

Troubleshoot OMP Best Path Selection Peculiarities and Typical Confusions

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Introduction

This document describes a typical misunderstanding of the Overlay Management Protocol (OMP) best-path selection and order of operation between the OMP best-path selection, egress policy, and send-path-limit feature.

Prerequisites

Requirements

Cisco recommends that you have knowledge of the Cisco Software Defined Wide Area Network (SDWAN) solution.

Components Used

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, ensure that you understand the potential impact of any command.

Background Information

For the purpose of this demonstration, the lab was set up with three vSmart controllers and three Cisco IOS[®] XE routers with sites IDs 243, 244, and 245 advertising the same 172.16.1.0/24 prefix. There are also some other routers connected to the overlay (for example, with site-id 204). The last octet of any router system-ip is equal to site-id in this example (10.10.10.<site-id>). vSmarts are having system-ip 10.10.10.228, .229, and .230. In this example, each router has two transports (WAN interfaces) available hence two Transport Locators (TLOCs) with colors private1 and biz-internet. On private1, the circuit router has an IP address assigned in the form of 192.168.9.x and on biz-internet it has 192.168.10.x where x is a site-id.

Scenarios were tested with vSmarts running software versions 20.4.1 and 20.6.1.

Best Path Selection, Egress Policy and Send-Path Limit Order of Operations

First of all, demonstrate the best path selection, egress policy, and **send-path-limit** order of operations. Routers with site-id 247 must receive prefix from routers with site-id 244 or 245, but not from 243.

Here is the policy to achieve this for reference:

```
policy
lists
  site-list site_247
    site-id 247
  !
  site-list sites_244_245
    site-id 244
    site-id 245
  !
  prefix-list ENK_PL
    ip-prefix 172.16.1.0/24
  !
!
control-policy send_2_247
  sequence 10
    match route
      prefix-list ENK_PL
      site-list sites_244_245
    !
    action accept
  !
!
  sequence 20
    match route
      prefix-list ENK_PL
    !
    action reject
  !
!
  default-action accept
!
!
apply-policy
site-list site_247
  control-policy send_2_247 out
!
!
```

When you take a look a vSmart2, it has connectivity to two other vSmarts (site-id 1) and edge routers with site-id 243, 244, and 247. Site 245 is connected to some other vSmart controller and vSmart2 receives its prefix from them indirectly via other vSmart(s).

```
vsmart2# show omp peers
R -> routes received
I -> routes installed
S -> routes sent
```

PEER	TYPE	DOMAIN ID	OVERLAY ID	SITE ID	STATE	UPTIME	R/I/S
10.10.10.204	vedge	1	1	204	up	2:20:18:10	14/0/7
10.10.10.228	vsmart	1	1	1	up	2:20:18:06	247/0/9
10.10.10.230	vsmart	1	1	1	up	2:20:17:07	256/0/15
10.10.10.243	vedge	1	1	243	up	2:20:18:10	8/0/7
10.10.10.244	vedge	1	1	244	up	0:13:24:59	10/0/6
10.10.10.247	vedge	1	1	247	up	2:20:18:10	0/0/8

In the OMP table, you can notice that route is being received from two other vSmart controllers and also directly from sites 243 and 244:

```
vsmart2# show omp routes 172.16.1.0/24
```

Code:


```
C -> chosen
I -> installed
Red -> redistributed
Rej -> rejected
L -> looped
R -> resolved
S -> stale
Ext -> extranet
Inv -> invalid
Stg -> staged
IA -> On-demand inactive
U -> TLOC unresolved
```

VPN	PREFIX	FROM PEER	PATH ID	LABEL	STATUS	ATTRIBUTE TYPE	TLOC IP	COLOR
1	172.16.1.0/24	10.10.10.228	409	1001	C,R	installed	10.10.10.243	publi
		10.10.10.230	7187	1002	C,R	installed	10.10.10.244	biz-i
		10.10.10.243	69	1001	C,R	installed	10.10.10.243	publi
		10.10.10.243	81	1001	C,R	installed	10.10.10.243	priva
		10.10.10.244	68	1002	C,R	installed	10.10.10.244	biz-i
		10.10.10.244	81	1002	C,R	installed	10.10.10.244	priva

send-path-limit - in this demonstration is set to 1:

```
vsmart2# show running-config omp
```

```
omp
no shutdown
send-path-limit 1
no graceful-restart
!
```

 **Note:** From all equal-cost multi-paths for given prefix selected as best-paths and accepted by outbound (egress) policy, not more than the number of paths specified in send-path-limit advertised.

