-as 123
neighbor 2222:222:222:A:C602:3FF:FEF0:0 update-source
Loopback0
neighbor AB01:CD1:123:E:C605:16FF:FE98:0 remote-as 202
neighbor AB01:CD1:123:E:C605:16FF:FE98:0 ebgp-multihop
5
no auto-summary
!
address-family ipv6
neighbor 1111:111:111:A:C601:3FF:FEF0:0 activate
neighbor 1111:111:111:A:C601:3FF:FEF0:0 next-hop-self
neighbor 1111:111:111:A:C601:3FF:FEF0:0 route-map
LOCAL_PREF out
neighbor 2222:222:222:A:C602:3FF:FEF0:0 activate
neighbor 2222:222:222:A:C602:3FF:FEF0:0 next-hop-self
neighbor 2222:222:222:A:C602:3FF:FEF0:0 route-map
LOCAL_PREF out
neighbor AB01:CD1:123:E:C605:16FF:FE98:0 activate
exit-address-family
!
ipv6 prefix-list 10 seq 5 permit BC01:BC1:10:A::/64
!
route-map LOCAL_PREF permit 10
match ipv6 address prefix-list 10
set local-preference 500
!
route-map LOCAL_PREF permit 20
!
route-map CONNECTED permit 10
match interface Serial0/0

```

```
interface Serial0/0
  no ip address
  ipv6 address AB01:CD1:123:C::/64 eui-64
  ipv6 enable
  clock rate 2000000
!
interface Loopback10
  no ip address
  ipv6 address BC01:BC1:10:A::/64 eui-64
  ipv6 enable
!
interface Loopback11
  no ip address
  ipv6 address BC02:BC1:11:A::/64 eui-64
  ipv6 enable
!
interface Loopback12
  no ip address
  ipv6 address BC03:BC1:12:A::/64 eui-64
  ipv6 enable

router bgp 101
  bgp router-id 4.4.4.4
  no bgp default ipv4-unicast
  bgp log-neighbor-changes
  neighbor AB01:CD1:123:C:C601:3FF:FEF0:0 remote-as 123
  neighbor AB01:CD1:123:C:C601:3FF:FEF0:0 ebgp-multihop 5
!
  address-family ipv6
    neighbor AB01:CD1:123:C:C601:3FF:FEF0:0 activate
    network BC01:BC1:10:A::/64
    network BC02:BC1:11:A::/64
    network BC03:BC1:12:A::/64
  exit-address-family
```

## R5

```
interface Serial0/0
  no ip address
  ipv6 address AB01:CD1:123:E::/64 eui-64
  ipv6 enable
  clock rate 2000000
!
interface Loopback10
  no ip address
  ipv6 address BC01:BC1:10:A::/64 eui-64
  ipv6 enable
!
interface Loopback11
  no ip address
  ipv6 address BC02:BC1:11:A::/64 eui-64
  ipv6 enable
!
interface Loopback12
  no ip address
  ipv6 address BC03:BC1:12:A::/64 eui-64
  ipv6 enable
!
router bgp 202
  bgp router-id 5.5.5.5
  no bgp default ipv4-unicast
  bgp log-neighbor-changes
```

```

neighbor AB01:CD1:123:E:C603:3FF:FEF0:0 remote-as 123
neighbor AB01:CD1:123:E:C603:3FF:FEF0:0 ebgp-multihop 5
!
address-family ipv6
 neighbor AB01:CD1:123:E:C603:3FF:FEF0:0 activate
 network BC01:BC1:10:A::/64
 network BC02:BC1:11:A::/64
 network BC03:BC1:12:A::/64
exit-address-family

```

## Verificación

Esta sección proporciona la información que usted puede utilizar para confirmar su configuración trabaja correctamente.

En el r1 del router

### 1. [show ipv6 interface brief](#)

```

Rtr1#show ipv6 interface brief
FastEthernet0/0          [up/up]
 FE80::C601:3FF:FEF0:0
 AB01:CD1:123:A:C601:3FF:FEF0:0
Serial0/0                [up/up]
 FE80::C601:3FF:FEF0:0
 AB01:CD1:123:C:C601:3FF:FEF0:0
FastEthernet0/1         [up/up]
 FE80::C601:3FF:FEF0:1
 AB01:CD1:123:B:C601:3FF:FEF0:1
Serial0/1               [administratively down/down]
Loopback0               [up/up]
 FE80::C601:3FF:FEF0:0
 1111:111:111:A:C601:3FF:FEF0:0

```

### 2. [resumen del unicast del show bgp ipv6](#)

```

Rtr1#show bgp ipv6 unicast summary
BGP router identifier 1.1.1.1, local AS number 123
BGP table version is 9, main routing table version 9
3 network entries using 456 bytes of memory
6 path entries using 456 bytes of memory
4/2 BGP path/bestpath attribute entries using 496 bytes of memory
2 BGP AS-PATH entries using 48 bytes of memory
0 BGP route-map cache entries using 0 bytes of memory
0 BGP filter-list cache entries using 0 bytes of memory
Bitfield cache entries: current 2 (at peak 2) using 64 bytes of memory
BGP using 1520 total bytes of memory
BGP activity 3/0 prefixes, 8/2 paths, scan interval 60 secs

Neighbor          V      AS MsgRcvd MsgSent   TblVer  InQ  OutQ Up/Down  State/PfxRcd
2222:222:222:A:C602:3FF:FEF0:0
                   4      123     45     50       9    0    0 00:41:30      0
3333:333:333:A:C603:3FF:FEF0:0
                   4      123     59     55       9    0    0 00:45:09      3
AB01:CD1:123:C:C604:16FF:FE98:0
                   4      101     56     56       9    0    0 00:50:14      3

```

En el r2 del router

1. [show ipv6 interface brief](#)

