

为什么在集中控制策略中设置tloc-action不起作用？

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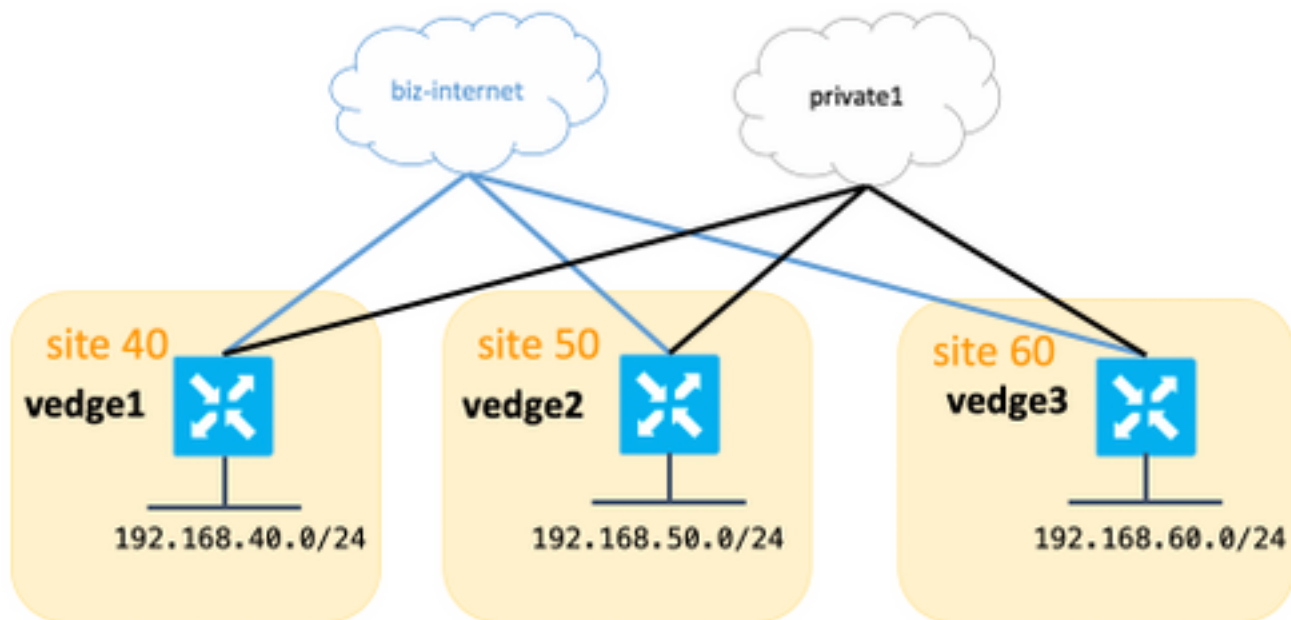
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简介

本文档介绍在集中控制策略中使用`set tloc-action`命令时，重叠管理协议(OMP)路由所出现的问题，并说明其发生的原因及解决方法。

拓扑

为了更好地了解问题，请参阅描述设置的简单拓扑图：



配置

本文使用vEdge和控制器软件版本18.3.5。

所有站点都连接到Biz-Internet和专用颜色，此表汇总了配置。

主机名 站点 system-ip biz- 专用

ID	192.168.30	internet 链路上的 ip地址	1链路上的 ip地址
vEdge1 40	.104	192.168.10 9.181	192.168.110. 181
vEdge2 50	.105	192.168.10 9.182	192.168.110. 182
vEdge3 60	.106	192.168.10 9.183	192.168.110. 183
vSmart 1	.103		

vEdge上没有特殊配置。使用两条默认路由进行配置非常简单，此处为简单起见省略了这些路由。

在vSmart上，应用了以下配置：

```
lists
vpn-list VPN_40
  vpn 40
  !
site-list sites_40_60
  site-id 40
  site-id 60
  !
prefix-list SITE_40
  ip-prefix 192.168.40.0/24
  !
prefix-list SITE_60
  ip-prefix 192.168.60.0/24
  !
!
control-policy REDIRECT_VIA_VEDGE2
sequence 10
  match route
  prefix-list SITE_40
  !
  action accept
  set
  tloc-action primary
  tloc 192.168.30.105 color biz-internet encaps ipsec
  !
!
sequence 20
  match route
```

```

prefix-list SITE_60
!
action accept
set
  tloc-action primary
  tloc 192.168.30.105 color biz-internet encaps ipsec
!
!
!
default-action accept
!
apply-policy
site-list sites_40_60
control-policy REDIRECT_VIA_VEDGE2 out
!
!