You can check which prefix is advertised to which peer. The route originated by site 243 has the lowest originator system-ip in the OMP route list. Because `send-path-limit` is set to 1, out of two available paths via TLOC private1 and biz-internet, the only route advertised to the routers with site-id 204 and 244 as well as to two other vSmart controllers (10.10.10.228, .230) is from the biz-internet TLOC because it has a highest private IP address (address assigned to the interface):

```
vsmart2# show omp tlocs ip 10.10.10.243 received | b PUBLIC
```

ADDRESS FAMILY	TLOC IP	COLOR	ENCAP	FROM PEER	STATUS	PSEUDO		PUBLIC	
						KEY	PUBLIC IP	PORT	PRIVATE
ipv4	10.10.10.243	biz-internet	ipsec	10.10.10.228	C,R	1	192.168.10.243	12346	192.168.
				10.10.10.230	C,R	1	192.168.10.243	12346	192.168.
				10.10.10.243	C,I,R	1	192.168.10.243	12346	192.168.
	10.10.10.243	private1	ipsec	10.10.10.228	C,R	1	192.168.9.243	12346	192.168.
				10.10.10.230	C,R	1	192.168.9.243	12346	192.168.
				10.10.10.243	C,I,R	1	192.168.9.243	12346	192.168.

Site id 243 gets the next route from the list (from site 244) and it is also via biz-internet color because it has the highest TLOC private IP address. Site 243 does not get its own route because of the split-horizon rule though it has the lowest system-IP. Site 247 gets the route from site 244 as well because of the egress policy.

```
vsmart2# show omp routes 172.16.1.0/24 detail | nomore | exclude not\ set | b ADVERTISED | include peer
peer 10.10.10.204
  originator 10.10.10.243
  tloc 10.10.10.243, biz-internet, ipsec
peer 10.10.10.228
  originator 10.10.10.243
  tloc 10.10.10.243, biz-internet, ipsec
peer 10.10.10.230
  originator 10.10.10.243
  tloc 10.10.10.243, biz-internet, ipsec
peer 10.10.10.243
  originator 10.10.10.244
  tloc 10.10.10.244, biz-internet, ipsec
peer 10.10.10.244
  originator 10.10.10.243
  tloc 10.10.10.243, biz-internet, ipsec
peer 10.10.10.247
  originator 10.10.10.244
  tloc 10.10.10.244, biz-internet, ipsec
```

vSmart Best Path Selection: Edge Router Sourced Routes vs Routes Received via Other vSmarts Case 1

In order to continue this demonstration, increase `send-path-limit` and set it to 16, enable `debug omp policy prefix 172.16.1.0/24 level high`, and observe the results. Now, vSmart2 also receives a route from site-id 245 via vSmart1 with system-ip 10.10.10.228 and vSmart3 with 10.10.10.230).

```
vsmart2# show omp routes 172.16.1.0/24
```

```
Code:
```

```
C -> chosen  
I -> installed  
Red -> redistributed  
Rej -> rejected  
L -> looped  
R -> resolved  
S -> stale  
Ext -> extranet  
Inv -> invalid  
Stg -> staged  
IA -> On-demand inactive  
U -> TLOC unresolved
```

VPN	PREFIX	FROM PEER	PATH ID	LABEL	STATUS	ATTRIBUTE TYPE	TLOC IP	COLOR
1	172.16.1.0/24	10.10.10.228	10146	1001	C,R	installed	10.10.10.243	publi
		10.10.10.228	10448	1001	C,R	installed	10.10.10.243	priva
		10.10.10.228	10449	1002	C,R	installed	10.10.10.245	biz-i
		10.10.10.228	10450	1002	C,R	installed	10.10.10.245	priva
		10.10.10.230	10252	1002	C,R	installed	10.10.10.244	biz-i
		10.10.10.230	10577	1002	C,R	installed	10.10.10.244	priva
		10.10.10.230	10578	1002	C,R	installed	10.10.10.245	biz-i
		10.10.10.230	10579	1002	C,R	installed	10.10.10.245	priva
		10.10.10.243	69	1001	C,R	installed	10.10.10.243	publi
		10.10.10.243	81	1001	C,R	installed	10.10.10.243	priva
		10.10.10.244	68	1002	C,R	installed	10.10.10.244	biz-i
		10.10.10.244	81	1002	C,R	installed	10.10.10.244	priva

