# Verificación de la Conectividad de Extremo a Extremo a través de un SP de Segment Routing

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## Introducción

Este documento describe el proceso para verificar la conectividad de extremo a extremo a través de un proveedor de servicios (SP) de ruteo de segmentos con el software Cisco IOS®XR.

## Prerequisites

### Requirements

Cisco recomienda que tenga conocimiento sobre estos temas:

- Conocimiento del ruteo IP básico
- Conocimiento de la línea de comandos de Cisco IOS y Cisco IOS XR

### Componentes Utilizados

La información que contiene este documento se basa en las siguientes versiones de software y hardware.

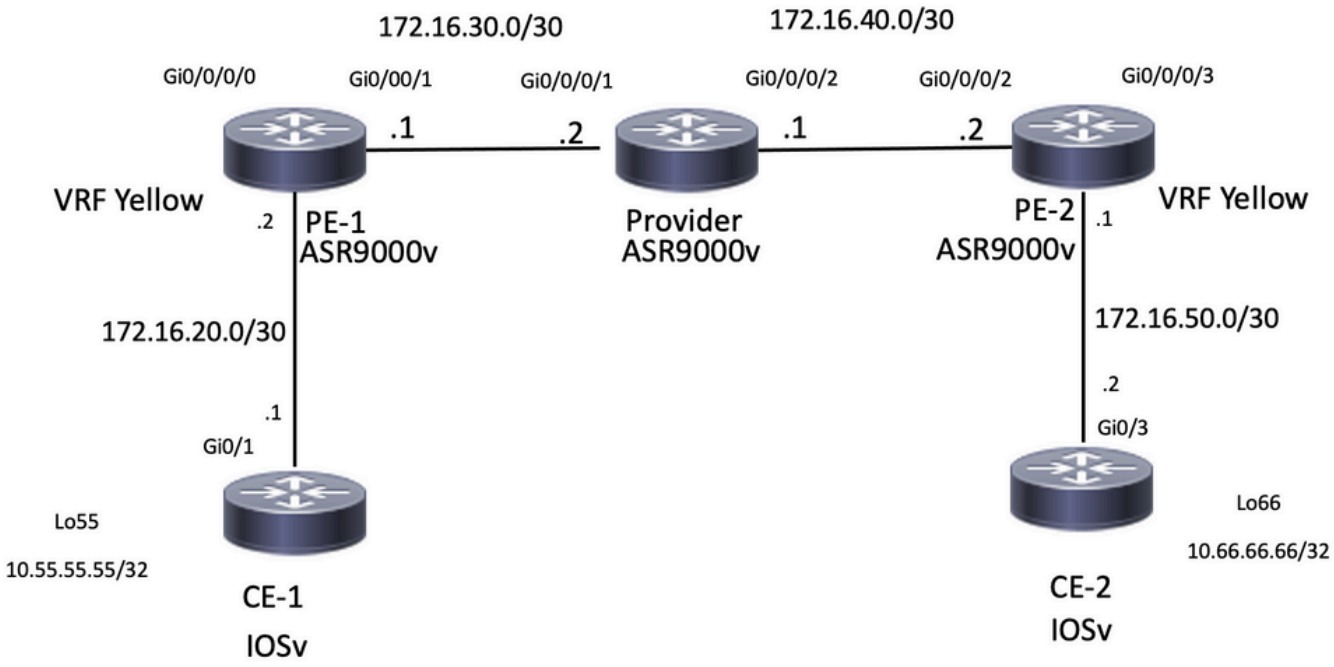
- Router con software Cisco IOS XR
- Router con software Cisco IOS

La información que contiene este documento se creó a partir de los dispositivos en un ambiente de laboratorio específico. Todos los dispositivos que se utilizan en este documento se pusieron en funcionamiento con una configuración verificada (predeterminada). Si tiene una red en vivo, asegúrese de entender el posible impacto de cualquier comando.

### Antecedentes

El propósito de este documento es demostrar la configuración básica para crear una nube de Segment Routing y cómo verificar la conectividad de extremo a extremo en los routers Cisco IOS XR.