```
Rtr2#show ipv6 interface brief
FastEthernet0/0          [up/up]
    FE80::C602:3FF:FEF0:0
    ABO1:CD1:123:A:C602:3FF:FEF0:0
FastEthernet0/1          [up/up]
    FE80::C602:3FF:FEF0:1
    ABO1:CD1:123:D:C602:3FF:FEF0:1
FastEthernet1/0          [administratively down/down]
Loopback0                [up/up]
    FE80::C602:3FF:FEF0:0
    2222:222:222:A:C602:3FF:FEF0:0
```

2. [unicast del show bgp ipv6](#) Note: Cuando la preferencia local no se configura, el r2 del router (Rtr2) tiene r1 del router (Rtr1) como su salto siguiente para todos los direccionamientos aprendidos del IPv6.

```
Rtr2#sh bgp ipv6 unicast
BGP table version is 4, local router ID is 2.2.2.2
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
*  iBC01:BC1:10:A::/64
                        3333:333:333:A:C603:3FF:FEF0:0
                                0      100          0 202 i
*>i
                        1111:111:111:A:C601:3FF:FEF0:0
                                0      100          0 101 i
*  iBC02:BC1:11:A::/64
                        3333:333:333:A:C603:3FF:FEF0:0
                                0      100          0 202 i
*>i
                        1111:111:111:A:C601:3FF:FEF0:0
                                0      100          0 101 i
*  iBC03:BC1:12:A::/64
                        3333:333:333:A:C603:3FF:FEF0:0
                                0      100          0 202 i
*>i
                        1111:111:111:A:C601:3FF:FEF0:0
                                0      100          0 101 i
```

3. [unicast del show bgp ipv6](#) Después de configurar la preferencia local 500 para el prefijo BC01:BC1:10:A::/64, el r2 tiene una diversa salida solamente para este prefijo.



```

Rtr2#show bgp ipv6 unicast
BGP table version is 12, local router ID is 2.2.2.2
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
*>iBC01:BC1:10:A::/64
                   3333:333:333:A:C603:3FF:FEF0:0
                               0   500       0 202 i
*>iBC02:BC1:11:A::/64
                   1111:111:111:A:C601:3FF:FEF0:0
                               0   100       0 101 i
* i                 3333:333:333:A:C603:3FF:FEF0:0
                               0   100       0 202 i
*>iBC03:BC1:12:A::/64
                   1111:111:111:A:C601:3FF:FEF0:0
                               0   100       0 101 i
* i                 3333:333:333:A:C603:3FF:FEF0:0
                               0   100       0 202 i

```

**Note:** El prefijo BC01:BC1:10:A::/64 toma una trayectoria de la salida del router R3 mientras que la preferencia local se fija más alta.

En el router R3

#### 1. [show ipv6 interface brief](#)

```

Rtr3#show ipv6 interface brief
FastEthernet0/0          [up/up]
  FE80::C603:3FF:FEF0:0
  AB01:CD1:123:B:C603:3FF:FEF0:0
Serial0/0                [up/up]
  FE80::C603:3FF:FEF0:0
  AB01:CD1:123:E:C603:3FF:FEF0:0
FastEthernet0/1         [up/up]
  FE80::C603:3FF:FEF0:1
  AB01:CD1:123:D:C603:3FF:FEF0:1
Serial0/1                [administratively down/down]
  unassigned
Loopback0               [up/up]
  FE80::C603:3FF:FEF0:0
  3333:333:333:A:C603:3FF:FEF0:0

```

#### 2. [resumen del unicast del show bgp ipv6](#)

```

Rtr3#show bgp ipv6 unicast summary
BGP router identifier 3.3.3.3, local AS number 123
BGP table version is 4, main routing table version 4
3 network entries using 456 bytes of memory
5 path entries using 380 bytes of memory
3/1 BGP path/bestpath attribute entries using 372 bytes of memory
2 BGP AS-PATH entries using 48 bytes of memory
0 BGP route-map cache entries using 0 bytes of memory
0 BGP filter-list cache entries using 0 bytes of memory
Bitfield cache entries: current 1 (at peak 2) using 32 bytes of memory
BGP using 1288 total bytes of memory
BGP activity 3/0 prefixes, 8/3 paths, scan interval 60 secs

Neighbor          V      AS MsgRcvd MsgSent   TblVer  InQ  OutQ Up/Down  State/PfxRcd
1111:111:111:A:C601:3FF:FEF0:0
                   4      123     57     61       4    0    0 00:47:59      2
2222:222:222:A:C602:3FF:FEF0:0
                   4      123     51     63       4    0    0 00:44:59      0
AB01:CD1:123:E:C605:16FF:FE98:0
                   4      202     55     53       4    0    0 00:49:40      3

```

## [Troubleshooting](#)

Utilice estos comandos para resolver problemas

1. [haga el debug de las actualizaciones del IPv6 BGP](#)
2. [borre el IPv6 BGP {unicast | Multicast}](#)

## [Información Relacionada](#)

- [Página de Soporte de BGP](#)
- [BGP: Preguntas Frecuentes](#)
- [Algoritmo de selección del mejor trayecto BGP](#)
- [Casos Prácticos de BGP](#)
- [Página de soporte del IP versión 6](#)
- [Implementar el Multiprotocol BGP para el IPv6](#)
- [Soporte Técnico y Documentación - Cisco Systems](#)