

LAB 1: Basic MPLS with OSPF

Task 1: Initial configuration on router A1, A2, A3, A4, PE1, PE2, PE3, PE4 and P:

A1:

```
interface Loopback1
ip address 203.1.0.1 255.255.255.255
exit
interface Loopback2
ip address 203.1.1.1 255.255.255.0
exit
interface Ethernet0/0
description "Link to PE1"
ip address 150.1.31.2 255.255.255.0
no shutdown
exit
```

A2:

```
interface Loopback1
ip address 203.1.0.2 255.255.255.255
exit
interface Loopback2
ip address 203.1.2.1 255.255.255.0
exit
interface Ethernet0/0
description "Link to PE2"
ip address 150.1.31.6 255.255.255.252
no shutdown
exit
```

A3:

```
interface Loopback1
ip address 203.1.0.3 255.255.255.255
exit
interface Loopback2
ip address 203.1.3.1 255.255.255.0
exit
interface Ethernet0/0
description "Link to PE3"
```

```
ip address 150.1.31.14 255.255.255.252
no shutdown
exit
```

A4:

```
interface Loopback1
  ip address 203.1.0.4 255.255.255.255
exit
interface Loopback2
  ip address 203.1.4.1 255.255.255.0
exit
interface Ethernet0/0
  description "Link to PE4"
  ip address 150.1.31.18 255.255.255.252
no shutdown
exit
```

PE1:

```
interface Loopback0
  ip address 192.168.3.1 255.255.255.255
exit
interface Ethernet0/0
  description "Link to A1"
  ip address 150.1.31.1 255.255.255.252
no shutdown
exit
interface Serial2/0
  description "Link to PE2"
  ip address 192.168.3.22 255.255.255.252
no shutdown
exit
```

PE2:

```
interface Loopback0
  ip address 192.168.3.2 255.255.255.255
exit
interface Ethernet0/0
  description "Link to A2"
  ip address 150.1.31.5 255.255.255.252
no shutdown
exit
interface Serial2/0
  description "Link to PE1"
  ip address 192.168.3.21 255.255.255.252
no shutdown
```

```
exit

interface Serial2/1
description "Link to P"
ip address 192.168.3.18 255.255.255.252
no shutdown
exit
```

```
PE3:
interface Loopback0
ip address 192.168.3.3 255.255.255.255
exit
interface Ethernet0/0
description "Link to A3"
ip address 150.1.31.13 255.255.255.252
no shutdown
exit
interface Serial2/0
description "Link to P"
ip address 192.168.3.13 255.255.255.252
no shutdown
exit
interface Serial2/1
description "Link to PE4"
ip address 192.168.3.10 255.255.255.252
no shutdown
exit
```

```
PE4:
interface Loopback0
ip address 192.168.3.4 255.255.255.255
exit
interface Ethernet0/0
description "Link to A4"
ip address 150.1.31.17 255.255.255.252
no shutdown
exit
interface Serial2/1
description "Link to PE4"
ip address 192.168.3.9 255.255.255.252
no shutdown
exit
```

```
P:
interface Loopback0
ip address 192.168.3.5 255.255.255.255
exit
interface Serial2/0
description " Link to PE3"
ip address 192.168.3.14 255.255.255.252
no shutdown
exit
interface Serial2/1
description " Link to PE2"
ip address 192.168.3.17 255.255.255.252
no shutdown
exit
```

Task 2: Enable internal routes with OSPF

Step 1: Configure OSPF on all Provider edge and core router to learn internal routes.

Note: configure on PE1, PE2, PE3, PE4 and P router.

```
router ospf 1
network 192.168.3.0 255.255.255.0 area 0
exit
```

Step 2: Configure static routes on all CE routers.

```
A1:
ip route 0.0.0.0 0.0.0.0 150.1.31.1
```

```
A2:
ip route 0.0.0.0 0.0.0.0 150.1.31.5
```

```
A3:
ip route 0.0.0.0 0.0.0.0 150.1.31.13
```

```
A4:
ip route 0.0.0.0 0.0.0.0 150.1.31.17
```

Verification:

! (To check all routes.)