# Topología




*Topología de red*

# Verificación inicial

## Configuración de BGP

### CE-1

Loopback55 simula el lado LAN del router CE-1. Puede anunciar este prefijo a través de eBGP al vecino PE-1:

```
CE-1#show run | section r b
router bgp 65535
 bgp router-id 10.1.1.1
 bgp log-neighbor-changes
 redistribute connected
 redistribute eigrp 10
 neighbor 172.16.20.2 remote-as 8181

CE-1#show ip bgp neighbors 172.16.20.2 advertised-routes
BGP table version is 25, local router ID is 10.1.1.1
Status codes: s suppressed, d damped, h history, * valid, > best, i - internal,
              r RIB-failure, S Stale, m multipath, b backup-path, f RT-Filter,
              x best-external, a additional-path, c RIB-compressed,
              t secondary path,
Origin codes: i - IGP, e - EGP, ? - incomplete
RPKI validation codes: V valid, I invalid, N Not found
```

```
     Network          Next Hop            Metric LocPrf Weight Path
 *>   10.1.1.1/32      0.0.0.0                  0         32768 ?
 *>   10.11.11.11/32   192.168.1.1          10880         32768 ?
 *> 10.55.55.55/32 0.0.0.0 0 32768 ?
 *>   172.16.20.0/30   0.0.0.0                  0         32768 ?
 *>   192.168.1.0      0.0.0.0                  0         32768 ?

Total number of prefixes 5
```

## PE-1

Este router recibió el prefijo 10.55.55.55/32 y tiene conectividad, ahora puede anunciarlo en la nube del proveedor de servicios:

```
RP/0/RP0/CPU0:PE-1#show run vrf
Fri Jan 27 15:07:10.465 UTC
vrf Yellow
address-family ipv4 unicast
import route-target
200:200
!
export route-target
200:200
!

RP/0/RP0/CPU0:PE-1#show run router bgp
Fri Jan 27 14:54:33.488 UTC
router bgp 8181
 bgp router-id 10.2.2.2
 address-family ipv4 unicast
 !
 address-family vpnv4 unicast
 !
 neighbor 10.3.3.3
  remote-as 8181
  update-source Loopback0
  address-family vpnv4 unicast
   route-policy PASS in
   route-policy PASS out
  !
 !
 vrf Yellow
  rd 200:200
  address-family ipv4 unicast
  !
  neighbor 172.16.20.1
   remote-as 65535
   address-family ipv4 unicast
    route-policy PASS in
    route-policy PASS out
    as-override
   !

RP/0/RP0/CPU0:PE-1#show bgp vrf Yellow ipv4 unicast neighbors 172.16.20.1 routes
Fri Jan 27 14:54:48.433 UTC
BGP VRF Yellow, state: Active
BGP Route Distinguisher: 200:200
VRF ID: 0x60000001
BGP router identifier 10.2.2.2, local AS number 8181
Non-stop routing is enabled
BGP table state: Active
Table ID: 0xe0000001   RD version: 73
```

```
BGP main routing table version 73
BGP NSR Initial initsync version 2 (Reached)
BGP NSR/ISSU Sync-Group versions 0/0

Status codes: s suppressed, d damped, h history, * valid, > best
              i - internal, r RIB-failure, S stale, N Nexthop-discard
Origin codes: i - IGP, e - EGP, ? - incomplete
   Network            Next Hop            Metric LocPrf Weight Path
Route Distinguisher: 200:200 (default for vrf Yellow)
*> 10.1.1.1/32        172.16.20.1              0             0 65535 ?
*> 10.11.11.11/32     172.16.20.1          10880             0 65535 ?
*> 10.55.55.55/32 172.16.20.1 0 0 65535 ?
*> 172.16.20.0/30     172.16.20.1              0             0 65535 ?
*> 192.168.1.0/24     172.16.20.1              0             0 65535 ?
Processed 5 prefixes, 5 paths

RP/0/RP0/CPU0:PE-1#ping vrf Yellow 10.55.55.55
Fri Jan 27 14:55:06.077 UTC
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.55.55.55, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 4/5/7 ms
```