But vSmart2 advertises only routes from site 244, and not from 245, to site 247 now. This is a typical source of confusion because routes received directly from edge routers are preferred over routes received via vSmarts and not advertised to an Edge router and not sent to an Edge router, but only in case if vSmart found an OMP routing table entry for the same prefix from any other vSmart that Edge router is already connected to:

```
vsmart2# show omp routes 172.16.1.0/24 detail | nomore | exclude not\ set | b ADVERTISED | include peer
```

```
peer 10.10.10.204  
  originator 10.10.10.244  
  originator 10.10.10.244  
  originator 10.10.10.243  
  originator 10.10.10.243  
peer 10.10.10.228  
  originator 10.10.10.244  
  originator 10.10.10.244  
  originator 10.10.10.243  
  originator 10.10.10.243  
peer 10.10.10.230  
  originator 10.10.10.244  
  originator 10.10.10.244  
  originator 10.10.10.243  
  originator 10.10.10.243  
peer 10.10.10.243  
  originator 10.10.10.244  
  originator 10.10.10.244  
peer 10.10.10.244  
  originator 10.10.10.243
```

```

originator 10.10.10.243
peer 10.10.10.247
originator 10.10.10.244
originator 10.10.10.244

```

This is also confirmed from debug logs stored in `/var/log/tmplog/vdebug` where the reason for suppression is seen as **vSmart Connectivity**.

```

Oct 9 14:29:01 vsmart2 OMPD[1120]: omp_rib_out_process_entry[3792]: Peer: 10.10.10.247 NLRI: 1: 172.16.1.0/24
Oct 9 14:29:01 vsmart2 OMPD[1120]: omp_rib_out_process_entry[3792]: Peer: 10.10.10.247 NLRI: 1: 172.16.1.0/24
Oct 9 14:29:01 vsmart2 OMPD[1120]: omp_rib_out_process_entry[3792]: Peer: 10.10.10.247 NLRI: 1: 172.16.1.0/24
Oct 9 14:29:01 vsmart2 OMPD[1120]: omp_rib_out_process_entry[3792]: Peer: 10.10.10.247 NLRI: 1: 172.16.1.0/24
Oct 9 14:29:01 vsmart2 OMPD[1120]: omp_rib_out_process_entry[3792]: Peer: 10.10.10.247 NLRI: 1: 172.16.1.0/24
Oct 9 14:29:01 vsmart2 OMPD[1120]: omp_rib_out_process_entry[3792]: Peer: 10.10.10.247 NLRI: 1: 172.16.1.0/24
Oct 9 14:29:01 vsmart2 OMPD[1120]: omp_rib_out_process_entry[3792]: Peer: 10.10.10.247 NLRI: 1: 172.16.1.0/24
Oct 9 14:29:01 vsmart2 OMPD[1120]: omp_rib_out_process_entry[3792]: Peer: 10.10.10.247 NLRI: 1: 172.16.1.0/24

```

At the same time, keep in mind that site 247 receives both routes finally anyway, because by default it is connected to two vSmart controllers (**max-control-connections 2**) and vSmart3 advertises both routes to it because originators are directly connected to it:

```
Site-247#show sdwan omp routes 172.16.1.0/24 | begin PATH
```

VPN	PREFIX	FROM PEER	PATH		STATUS	ATTRIBUTE		TLOC IP	COLOR
			ID	LABEL		TYPE			
1	172.16.1.0/24	10.10.10.229	13	1002	C,I,R	installed		10.10.10.244	biz-i
		10.10.10.229	14	1002	C,I,R	installed		10.10.10.244	priva
		10.10.10.230	13	1002	C,R	installed		10.10.10.244	biz-i
		10.10.10.230	14	1002	C,R	installed		10.10.10.244	priva
		10.10.10.230	61	1002	C,I,R	installed		10.10.10.245	biz-i
		10.10.10.230	62	1002	C,I,R	installed		10.10.10.245	priva

```

vsmart3# show omp routes 172.16.1.0/24 detail | nomore | exclude not\ set | b ADVERTISED | include peer
peer 10.10.10.247
originator 10.10.10.244
originator 10.10.10.244
originator 10.10.10.245
originator 10.10.10.245

```

A summarization of the best path selection and order of operations is included in this table.