Note: Nine routes of 192.168.3.0 networks should be seen in routing table.

PE1# show ip route

Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
E1 - OSPF external type 1, E2 - OSPF external type 2
i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
ia - IS-IS inter area, * - candidate default, U - per-user static route
o - ODR, P - periodic downloaded static route, H - NHRP, I - LISP
+ - replicated route, % - next hop override

Gateway of last resort is not set

150.1.0.0/16 is variably subnetted, 2 subnets, 2 masks
C 150.1.31.0/24 is directly connected, Ethernet0/0
L 150.1.31.1/32 is directly connected, Ethernet0/0
192.168.3.0/24 is variably subnetted, 10 subnets, 2 masks
C 192.168.3.1/32 is directly connected, Loopback1
O 192.168.3.2/32 [110/65] via 192.168.3.21, 00:03:59, Serial2/0
O 192.168.3.3/32 [110/193] via 192.168.3.21, 00:00:16, Serial2/0
O 192.168.3.4/32 [110/257] via 192.168.3.21, 00:00:16, Serial2/0
O 192.168.3.5/32 [110/129] via 192.168.3.21, 00:00:26, Serial2/0
O 192.168.3.8/30 [110/256] via 192.168.3.21, 00:00:16, Serial2/0
O 192.168.3.12/30 [110/192] via 192.168.3.21, 00:00:26, Serial2/0
O 192.168.3.16/30 [110/128] via 192.168.3.21, 00:03:59, Serial2/0
C 192.168.3.20/30 is directly connected, Serial2/0
L 192.168.3.22/32 is directly connected, Serial2/0

PE2#show ip route

Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
E1 - OSPF external type 1, E2 - OSPF external type 2
i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
ia - IS-IS inter area, * - candidate default, U - per-user static route
o - ODR, P - periodic downloaded static route, H - NHRP, I - LISP
+ - replicated route, % - next hop override

Gateway of last resort is not set

```
150.1.0.0/16 is variably subnetted, 2 subnets, 2 masks
C    150.1.31.4/30 is directly connected, Ethernet0/0
L    150.1.31.5/32 is directly connected, Ethernet0/0
    192.168.3.0/24 is variably subnetted, 11 subnets, 2 masks
O    192.168.3.1/32 [110/65] via 192.168.3.22, 00:08:20, Serial2/0
C    192.168.3.2/32 is directly connected, Loopback0
O    192.168.3.3/32 [110/129] via 192.168.3.17, 00:05:26, Serial2/1
O    192.168.3.4/32 [110/193] via 192.168.3.17, 00:05:26, Serial2/1
O    192.168.3.5/32 [110/65] via 192.168.3.17, 00:05:36, Serial2/1
O    192.168.3.8/30 [110/192] via 192.168.3.17, 00:05:26, Serial2/1
O    192.168.3.12/30 [110/128] via 192.168.3.17, 00:05:36, Serial2/1
C    192.168.3.16/30 is directly connected, Serial2/1
L    192.168.3.18/32 is directly connected, Serial2/1
C    192.168.3.20/30 is directly connected, Serial2/0
L    192.168.3.21/32 is directly connected, Serial2/0
```

```
PE3#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, H - NHRP, I - LISP
       + - replicated route, % - next hop override
```