```

此策略的主要目标是通过中间目的站点50将流量从站点40重定向到站点60，并优选地使用业务互联网。

问题

从show omp routes 输出中，您看到vEdge1、vEdge3上无法安装biz-internet路由，并且状态设置为“无效”和“未解析”(Inv、U)：

```
vedge1# show omp routes | b PATH
```

VPN	PREFIX	FROM PEER	PATH	STATUS	ATTRIBUTE	TLOC IP
COLOR	ENCAP	PREFERENCE	ID LABEL		TYPE	
40	192.168.40.0/24	0.0.0.0	68 1002	C,Red,R	installed	192.168.30.104
biz-internet	ipsec	-	81 1002	C,Red,R	installed	192.168.30.104
privatel	ipsec	-	4 1002	C,I,R	installed	192.168.30.105
40	192.168.50.0/24	192.168.30.103	10 1002	C,I,R	installed	192.168.30.105
biz-internet	ipsec	-	8 1002	Inv,U	installed	192.168.30.105
privatel	ipsec	-	9 1002	C,I,R	installed	192.168.30.106
40	192.168.60.0/24	192.168.30.103	8 1002	Inv,U	installed	192.168.30.105
192.168.30.103	9 1002	C,I,R	installed	192.168.30.106	biz-internet ipsec -	

```
vedge3# show omp routes | b PATH
```

VPN	PREFIX	FROM PEER	PATH	STATUS	ATTRIBUTE	TLOC IP
COLOR	ENCAP	PREFERENCE	ID LABEL		TYPE	
40	192.168.40.0/24	192.168.30.103	19 1002	Inv,U	installed	192.168.30.105
192.168.30.103	20 1002	C,I,R	installed	192.168.30.104	biz-internet ipsec -	
192.168.30.103	16 1002	C,I,R	installed	192.168.30.105	biz-internet ipsec -	
192.168.30.103	21 1002	C,I,R	installed	192.168.30.105	privatel ipsec -	
40	192.168.60.0/24	0.0.0.0	68 1002	C,Red,R	installed	192.168.30.106
192.168.30.106	biz-internet ipsec -	0.0.0.0	81 1002	C,Red,R	installed	192.168.30.106
privatel	ipsec -					

同时，您还会看到在vEdge1和vEdge3之间启动并运行的业务互联网上的数据平面隧道：

```
vedge1# show bfd sessions
```

```

          SOURCE TLOC          REMOTE TLOC
DST PUBLIC          DST PUBLIC  DETECT    TX
SYSTEM IP          SITE ID  STATE      COLOR      COLOR      SOURCE IP
IP                  PORT      ENCAP     MULTIPLIER INTERVAL(msec) UPTIME
TRANSITIONS
-----
-----
-----
192.168.30.105    50      up        biz-internet  biz-internet  192.168.109.181
192.168.109.182          12366    ipsec  7          1000          0:02:52:22    0
192.168.30.105    50      up        privatel     privatel     192.168.110.181
192.168.110.182          12366    ipsec  7          1000          0:00:00:12    1
192.168.30.106    60      up        biz-internet  biz-internet  192.168.109.181
192.168.109.183          12366    ipsec  7          1000          0:02:52:22    0
192.168.30.106    60      up        privatel     privatel     192.168.110.181
192.168.110.183          12366    ipsec  7          1000          0:00:56:28    0

```

vedge3# show bfd sessions

```

          SOURCE TLOC          REMOTE TLOC
DST PUBLIC          DST PUBLIC  DETECT    TX
SYSTEM IP          SITE ID  STATE      COLOR      COLOR      SOURCE IP
IP                  PORT      ENCAP     MULTIPLIER INTERVAL(msec) UPTIME
TRANSITIONS
-----
-----
-----
192.168.30.104    40      up        biz-internet  biz-internet  192.168.109.183
192.168.109.181          12366    ipsec  7          1000          0:02:54:25    0
192.168.30.104    40      up        privatel     privatel     192.168.110.183
192.168.110.181          12366    ipsec  7          1000          0:00:58:30    0
192.168.30.105    50      up        biz-internet  biz-internet  192.168.109.183
192.168.109.182          12366    ipsec  7          1000          0:02:54:25    0
192.168.30.105    50      up        privatel     privatel     192.168.110.183
192.168.110.182          12366    ipsec  7          1000          0:00:57:26    0