1. Prefer non-stale route over stale route
2. Route resolvability
Next-hop TLOC is Reachable (data plane BFD session is here)

3. Prefer highest route preference
4. Prefer highest TLOC preference
5. Prefer best origin code (Connected, Static, eBGP, EIGRP Internal, OSPF Intra, OSPF Inter, OSPF External, EIGRP External iBGP, Unknown/Unset)
6. Route Source Preference. On vSmart: prefer Edge router-sourced route over vSmart-sourced route
7. Prefer OMP route with lowest origin metric
8. Prefer route received from lowest System-IP
9. Prefer route from highest Private TLOC IP-address originated from the same site-id
10. outbound control policy
11. send-path-limit

vSmart Best Path Selection: Edge Router Sourced Routes vs Routes Received via Other vSmarts Case 2

This behavior can be seen in double-failure scenarios with controllers affinity configuration and outbound (egress) policy configuration that discriminates some routes from some sources over others based on some criteria as we do with policy in the previous scenarios. For the purpose of demonstration in this section, you need to increase route scale compared to the previous scenarios, so more sites with different site-ids are used. Consider typical deployment with three vSmart controllers and three geographical regions just like in the demonstration in the previous section. With help of affinity, each vSmart is assigned to the corresponding group 1, 2, or 3. **max-control-connections** is set to the default value of 2. vSmarts 1 and 2 are preferred for routers from region A. In region B vSmart 2 and 3 are preferred. For a region, C vSmart 3 and 1 are preferred.

Here is an example of configuration to assign vSmart controller to Group 1:

```
system
 controller-group-id 1
!
```

And also, an example of a configuration for the router from region A that prefers controllers from Groups 1 and 2. Controllers from Group 3 are used as a last resort to connect if none of the controllers from Groups 1 and 2 are available because **max-control-connections** is set to 2 by default:

```

system
 controller-group-list 1 2 3
 !

```

The same result can be achieved with the other configuration:

```

vpn 0
 interface ge0/0
  tunnel-interface
  exclude-controller-group-list 3
 !
 !
 !

```

max-control-connections is also set to a default value of 2 in this demonstration. **send-path-limit** set to value 16 on all routers and controllers.

Each region has 2 routers now originating prefix 10.0.0.0/8. Each of those routers has five transports (WAN interfaces) with TLOC colors from private1 to private5. cEdges originating this prefix are assigned to the regions as shown in this table. It also describes new system-ip addressing.

hostname / system-ip		vSmart1	vSmart2	vSmart3
		169.254.206.4	169.254.206.5	169.254.206.6
cEdge1	169.254.206.11	Region A	Region A	
cEdge2	169.254.206.12	Region A	Region A	
cEdge3	169.254.206.13		Region B	Region B
cEdge4	169.254.206.14		Region B	Region B
cEdge5	169.254.206.15	Region C		Region C
cEdge6	169.254.206.16	Region C		Region C

Such configuration and scale mean that each vSmart controller receives 20 paths from directly connected routers (4 router x 5 TLOCs) and in addition also 20 paths from each vSmart. In total, it gives 60 paths for the given prefix 10.0.0.0/8 in the OMP table of each vSmart controller in normal conditions. Some unimportant columns were removed from show omp route 10.0.0.0/8 vSmart1 output for brevity.