Gateway of last resort is not set

```
150.1.0.0/16 is variably subnetted, 2 subnets, 2 masks
C    150.1.31.12/30 is directly connected, Ethernet0/0
L    150.1.31.13/32 is directly connected, Ethernet0/0
    192.168.3.0/24 is variably subnetted, 11 subnets, 2 masks
O    192.168.3.1/32 [110/193] via 192.168.3.14, 00:07:22, Serial2/0
O    192.168.3.2/32 [110/129] via 192.168.3.14, 00:07:22, Serial2/0
C    192.168.3.3/32 is directly connected, Loopback0
O    192.168.3.4/32 [110/65] via 192.168.3.9, 00:09:18, Serial2/1
O    192.168.3.5/32 [110/65] via 192.168.3.14, 00:07:32, Serial2/0
C    192.168.3.8/30 is directly connected, Serial2/1
L    192.168.3.10/32 is directly connected, Serial2/1
C    192.168.3.12/30 is directly connected, Serial2/0
L    192.168.3.13/32 is directly connected, Serial2/0
O    192.168.3.16/30 [110/128] via 192.168.3.14, 00:07:32, Serial2/0
O    192.168.3.20/30 [110/192] via 192.168.3.14, 00:07:22, Serial2/0
```

PE4#show ip route

Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
E1 - OSPF external type 1, E2 - OSPF external type 2
i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
ia - IS-IS inter area, * - candidate default, U - per-user static route
o - ODR, P - periodic downloaded static route, H - NHRP, I - LISP
+ - replicated route, % - next hop override

Gateway of last resort is not set

150.1.0.0/16 is variably subnetted, 2 subnets, 2 masks
C 150.1.31.16/30 is directly connected, Ethernet0/0
L 150.1.31.17/32 is directly connected, Ethernet0/0
192.168.3.0/24 is variably subnetted, 10 subnets, 2 masks
O 192.168.3.1/32 [110/257] via 192.168.3.10, 00:09:51, Serial2/1
O 192.168.3.2/32 [110/193] via 192.168.3.10, 00:09:51, Serial2/1
O 192.168.3.3/32 [110/65] via 192.168.3.10, 00:11:02, Serial2/1
C 192.168.3.4/32 is directly connected, Loopback0
O 192.168.3.5/32 [110/129] via 192.168.3.10, 00:10:01, Serial2/1
C 192.168.3.8/30 is directly connected, Serial2/1
L 192.168.3.9/32 is directly connected, Serial2/1
O 192.168.3.12/30 [110/128] via 192.168.3.10, 00:11:02, Serial2/1
O 192.168.3.16/30 [110/192] via 192.168.3.10, 00:10:01, Serial2/1
O 192.168.3.20/30 [110/256] via 192.168.3.10, 00:09:51, Serial2/1

P#show ip route

Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
E1 - OSPF external type 1, E2 - OSPF external type 2
i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
ia - IS-IS inter area, * - candidate default, U - per-user static route
o - ODR, P - periodic downloaded static route, H - NHRP, I - LISP
+ - replicated route, % - next hop override

Gateway of last resort is not set

192.168.3.0/24 is variably subnetted, 11 subnets, 2 masks
O 192.168.3.1/32 [110/129] via 192.168.3.18, 00:12:58, Serial2/1
O 192.168.3.2/32 [110/65] via 192.168.3.18, 00:12:58, Serial2/1
O 192.168.3.3/32 [110/65] via 192.168.3.13, 00:12:58, Serial2/0

```
O 192.168.3.4/32 [110/129] via 192.168.3.13, 00:12:58, Serial2/0
C 192.168.3.5/32 is directly connected, Loopback0
O 192.168.3.8/30 [110/128] via 192.168.3.13, 00:12:58, Serial2/0
C 192.168.3.12/30 is directly connected, Serial2/0
L 192.168.3.14/32 is directly connected, Serial2/0
C 192.168.3.16/30 is directly connected, Serial2/1
L 192.168.3.17/32 is directly connected, Serial2/1
O 192.168.3.20/30 [110/128] via 192.168.3.18, 00:12:58, Serial2/1
```

TASK 3: Enable mpls setup

Step 1: Configure MPLS on PE1, PE2, PE3, PE4 and P router.

```
ip cef ! (Enable CEF switching)
mpls label protocol ldp ! (Select LDP protocol)
mpls ldp router-id loopback 0 ! (Lo 0 as the interface to be used for
LDP updates.)
```

Step 3: Enable MPLS on all core interface.