## CE-2

Loopback66 simula el lado LAN del router CE-2. De manera similar a CE-1, este router anuncia el prefijo vía eBGP al router vecino PE-2.

```
CE-2#show run | section r b
router bgp 65535
 bgp router-id 10.5.5.5
 bgp log-neighbor-changes
 redistribute connected
 redistribute eigrp 10
 neighbor 172.16.50.1 remote-as 8181

CE-2#show ip bgp neighbors 172.16.50.1 advertised-routes
BGP table version is 15, local router ID is 10.5.5.5
Status codes: s suppressed, d damped, h history, * valid, > best, i - internal,
              r RIB-failure, S Stale, m multipath, b backup-path, f RT-Filter,
              x best-external, a additional-path, c RIB-compressed,
              t secondary path,
Origin codes: i - IGP, e - EGP, ? - incomplete
RPKI validation codes: V valid, I invalid, N Not found

     Network          Next Hop            Metric LocPrf Weight Path
 *>   10.5.5.5/32      0.0.0.0                  0         32768 ?
 *>   10.22.22.22/32   192.168.4.1          10880         32768 ?
 *>   10.66.66.66/32   0.0.0.0                  0         32768 ?
 *>   172.16.50.0/30   0.0.0.0                  0         32768 ?
 *>   192.168.4.0      0.0.0.0                  0         32768 ?

Total number of prefixes 5
```

## PE-2

Este router recibió el prefijo 10.66.66.66/32 y ahora puede anunciarse en la nube del proveedor de servicios:

```
RP/0/RP0/CPU0:PE-2#show run vrf
Fri Jan 27 15:07:51.117 UTC
```

```
vrf Yellow
address-family ipv4 unicast
import route-target
200:200
!
export route-target
200:200
!

RP/0/RP0/CPU0:PE-2#show run router bgp
Fri Jan 27 14:59:56.957 UTC
router bgp 8181
 bgp router-id 10.4.4.4
 address-family ipv4 unicast
 !
 address-family vpnv4 unicast
 !
 neighbor 10.3.3.3
  remote-as 8181
  update-source Loopback0
  address-family vpnv4 unicast
   route-policy PASS in
   route-policy PASS out
  !
 !
 vrf Yellow
  rd 200:200
  address-family ipv4 unicast
  !
  neighbor 172.16.50.2
   remote-as 65535
   address-family ipv4 unicast
    route-policy PASS in
    route-policy PASS out
    as-override
   !

RP/0/RP0/CPU0:PE-2#show bgp vrf Yellow ipv4 unicast neighbors 172.16.50.2 routes
Fri Jan 27 15:00:10.383 UTC
BGP VRF Yellow, state: Active
BGP Route Distinguisher: 200:200
VRF ID: 0x60000001
BGP router identifier 10.4.4.4, local AS number 8181
Non-stop routing is enabled
BGP table state: Active
Table ID: 0xe0000001   RD version: 64
BGP main routing table version 64
BGP NSR Initial initsync version 2 (Reached)
BGP NSR/ISSU Sync-Group versions 0/0

Status codes: s suppressed, d damped, h history, * valid, > best
              i - internal, r RIB-failure, S stale, N Nexthop-discard
Origin codes: i - IGP, e - EGP, ? - incomplete
   Network            Next Hop            Metric LocPrf Weight Path
Route Distinguisher: 200:200 (default for vrf Yellow)
*> 10.5.5.5/32        172.16.50.2              0             0 65535 ?
*> 10.22.22.22/32     172.16.50.2          10880             0 65535 ?
*> 10.66.66.66/32     172.16.50.2              0             0 65535 ?
*> 172.16.50.0/30     172.16.50.2              0             0 65535 ?
*> 192.168.4.0/24     172.16.50.2              0             0 65535 ?

Processed 5 prefixes, 5 paths

RP/0/RP0/CPU0:PE-2#ping vrf Yellow 10.66.66.66
```

```
Fri Jan 27 15:00:26.020 UTC
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.66.66.66, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 3/26/120 ms
```

## Estado de información de enrutamiento de PE-1, proveedor y PE-2

Para esta demostración, OSPF se configura como IGP e iBGP.