```

在show omproute详细输出中，您会看到tloc设置正确，并且未估tloc设置，但状态为Inv，U，丢失原因无效：

vedge3# show omp routes 192.168.40.0/24 detail

```

-----
omp route entries for vpn 40 route 192.168.40.0/24
-----
          RECEIVED FROM:
peer          192.168.30.103
path-id      19
label 1002 status Inv,U loss-reason invalid lost-to-peer 192.168.30.103 lost-to-path-id 20
Attributes: originator 192.168.30.104 type installed tloc 192.168.30.105, biz-internet, ipsec
ultimate-tloc 192.168.30.104, biz-internet, ipsec -- primary domain-id not set overlay-id 1
site-id 40 preference not set tag not set origin-PROTO connected origin-metric 0 as-path not set
unknown-attr-len not set RECEIVED FROM: peer 192.168.30.103 path-id 20 label 1002 status C,I,R
loss-reason not set lost-to-peer not set lost-to-path-id not set Attributes: originator
192.168.30.104 type installed tloc 192.168.30.104, biz-internet, ipsec ultimate-tloc not set
domain-id not set overlay-id 1 site-id 40 preference not set tag not set origin-PROTO connected
origin-metric 0 as-path not set unknown-attr-len not set

```

注意：最终tloc是中间跃点构建数据平面隧道(IPsec或通用路由封装(GRE))以到达最终目的地的TLOC。

注意：仅当从站点到中间跳以及从中间跳到最终目的地的传输颜色相同时，才支持tloc-action。如果用于从站点到达中间跳的传输颜色与从中间跳到最终目的地的传输颜色不同，则这将导致tloc-action问题。

您可以看到，主要目标未实现，并且流量遵循直接路径，如从192.168.40.0/24子网中的主机所示：

```
traceroute -n 192.168.60.20
traceroute to 192.168.60.20 (192.168.60.20), 30 hops max, 60 byte packets
 1 192.168.40.104 0.288 ms 0.314 ms 0.266 ms
 2 192.168.60.106 0.911 ms 1.045 ms 1.140 ms
 3 192.168.60.20 1.213 ms !X 1.289 ms !X 1.224 ms !X
```

解决方案

作为根本原因，最初怀疑软件存在[缺陷CSCvm64622](#)被击中，但是经过进一步调查后发现，由于产品文档不清楚tloc操作要求，该配置错误。因此，有关TLOC操作的文档部分将更新如下：

注意：如果操作为**accept set tloc-action**，则在中间目标上配置服务TE。

因此，在当前场景中，vEdge2上需要配置服务TE，以便使集中控制策略工作，因为您基本上使用流量工程(TE)，方法是通过任意路径进行引导：

```
vedge2(config)# vpn 40
vedge2(config-vpn-40)# service ?
Possible completions:
  FW  IDP  IDS  TE  netsvc1  netsvc2  netsvc3  netsvc4
vedge2(config-vpn-40)# service TE
vedge2(config-vpn-40)# commit
Commit complete.
```

它解决了控制策略问题，因为vEdge2开始通告TE服务：

```
vsmart1# show omp services | b PATH
```

VPN	SERVICE	ORIGINATOR	FROM PEER	PATH ID	PATH LABEL	STATUS
40	VPN	192.168.30.104	192.168.30.104	68	1002	C,I,R
			192.168.30.104	81	1002	C,I,R
40	VPN	192.168.30.105	192.168.30.105	68	1002	C,I,R
			192.168.30.105	81	1002	C,I,R
40	VPN	192.168.30.106	192.168.30.106	68	1002	C,I,R
			192.168.30.106	81	1002	C,I,R
40	TE	192.168.30.105	192.168.30.105	68 1007	C,I,R 192.168.30.105 81 1007	C,I,R

vEdge1和vEdge3现在成功安装了路由，请注意状态设置为C、I、R:

```
vedge3# show omp routes 192.168.40.0/24 detail
```

```
-----
omp route entries for vpn 40 route 192.168.40.0/24
-----
RECEIVED FROM:
peer          192.168.30.103
path-id      19 label 1002 status C,I,R loss-reason not set lost-to-peer not set lost-to-path-id
```

```
not set Attributes: originator 192.168.30.104 type installed tloc 192.168.30.105, biz-internet,
ipsec ultimate-tloc 192.168.30.104, biz-internet, ipsec -- primary domain-id not set overlay-id
1 site-id 40 preference not set tag not set origin-proto connected origin-metric 0 as-path not
set unknown-attr-len not set RECEIVED FROM: peer 192.168.30.103 path-id 20 label 1002 status R
loss-reason tloc-action lost-to-peer 192.168.30.103 lost-to-path-id 19 Attributes: originator
192.168.30.104 type installed tloc 192.168.30.104, biz-internet, ipsec ultimate-tloc not set
domain-id not set overlay-id 1 site-id 40 preference not set tag not set origin-proto connected
origin-metric 0 as-path not set unknown-attr-len not set vedge3# show ip routes 192.168.40.0/24
| b PROTOCOL PROTOCOL NEXTHOP NEXTHOP NEXTHOP VPN PREFIX PROTOCOL SUB TYPE IF NAME ADDR VPN TLOC
IP COLOR ENCAP STATUS -----
----- 40 192.168.40.0/24 omp - - -
- 192.168.30.105 biz-internet ipsec F,S
```