Note: Do not configure MPLS on any interface towards customers or external backbones.

```
PE1:
interface s2/0
mpls ip
exit

PE2:
interface range s2/0-1
mpls ip
exit

PE3:
interface range s2/0-1
mpls ip
exit

PE4:
interface s2/1
mpls ip
exit
```

```
P:
interface range s2/0-1
mpls ip
exit
```

Step 4: MPLS verification commands.

```
P#show mpls forwarding-table
! (See if labels have been assigned for each route)
```

Local Label	Outgoing Label	Prefix or Tunnel Id	Bytes Switched	Label	Outgoing interface	Next Hop
16	Pop Label	192.168.3.20/30	0		Se2/1	point2point
17	Pop Label	192.168.3.8/30	0		Se2/0	point2point
18	16	150.1.31.0/24	0		Se2/1	point2point
19	23	150.1.31.16/30	0		Se2/0	point2point
20	Pop Label	150.1.31.12/30	0		Se2/0	point2point
21	Pop Label	150.1.31.4/30	0		Se2/1	point2point
22	24	192.168.3.4/32	0		Se2/0	point2point
23	Pop Label	192.168.3.3/32	0		Se2/0	point2point
24	Pop Label	192.168.3.2/32	0		Se2/1	point2point
25	19	192.168.3.1/32	0		Se2/1	point2point

```
P#show mpls forwarding-table details
! (Details about mpls labels)
```

Local Label	Outgoing Label	Prefix or Tunnel Id	Bytes Switched	Label	Outgoing interface	Next Hop
16	Pop Label	192.168.3.20/30	0		Se2/1	point2point
	MAC/Encaps=4/4, MRU=1504, Label Stack{}					
	0F008847					
	No output feature configured					
17	Pop Label	192.168.3.8/30	0		Se2/0	point2point
	MAC/Encaps=4/4, MRU=1504, Label Stack{}					
	0F008847					
	No output feature configured					
18	16	150.1.31.0/24	0		Se2/1	point2point
	MAC/Encaps=4/8, MRU=1500, Label Stack{16}					
	0F008847 00010000					
	No output feature configured					
19	23	150.1.31.16/30	0		Se2/0	point2point
	MAC/Encaps=4/8, MRU=1500, Label Stack{23}					
	0F008847 00017000					
	No output feature configured					
20	Pop Label	150.1.31.12/30	0		Se2/0	point2point
	MAC/Encaps=4/4, MRU=1504, Label Stack{}					
	0F008847					

```
No output feature configured
21   Pop Label 150.1.31.4/30  0      Se2/1   point2point
    MAC/Encaps=4/4, MRU=1504, Label Stack{ }
    0F008847
No output feature configured
22   24      192.168.3.4/32  0      Se2/0   point2point
    MAC/Encaps=4/8, MRU=1500, Label Stack{24}
    0F008847 00018000
No output feature configured
23   Pop Label 192.168.3.3/32  0      Se2/0   point2point
    MAC/Encaps=4/4, MRU=1504, Label Stack{ }
    0F008847
No output feature configured
24   Pop Label 192.168.3.2/32  0      Se2/1   point2point
    MAC/Encaps=4/4, MRU=1504, Label Stack{ }
    0F008847
No output feature configured
25   19      192.168.3.1/32  0      Se2/1   point2point
    MAC/Encaps=4/8, MRU=1500, Label Stack{19}
    0F008847 00013000
No output feature configured
```

P#show mpls interface
! (Shows MPLS enabled interface)

Interface	IP	Tunnel	BGP	Static	Operational
Serial2/0	Yes (ldp)	No	No	No	Yes
Serial2/1	Yes (ldp)	No	No	No	Yes