## PE-1

El vecino OSPF está ACTIVO y la sesión iBGP a 10.3.3.3 que es Reflector de Ruta.

```
RP/0/RP0/CPU0:PE-1#show run router ospf
Fri Jan 27 15:09:23.910 UTC
router ospf 1
 router-id 10.2.2.2
 area 0
  !
  interface GigabitEthernet0/0/0/1
  !
 !
!

RP/0/RP0/CPU0:PE-1#show ospf neighbor
Fri Jan 27 15:09:31.435 UTC

* Indicates MADJ interface
# Indicates Neighbor awaiting BFD session up

Neighbors for OSPF 1

Neighbor ID     Pri   State           Dead Time   Address         Interface
10.3.3.3        1     FULL/BDR        00:00:37    172.16.30.2     GigabitEthernet0/0/0/1
    Neighbor is up for 16:59:30
Total neighbor count: 1
RP/0/RP0/CPU0:PE-1#show bgp vpnv4 unicast summary
Fri Jan 27 15:09:37.760 UTC
BGP router identifier 10.2.2.2, local AS number 8181
BGP generic scan interval 60 secs
Non-stop routing is enabled
BGP table state: Active
Table ID: 0x0   RD version: 0
BGP main routing table version 73
BGP NSR Initial initsync version 2 (Reached)
BGP NSR/ISSU Sync-Group versions 0/0
BGP scan interval 60 secs
BGP is operating in STANDALONE mode.
Process       RcvTblVer   bRIB/RIB   LabelVer  ImportVer  SendTblVer  StandbyVer
Speaker              73         73         73         73          73           0

Neighbor        Spk    AS MsgRcvd MsgSent   TblVer  InQ OutQ  Up/Down  St/PfxRcd
10.3.3.3          0  8181    1010     997       73    0    0 16:24:45          5
```

## Router del proveedor

En este dispositivo podemos confirmar que actúa como reflector de ruta y que la sesión IBGP se establece con los vecinos 10.2.2.2 y 10.4.4.4

```
RP/0/RP0/CPU0:Provider#show run router ospf
Fri Jan 27 15:19:33.250 UTC
router ospf 1
router-id 10.3.3.3
area 0
!
interface GigabitEthernet0/0/0/1
!
interface GigabitEthernet0/0/0/2
!

RP/0/RP0/CPU0:Provider#show run router bgp
Fri Jan 27 15:11:08.321 UTC
router bgp 8181
 bgp router-id 10.3.3.3
 address-family ipv4 unicast
 !
 address-family vpnv4 unicast
 !
 neighbor-group IBGP
  remote-as 8181
  update-source Loopback0
 !
 neighbor 10.2.2.2
  use neighbor-group IBGP
  address-family vpnv4 unicast
   route-policy PASS in
   route-reflector-client
   route-policy PASS out
   next-hop-self
  !
 !
 neighbor 10.4.4.4
  use neighbor-group IBGP
  address-family vpnv4 unicast
   route-policy PASS in
   route-reflector-client
   route-policy PASS out
   next-hop-self
  !

RP/0/RP0/CPU0:Provider#show bgp vpnv4 unicast summary
Fri Jan 27 15:11:19.263 UTC
BGP router identifier 10.3.3.3, local AS number 8181
BGP generic scan interval 60 secs
Non-stop routing is enabled
BGP table state: Active
Table ID: 0x0   RD version: 0
BGP main routing table version 25
BGP NSR Initial initsync version 1 (Reached)
BGP NSR/ISSU Sync-Group versions 0/0
BGP scan interval 60 secs
BGP is operating in STANDALONE mode.
Process       RcvTblVer   bRIB/RIB   LabelVer  ImportVer  SendTblVer  StandbyVer
Speaker              25         25         25         25          25           0

Neighbor        Spk    AS MsgRcvd MsgSent   TblVer  InQ OutQ  Up/Down  St/PfxRcd
10.2.2.2          0  8181     998    1011       25    0    0 16:26:27          5
10.4.4.4          0  8181     997    1009       25    0    0 16:24:25          5
```