FROM PEER	STATUS	TLOC IP	COLOR	PREFERENCE
169.254.206.5	C,R	169.254.206.11	private1	-
169.254.206.5	C,R	169.254.206.11	private2	-
169.254.206.5	C,R	169.254.206.11	private3	-
169.254.206.5	C,R	169.254.206.11	private4	-
169.254.206.5	C,R	169.254.206.11	private5	-
169.254.206.5	C,R	169.254.206.12	private1	-
169.254.206.5	C,R	169.254.206.12	private2	-
169.254.206.5	C,R	169.254.206.12	private3	-
169.254.206.5	C,R	169.254.206.12	private4	-
169.254.206.5	C,R	169.254.206.12	private5	-
169.254.206.5	C,R	169.254.206.13	private1	-
169.254.206.5	C,R	169.254.206.13	private2	-
169.254.206.5	C,R	169.254.206.13	private3	-
169.254.206.5	C,R	169.254.206.13	private4	-
169.254.206.5	C,R	169.254.206.13	private5	-
169.254.206.5	C,R	169.254.206.14	private1	-
169.254.206.5	C,R	169.254.206.14	private2	-
169.254.206.5	C,R	169.254.206.14	private3	-
169.254.206.5	C,R	169.254.206.14	private4	-
169.254.206.5	C,R	169.254.206.14	private5	-
169.254.206.6	C,R	169.254.206.13	private1	-
169.254.206.6	C,R	169.254.206.13	private2	-
169.254.206.6	C,R	169.254.206.13	private3	-
169.254.206.6	C,R	169.254.206.13	private4	-
169.254.206.6	C,R	169.254.206.13	private5	-
169.254.206.6	C,R	169.254.206.14	private1	-
169.254.206.6	C,R	169.254.206.14	private2	-
169.254.206.6	C,R	169.254.206.14	private3	-
169.254.206.6	C,R	169.254.206.14	private4	-
169.254.206.6	C,R	169.254.206.14	private5	-
169.254.206.6	C,R	169.254.206.15	private1	-
169.254.206.6	C,R	169.254.206.15	private2	-
169.254.206.6	C,R	169.254.206.15	private3	-
169.254.206.6	C,R	169.254.206.15	private4	-
169.254.206.6	C,R	169.254.206.15	private5	-
169.254.206.6	C,R	169.254.206.16	private1	-
169.254.206.6	C,R	169.254.206.16	private2	-
169.254.206.6	C,R	169.254.206.16	private3	-
169.254.206.6	C,R	169.254.206.16	private4	-
169.254.206.6	C,R	169.254.206.16	private5	-
169.254.206.11	C,R	169.254.206.11	private1	-
169.254.206.11	C,R	169.254.206.11	private2	-
169.254.206.11	C,R	169.254.206.11	private3	-
169.254.206.11	C,R	169.254.206.11	private4	-
169.254.206.11	C,R	169.254.206.11	private5	-
169.254.206.12	C,R	169.254.206.12	private1	-
169.254.206.12	C,R	169.254.206.12	private2	-
169.254.206.12	C,R	169.254.206.12	private3	-
169.254.206.12	C,R	169.254.206.12	private4	-
169.254.206.12	C,R	169.254.206.12	private5	-
169.254.206.15	C,R	169.254.206.15	private1	-
169.254.206.15	C,R	169.254.206.15	private2	-
169.254.206.15	C,R	169.254.206.15	private3	-
169.254.206.15	C,R	169.254.206.15	private4	-
169.254.206.15	C,R	169.254.206.15	private5	-
169.254.206.16	C,R	169.254.206.16	private1	-
169.254.206.16	C,R	169.254.206.16	private2	-
169.254.206.16	C,R	169.254.206.16	private3	-
169.254.206.16	C,R	169.254.206.16	private4	-
169.254.206.16	C,R	169.254.206.16	private5	-

Now let us discuss a failure scenario. Some spoke routers with site-id 20 that belong to Region A cannot connect to both controllers, for whatever reason, and are connected to only one controller vSmart3 which is the last resort vSmart for this region.

```
Site-20# show omp peers
R -> routes received
I -> routes installed
S -> routes sent
```