P#show mpls ldp discovery
! (See if ldp can discover its neighbor)

Local LDP Identifier:
192.168.3.5:0
Discovery Sources:
Interfaces:
Serial2/0 (ldp): xmit/rcv
LDP Id: 192.168.3.3:0
Serial2/1 (ldp): xmit/rcv
LDP Id: 192.168.3.2:0

P#show mpls ldp neighbor
! (Show mpls neighbors information)

Peer LDP Ident: 192.168.3.2:0; Local LDP Ident 192.168.3.5:0
TCP connection: 192.168.3.2.646 - 192.168.3.5.53347
State: Oper; Msgs sent/rcvd: 55/55; Downstream
Up time: 00:34:33
LDP discovery sources:
Serial2/1, Src IP addr: 192.168.3.18

```
Addresses bound to peer LDP Ident:
 150.1.31.5  192.168.3.21  192.168.3.18  192.168.3.2
Peer LDP Ident: 192.168.3.3:0; Local LDP Ident 192.168.3.5:0
TCP connection: 192.168.3.3.646 - 192.168.3.5.57874
State: Oper; Msgs sent/rcvd: 56/55; Downstream
Up time: 00:34:11
LDP discovery sources:
  Serial2/0, Src IP addr: 192.168.3.13
Addresses bound to peer LDP Ident:
 150.1.31.13  192.168.3.13  192.168.3.10  192.168.3.3
```

```
P#show mpls ldp bindings 192.168.3.1 255.255.255.255
! (Display ldp label on your routers to verify that every IGP route has a
local label and a label from all ldp neighbors.)
```

```
lib entry: 192.168.3.1/32, rev 26
local binding: label: 25
remote binding: lsr: 192.168.3.2:0, label: 19
remote binding: lsr: 192.168.3.3:0, label: 16
```

Task 3: Understanding TTL propagation

Step 1: Configure default route on all PE-routers (PE1, PE2, PE3, PE4)

```
PE1:
! (Configure static routes on PE1 router to reach loopback on A1 customer
edge router.)
```

```
ip route 203.1.0.1 255.255.255.255 150.1.31.2
ip route 203.1.1.0 255.255.255.0 150.1.31.2
```

```
PE2:
! (Configure static routes on PE2 router to reach loopback on A2 customer
edge router.)
```

```
ip route 203.1.0.2 255.255.255.255 150.1.31.6
ip route 203.1.2.0 255.255.255.0 150.1.31.6
```

```
PE3:
! (Configure static routes on PE3 router to reach loopback on A3 customer
edge router.)
```

```
ip route 203.1.0.3 255.255.255.255 150.1.31.14
ip route 203.1.3.0 255.255.255.0 150.1.31.14
```

```
PE4:
```

! (Configure static routes on PE4 router to reach loopback on A4 customer edge router.)

```
ip route 203.1.0.4 255.255.255.255 150.1.31.18
ip route 203.1.4.0 255.255.255.0 150.1.31.18
```

Verification:

A1#show ip route

Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
E1 - OSPF external type 1, E2 - OSPF external type 2
i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
ia - IS-IS inter area, * - candidate default, U - per-user static route
o - ODR, P - periodic downloaded static route, H - NHRP, I - LISP
+ - replicated route, % - next hop override

Gateway of last resort is 150.1.31.1 to network 0.0.0.0

```
S* 0.0.0.0/0 [1/0] via 150.1.31.1
    150.1.0.0/16 is variably subnetted, 2 subnets, 2 masks
C    150.1.31.0/24 is directly connected, Ethernet0/0
L    150.1.31.2/32 is directly connected, Ethernet0/0
    203.1.0.0/32 is subnetted, 1 subnets
C    203.1.0.1 is directly connected, Loopback1
    203.1.1.0/24 is variably subnetted, 2 subnets, 2 masks
C    203.1.1.0/24 is directly connected, Loopback2
L    203.1.1.1/32 is directly connected, Loopback2
```