## PE-2

El vecino OSPF está activo y la sesión IBGP a 10.3.3.3 es el Reflector de Ruta.

```
RP/0/RP0/CPU0:PE-2#show run router ospf
Fri Jan 27 15:12:47.741 UTC
router ospf 1
 router-id 10.4.4.4
 area 0
  !
  interface GigabitEthernet0/0/0/2
  !

RP/0/RP0/CPU0:PE-2#show ospf neighbor
Fri Jan 27 15:12:55.229 UTC
* Indicates MADJ interface
# Indicates Neighbor awaiting BFD session up
Neighbors for OSPF 1
Neighbor ID     Pri   State           Dead Time   Address         Interface
10.3.3.3        1     FULL/DR         00:00:35    172.16.40.1     GigabitEthernet0/0/0/2
    Neighbor is up for 17:01:21
Total neighbor count: 1

RP/0/RP0/CPU0:PE-2#show bgp vpnv4 unicast summary
Fri Jan 27 15:13:01.911 UTC
BGP router identifier 10.4.4.4, local AS number 8181
BGP generic scan interval 60 secs
Non-stop routing is enabled
BGP table state: Active
Table ID: 0x0   RD version: 0
BGP main routing table version 64
BGP NSR Initial initsync version 2 (Reached)
BGP NSR/ISSU Sync-Group versions 0/0
BGP scan interval 60 secs
BGP is operating in STANDALONE mode.
Process       RcvTblVer   bRIB/RIB   LabelVer  ImportVer  SendTblVer  StandbyVer
Speaker              64         64         64         64          64           0

Neighbor        Spk    AS MsgRcvd MsgSent   TblVer  InQ OutQ  Up/Down  St/PfxRcd
10.3.3.3          0  8181    1011     998       64    0    0 16:26:08          5

RP/0/RP0/CPU0:PE-2#ping 10.2.2.2 source loopback0
Fri Jan 27 15:13:09.728 UTC
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.2.2.2, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 9/21/67 ms

RP/0/RP0/CPU0:PE-2#ping 10.3.3.3 source loopback0
Fri Jan 27 15:13:16.696 UTC
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.3.3.3, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 5/6/7 ms
```

## Configuración de Segment Routing

### PE-1

```
RP/0/RP0/CPU0:PE-1#show run router ospf
Fri Jan 27 16:15:56.479 UTC
router ospf 1
 router-id 10.2.2.2
 segment-routing mpls
 area 0
```

```
  segment-routing mpls
  interface Loopback0
   prefix-sid index 15
  !
```

### Proveedor

```
RP/0/RP0/CPU0:Provider#show run router ospf
Fri Jan 27 16:17:09.471 UTC
router ospf 1
 router-id 10.3.3.3
 segment-routing mpls
 area 0
  segment-routing mpls
  interface Loopback0
   prefix-sid index 16
  !
```

### PE-2

```
RP/0/RP0/CPU0:PE-2#show run router ospf
Fri Jan 27 16:18:11.090 UTC
router ospf 1
 router-id 10.4.4.4
 segment-routing mpls
 area 0
  segment-routing mpls
  interface Loopback0
   prefix-sid index 17
  !
```

## Verificaciones finales

CE-1 puede alcanzar la interfaz loopback66 ubicada en el router CE-2. El siguiente resultado de Traceroute muestra que el paquete toma la trayectoria del switch de etiqueta cuando está destinado al prefijo 10.66.66.66. También se puede observar que la etiqueta utiliza el prefijo-sid 16017 cuando pasa a través del router PE-2:

```
CE-1#ping 10.66.66.66 source loopback0
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.66.66.66, timeout is 2 seconds:
Packet sent with a source address of 10.1.1.1
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 9/13/32 ms

CE-1#traceroute 10.66.66.66 source loopback0
Type escape sequence to abort.
Tracing the route to 10.66.66.66
VRF info: (vrf in name/id, vrf out name/id)
  1 172.16.20.2 6 msec 5 msec 5 msec
  2 172.16.30.2 [MPLS: Labels 16017/24003 Exp 0] 12 msec 13 msec 16 msec 3 172.16.40.2 [MPLS:
Label 24003 Exp 0] 15 msec 13 msec 12 msec
  4 172.16.50.2 [AS 8181] 13 msec 11 msec *
```