PEER	TYPE	DOMAIN ID	OVERLAY ID	SITE ID	STATE	UPTIME	R/I/S
169.254.206.6	vsmart	1	1	1	up	0:00:26:31	10/4/0

If no control-policy is configured, this can lead to suboptimal routing for Site-20 from Region A because as per the best-path selection algorithm, vSmart3 advertises routes received from Edge routers first. They are more preferred than routes native to region A received via vSmart controllers vSmart1 and vSmart2:

```
vsmart3# show omp routes 10.0.0.0/8 advertised detail | nomore | b ADVERTISED | i originator\|peer\| t
peer 192.168.206.20
  originator 169.254.206.14
  tloc 169.254.206.14, private2, ipsec
  originator 169.254.206.14
  tloc 169.254.206.14, private1, ipsec
  originator 169.254.206.14
  tloc 169.254.206.14, private3, ipsec
  originator 169.254.206.14
  tloc 169.254.206.14, private4, ipsec
  originator 169.254.206.14
  tloc 169.254.206.14, private5, ipsec
  originator 169.254.206.15
  tloc 169.254.206.15, private5, ipsec
  originator 169.254.206.15
  tloc 169.254.206.15, private2, ipsec
  originator 169.254.206.15
  tloc 169.254.206.15, private1, ipsec
  originator 169.254.206.15
  tloc 169.254.206.15, private3, ipsec
  originator 169.254.206.15
  tloc 169.254.206.15, private4, ipsec
  originator 169.254.206.13
  tloc 169.254.206.13, private5, ipsec
  originator 169.254.206.13
  tloc 169.254.206.13, private4, ipsec
  originator 169.254.206.13
  tloc 169.254.206.13, private3, ipsec
  originator 169.254.206.13
  tloc 169.254.206.13, private1, ipsec
  originator 169.254.206.13
  tloc 169.254.206.13, private2, ipsec
  originator 169.254.206.16
  tloc 169.254.206.16, private1, ipsec
```

In order to avoid suboptimal routing, vSmart must allow spokes to receive routes from the routers in the same region only. Here is an example of a control policy to achieve this result:

```
policy
  lists
    site-list hubs_A
      site-id 11
      site-id 12
    !
    site-list hubs_B
      site-id 13
      site-id 14
    !
    site-list hubs_C
      site-id 15
      site-id 16
    !
    site-list spokes_A
      site-id 20
    !
    site-list spokes_B
      site-id 21
    !
    site-list spokes_C
      site-id 10
    !
  !
  control-policy region_A
    sequence 10
      match route
        site-list hubs_A
      !
      action accept
    !
  !
  sequence 20
    match route
    !
    action reject
  !
  !
  default-action accept
!
control-policy region_B
  sequence 10
    match route
      site-list hubs_B
    !
    action accept
  !
  !
  sequence 20
    match route
    !
    action reject
  !
  !
  default-action accept
!
control-policy region_C
```

```

sequence 10
  match route
    site-list hubs_C
  !
  action accept
  !
!
sequence 20
  match route
  !
  action reject
  !
!
default-action accept
!
!
apply-policy
  site-list spokes_A
  control-policy region_A out
  !
  site-list spokes_B
  control-policy region_B out
  !
  site-list spokes_C
  control-policy region_C out
  !
!
!

```

But from the previous scenario, you know that Edge-sourced routes are preferred over routes received via vSmart controllers. Does it mean that Site-20 in current conditions will not receive any routes?

Here is yet another important concept that is being missed frequently. Routes from cEdge1 and cEdge2 (system-ip 169.254.206.11 and 169.254.206.12) are though kept in vSmart3 OMP table even if they are less preferred and still marked as C (“chosen”). All steps in the best-path selection algorithm starting from step 8 (including) considered tie-breakers and routes are not removed from the OMP table, but sorted according to the described preference for the purpose of consequent processing by egress control policies and **send-path-limit** limitation.

Because vSmart3 cannot find an OMP routing table entry for the prefix 10.0.0.0/8 from other vSmart that Edge router is already connected to (Site-20 connected to vSmart3 only), it advertises routes from site 11 and site 12 (cEdge1 and cEdge2 correspondingly) to the site 20 router:

```

vsmart3# show omp routes 10.0.0.0/8 advertised detail | nomore | b ADVERTISED | i originator\|peer\|\ t
peer    192.168.206.20
  originator    169.254.206.11
  tloc          169.254.206.11, private1, ipsec
  originator    169.254.206.11
  tloc          169.254.206.11, private2, ipsec
  originator    169.254.206.11
  tloc          169.254.206.11, private3, ipsec
  originator    169.254.206.11
  tloc          169.254.206.11, private4, ipsec
  originator    169.254.206.11
  tloc          169.254.206.11, private5, ipsec
  originator    169.254.206.12
  tloc          169.254.206.12, private1, ipsec
  originator    169.254.206.12

```

tloc	169.254.206.12, private2, ipsec
originator	169.254.206.12
tloc	169.254.206.12, private3, ipsec
originator	169.254.206.12
tloc	169.254.206.12, private4, ipsec
originator	169.254.206.12
tloc	169.254.206.12, private5, ipsec

Related Information

- [OMP Documentation](#)
- [Troubleshoot OMP Route Instability in Failover Scenario](#)
- [Technical Support & Documentation - Cisco Systems](#)