

Verifica della connettività end-to-end su un SP di routing dei segmenti

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Introduzione

In questo documento viene descritto il processo per verificare la connettività end-to-end tra un provider di servizi di routing dei segmenti (SP) e il software Cisco IOS®XR.

Prerequisiti

Requisiti

Cisco raccomanda la conoscenza dei seguenti argomenti:

- Conoscenza del routing IP di base
- Conoscenza della riga di comando di Cisco IOS e Cisco IOS XR

Componenti usati

Le informazioni fornite in questo documento si basano sulle seguenti versioni software e hardware:

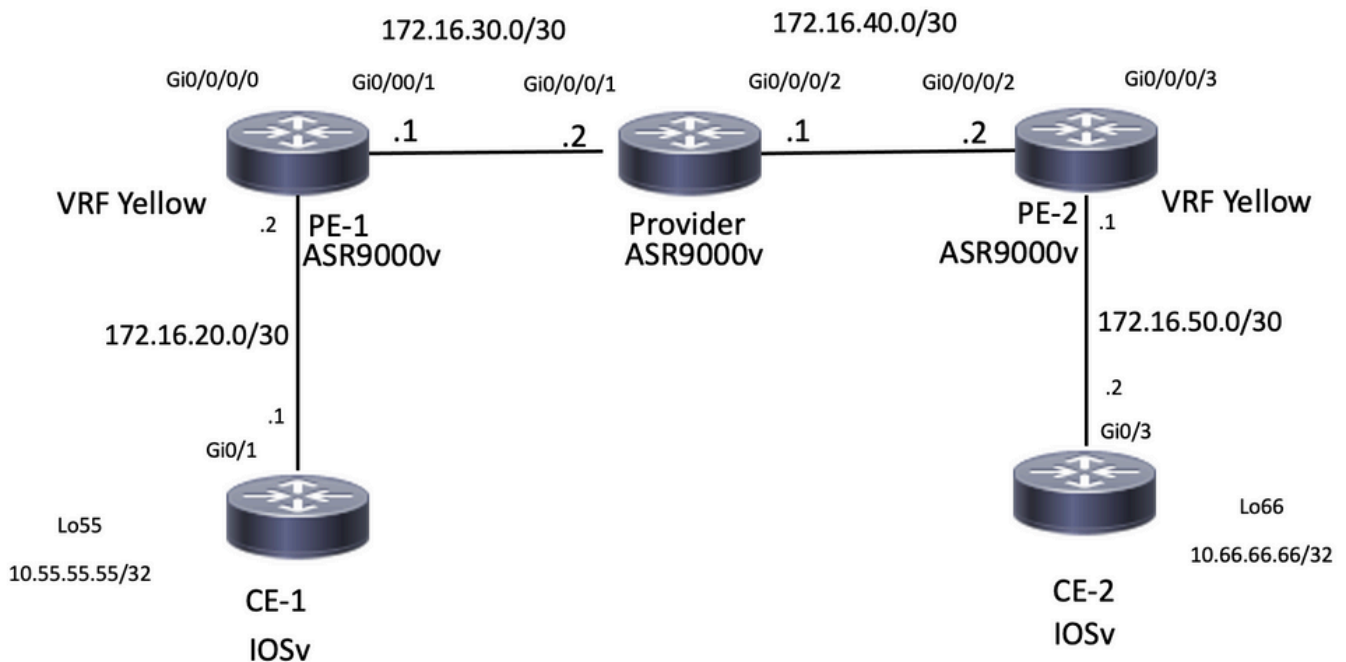
- Router con software Cisco IOS XR
- Router con software Cisco IOS

Le informazioni discusse in questo documento fanno riferimento a dispositivi usati in uno specifico ambiente di emulazione. Su tutti i dispositivi menzionati nel documento la configurazione è stata ripristinata ai valori predefiniti. Se la rete è operativa, valutare attentamente eventuali conseguenze derivanti dall'uso dei comandi.

Premesse

Lo scopo di questo documento è dimostrare la configurazione di base per creare un cloud di routing dei segmenti e come verificare la connettività end-to-end sui router Cisco IOS XR.

Topologia



Topologia della rete

Verifica iniziale

Configurazione BGP

CE-1

Loopback55 simula il lato LAN del router CE-1. È possibile annunciare questo prefisso tramite eBGP al router adiacente 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

Questo router ha ricevuto il prefisso 10.55.55.55/32 e dispone di connettività, ora è in grado di annunciarlo nel cloud di Service Provider:

```
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 il lato LAN del router CE-2. Analogamente a CE-1, questo router annuncia il prefisso tramite eBGP al router adiacente 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                0 32768 ?
*> 10.22.22.22/32 192.168.4.1     10880            0 32768 ?
*> 10.66.66.66/32 0.0.0.0          0                0 32768 ?
*> 172.16.50.0/30 0.0.0.0          0                0 32768 ?
*> 192.168.4.0   0.0.0.0          0                0 32768 ?
```

```
Total number of prefixes 5
```

PE-2

Questo router ha ricevuto il prefisso 10.66.66.66/32 e ora è in grado di annunciare il cloud di Service Provider:

```
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

Stato delle informazioni di routing da PE-1, Provider e PE-2

Per questa dimostrazione, OSPF è configurato come IGP e iBGP.

PE-1

Il router adiacente OSPF è UP e la sessione iBGP alla versione 10.3.3.3 che è Route Reflector.

```
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

Provider Router

Su questo dispositivo possiamo confermare che agisce come reflector di route e che la sessione iBGP viene stabilita con i vicini 10.2.2.2 e 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

Il router adiacente OSPF è attivo e la sessione IBGP alla versione 10.3.3.3, che è il Route Reflector.

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
```

Configurazione routing segmento

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
!
```

Fornitore

```
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
  !
```

Verifiche finali

CE-1 può raggiungere l'interfaccia loopback66 situata sul router CE-2. Il successivo output del comando Traceroute mostra che il pacchetto accetta il percorso dell'interruttore di etichetta quando è destinato al prefisso 10.66.66. Si può anche osservare che l'etichetta usa il prefisso-sid 16017 mentre attraversa il 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 *
```

Poiché nella configurazione non è stata utilizzata l'opzione assoluta, le etichette hanno avuto inizio con 16000 valori e hanno aggiunto il prefisso-sid configurato per il routing dei segmenti.

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 (0xe3fbd8) 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

Dall'altro lato, CE-2 può anche raggiungere il loopback55 situato sul 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 *

```

Etichette MPLS

Nell'output successivo è possibile verificare che le etichette di routing dei segmenti vengano utilizzate per commutare il traffico da un'estremità all'altra.

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

Fri Jan 27 20:32:13.697 UTC

Local Label	Outgoing Label	Prefix or ID	Outgoing Interface	Next Hop	Bytes 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 Label	Outgoing Label	Prefix or ID	Outgoing Interface	Next Hop	Bytes 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 Label	Outgoing Label	Prefix or ID	Outgoing Interface	Next Hop	Bytes 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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