Dado que la configuración no utilizó la opción absolute, las etiquetas comenzaron en valores 16000 y agregaron el prefijo-sid configurado para Segment Routing.

```
RP/0/RP0/CPU0:PE-1#show cef 10.3.3.3/32
Fri Jan 27 21:32:42.813 UTC
10.3.3.3/32, version 43, labeled SR, internal 0x1000001 0x8110 (ptr 0xe3f6a00) [1], 0x600
(0xe593918), 0xa20 (0xee6e4b8)
 Updated Jan 26 23:21:30.314
 remote adjacency to GigabitEthernet0/0/0/1
 Prefix Len 32, traffic index 0, precedence n/a, priority 1
  gateway array (0xe3fbda8) reference count 3, flags 0x68, source rib (7), 0 backups
                [3 type 4 flags 0x8401 (0xeeb1648) ext 0x0 (0x0)]
  LW-LDI[type=1, refc=1, ptr=0xe593918, sh-ldi=0xeeb1648]
  gateway array update type-time 1 Jan 26 23:21:30.314
 LDI Update time Jan 26 23:21:30.315
 LW-LDI-TS Jan 26 23:21:30.315
   via 172.16.30.2/32, GigabitEthernet0/0/0/1, 8 dependencies, weight 0, class 0 [flags 0x0]
    path-idx 0 NHID 0x0 [0xf427148 0xf4271e0]
    next hop 172.16.30.2/32
    remote adjacency
     local label 16016      labels imposed {ImplNull}

    Load distribution: 0 (refcount 3)

    Hash  OK  Interface                 Address
    0     Y   GigabitEthernet0/0/0/1    remote

RP/0/RP0/CPU0:PE-1#show cef 10.4.4.4/32
Fri Jan 27 21:29:36.990 UTC
10.4.4.4/32, version 45, labeled SR, internal 0x1000001 0x8110 (ptr 0xe3f65c0) [1], 0x600
(0xe593e70), 0xa28 (0xee6e508)
 Updated Jan 26 23:21:47.181
 remote adjacency to GigabitEthernet0/0/0/1
 Prefix Len 32, traffic index 0, precedence n/a, priority 1
  gateway array (0xe3fbe90) reference count 3, flags 0x68, source rib (7), 0 backups
                [2 type 5 flags 0x8401 (0xeeb16a8) ext 0x0 (0x0)]
  LW-LDI[type=5, refc=3, ptr=0xe593e70, sh-ldi=0xeeb16a8]
  gateway array update type-time 1 Jan 26 23:21:47.182
 LDI Update time Jan 26 23:21:47.182
 LW-LDI-TS Jan 26 23:21:47.182
   via 172.16.30.2/32, GigabitEthernet0/0/0/1, 6 dependencies, weight 0, class 0 [flags 0x0]
    path-idx 0 NHID 0x0 [0xf4271e0 0x0]
    next hop 172.16.30.2/32
    remote adjacency
     local label 16017      labels imposed {16017}

    Load distribution: 0 (refcount 2)

    Hash  OK  Interface                 Address
    0     Y   GigabitEthernet0/0/0/1    remote
```

Desde el otro lado, CE-2 también puede alcanzar el loopback55 ubicado en el router CE-1:

```
CE-2#ping 10.55.55.55 source loopback66
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.55.55.55, timeout is 2 seconds:
Packet sent with a source address of 10.66.66.66
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 11/12/15 ms

CE-2#traceroute 10.55.55.55 source loopback66
Type escape sequence to abort.
Tracing the route to 10.55.55.55
VRF info: (vrf in name/id, vrf out name/id)
  1 172.16.50.1 6 msec 5 msec 4 msec
```

```
  2 172.16.40.1 [MPLS: Labels 16015/24003 Exp 0] 9 msec 16 msec 10 msec
  3 172.16.30.1 [MPLS: Label 24003 Exp 0] 10 msec 13 msec 8 msec
  4 172.16.20.1 [AS 8181] 11 msec 7 msec *
```

## Etiquetas MPLS

En la siguiente salida podemos confirmar que las etiquetas de ruteo de segmentos se utilizan para conmutar el tráfico de extremo a extremo.