PE1#show ip route

Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
E1 - OSPF external type 1, E2 - OSPF external type 2
i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
ia - IS-IS inter area, * - candidate default, U - per-user static route
o - ODR, P - periodic downloaded static route, H - NHRP, I - LISP
+ - replicated route, % - next hop override

Gateway of last resort is not set

```
    150.1.0.0/16 is variably subnetted, 5 subnets, 3 masks
C    150.1.31.0/24 is directly connected, Ethernet0/0
L    150.1.31.1/32 is directly connected, Ethernet0/0
O    150.1.31.4/30 [110/74] via 192.168.3.21, 01:39:27, Serial2/0
O    150.1.31.12/30 [110/202] via 192.168.3.21, 01:39:27, Serial2/0
O    150.1.31.16/30 [110/266] via 192.168.3.21, 01:39:27, Serial2/0
```

```
192.168.3.0/24 is variably subnetted, 10 subnets, 2 masks
C   192.168.3.1/32 is directly connected, Loopback0
O   192.168.3.2/32 [110/65] via 192.168.3.21, 01:39:17, Serial2/0
O   192.168.3.3/32 [110/193] via 192.168.3.21, 01:39:17, Serial2/0
O   192.168.3.4/32 [110/257] via 192.168.3.21, 01:39:17, Serial2/0
O   192.168.3.5/32 [110/129] via 192.168.3.21, 01:39:17, Serial2/0
O   192.168.3.8/30 [110/256] via 192.168.3.21, 01:39:27, Serial2/0
O   192.168.3.12/30 [110/192] via 192.168.3.21, 01:39:27, Serial2/0
O   192.168.3.16/30 [110/128] via 192.168.3.21, 01:39:27, Serial2/0
C   192.168.3.20/30 is directly connected, Serial2/0
L   192.168.3.22/32 is directly connected, Serial2/0
203.1.0.0/32 is subnetted, 1 subnets
S   203.1.0.1 [1/0] via 150.1.31.2
S   203.1.1.0/24 [1/0] via 150.1.31.2
```

Step 3: Redistribute static route in OSPF domain on all PE-routers. (PE1, PE2, PE3, PE4)

```
router ospf 1
 redistribute static subnets
 redistribute connected subnets
 exit
```

Verification:

```
A1#traceroute 203.1.4.1
Type escape sequence to abort.
Tracing the route to 203.1.4.1
VRF info: (vrf in name/id, vrf out name/id)
```

```
 1 150.1.31.1 1 msec 5 msec 4 msec
 2 192.168.3.21 [MPLS: Label 32 Exp 0] 34 msec 33 msec 34 msec
 3 192.168.3.17 [MPLS: Label 33 Exp 0] 33 msec 33 msec 30 msec
 4 192.168.3.13 [MPLS: Label 32 Exp 0] 33 msec 34 msec 34 msec
 5 192.168.3.9 [MPLS: Label 27 Exp 0] 33 msec 31 msec 33 msec
 6 150.1.31.18 33 msec 31 msec *
```

Task 4: Disable ip ttl propagation

Step 1: Disable ttl propagation on all service provider routers that perform labeling of incoming IP packets.

Note: Disable ttl propagation on all PE router (PE1, PE2, PE3, PE4)

```
(config)#no mpls ip propagate-ttl
```

Verification:

! (Perform trace from A1 towards 203.1.4.1 you should see only the ingress and egress core router in the path.)

A1#traceroute 203.1.4.1

Type escape sequence to abort.

Tracing the route to 203.1.4.1

VRF info: (vrf in name/id, vrf out name/id)

```
1 150.1.31.1 0 msec 0 msec 0 msec
2 192.168.3.9 [MPLS: Label 27 Exp 0] 30 msec 34 msec 33 msec
3 150.1.31.18 33 msec 34 msec *
```