RP/0/RP0/CPU0:PE-1#**show mpls forwarding**

```
Fri Jan 27 20:32:13.697 UTC
Local  Outgoing    Prefix             Outgoing     Next Hop        Bytes
Label  Label       or ID              Interface                    Switched
------ ----------- ------------------ ------------ --------------- ------------
16016  Pop         SR Pfx (idx 16)    Gi0/0/0/1    172.16.30.2     126880
16017  16017       SR Pfx (idx 17)    Gi0/0/0/1    172.16.30.2     17292
24000  Pop         SR Adj (idx 0)     Gi0/0/0/1    172.16.30.2     0
24001  Aggregate   172.16.20.0/30[V]  Yellow                       11384
24002  Unlabelled  192.168.1.0/24[V]  Gi0/0/0/0    172.16.20.1     0
24003  Unlabelled  10.55.55.55/32[V]  Gi0/0/0/0    172.16.20.1     0
24004  Unlabelled  10.11.11.11/32[V]  Gi0/0/0/0    172.16.20.1     0
24005  Unlabelled  10.1.1.1/32[V]     Gi0/0/0/0    172.16.20.1     0
```

RP/0/RP0/CPU0:Provider#**show mpls forwarding**

```
Fri Jan 27 20:33:14.878 UTC
Local  Outgoing    Prefix             Outgoing     Next Hop        Bytes
Label  Label       or ID              Interface                    Switched
------ ----------- ------------------ ------------ --------------- ------------
16015  Pop         SR Pfx (idx 15)    Gi0/0/0/1    172.16.30.1     151687
16017  Pop         SR Pfx (idx 17)    Gi0/0/0/2    172.16.40.2     147701
24000  Pop         SR Adj (idx 0)     Gi0/0/0/1    172.16.30.1     0
24001  Pop         SR Adj (idx 0)     Gi0/0/0/2    172.16.40.2     0
```

RP/0/RP0/CPU0:PE-2#**show mpls forwarding**

```
Fri Jan 27 20:33:49.201 UTC
Local  Outgoing    Prefix             Outgoing     Next Hop        Bytes
Label  Label       or ID              Interface                    Switched
------ ----------- ------------------ ------------ --------------- ------------
16015  16015       SR Pfx (idx 15)    Gi0/0/0/2    172.16.40.1     25304
16016  Pop         SR Pfx (idx 16)    Gi0/0/0/2    172.16.40.1     128619
24000  Pop         SR Adj (idx 0)     Gi0/0/0/2    172.16.40.1     0
24001  Aggregate   172.16.50.0/30[V]  Yellow                       1200
24002  Unlabelled  192.168.4.0/24[V]  Gi0/0/0/3    172.16.50.2     0
24003  Unlabelled  10.66.66.66/32[V]  Gi0/0/0/3    172.16.50.2     0
24004  Unlabelled  10.5.5.5/32[V]     Gi0/0/0/3    172.16.50.2     0
24005  Unlabelled  10.22.22.22/32[V]  Gi0/0/0/3    172.16.50.2     0
```

```
CE-2#show ip bgp neighbors 172.16.50.1 advertised-routes BGP table version is 5, local router ID
is 5.5.5.5 Status codes: s suppressed, d damped, h history, * valid, > best, i - internal, r
RIB-failure, S Stale, m multipath, b backup-path, f RT-Filter, x best-external, a additional-
path, c RIB-compressed, t secondary path, Origin codes: i - IGP, e - EGP, ? - incomplete RPKI
validation codes: V valid, I invalid, N Not found Network Next Hop Metric LocPrf Weight Path *>
5.5.5.5/32 0.0.0.0 0 32768 ? *> 22.22.22.22/32 192.168.4.1 10880 32768 ? *> 172.16.50.0/30
0.0.0.0 0 32768 ? *> 192.168.4.0 0.0.0.0 0 32768 ? Total number of prefixes 4
```

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