

# Cisco vEdge路由器上的双向转发检测抖动原因定义

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## 简介

本文档介绍Cisco vEdge路由器上的各种双向转发检测(BFD)抖动原因。

## 先决条件

### 要求

思科建议您了解Cisco SDWAN解决方案。

### 使用的组件

本文档基于运行19.2.1的Cisco云vEdge路由器。

本文档中的信息都是基于特定实验室环境中的设备编写的。本文档中使用的所有设备最初均采用原始（默认）配置。如果您的网络处于活动状态，请确保您了解所有命令的潜在影响。

## 拓扑概述

本文档不限于任何特定拓扑。

本文档中某些重要组件的IP地址和颜色：

| 组件      | 系统IP        | VPN 0 IP /颜色       | VPN 0 IP /颜色       |
|---------|-------------|--------------------|--------------------|
| VEDGE-1 | 10.13.13.13 | 192.168.1.4 / mpls | 192.168.2.4 / mpls |

|         |             |                    |                    |
|---------|-------------|--------------------|--------------------|
| VEDGE-2 | 10.15.15.15 | 192.168.1.8 /商业互联网 | 192.168.2.8 /商业互联网 |
| vSmart  | 10.8.8.8    | 192.168.1.3 /默认    | 不适用                |
| vManage | 10.7.7.7    | 192.168.1.1 /默认    | 不适用                |

## BFD状态

Cisco vEdge路由器上“flap-reason”的可能值为：

1. **bfd-deleted** - BFD关闭，因为控制平面已将其删除。

删除BFD时，您会发出两个通知。一个用于BFD关闭，一个用于BFD删除。

2. **timeout** — 远程端没有BFD响应。

3. **remote-down** — 远程端发送了一个BFD数据包，表明它已进入down-state。4.

4. **不适用** — 不适用。当首次创建BFD会话和BFD会话启动时，会设置此设置。

## 场景

### 场景1.抖动原因：bfd-deleted

在VEDGE-1路由器上执行端口跃点并重现此场景：

```
HUB-1# request port-hop color biz-internet
```

```
VEDGE-1# show log tail -f /var/log/tmplog/vdebug
local7.debug: Mar 20 09:29:21 VEDGE-1 VDAEMON[1136]: vdaemon_disable_my_tloc[1308]:
%VDAEMON_DBG_EVENTS-1: Disabling tloc ge0_1.
local7.debug: Mar 20 09:29:21 VEDGE-1 VDAEMON[1136]: vdaemon_send_tloc_info[8282]:
%VDAEMON_DBG_MISC-1: Sending TLOC: ifname:ge0_1 color:biz-internet spi:1499 smarts:1 manages:1
state:DOWN LR encap: 0 LR hold time : 7000 Pairwise-Keys Disabled key-id 0
local7.info: Mar 20 09:29:21 VEDGE-1 VDAEMON[1136]: %Viptela-VEDGE-1-vdaemon-6-INFO-1400002:
Notification: 3/20/2020 9:29:21 control-connection-state-change severity-level:major host-
name:"VEDGE-1" system-ip:10.13.13.13 personality:vEdge peer-type:vsmart peer-system-ip:10.8.8.8
peer-vmanage-system-ip:0.0.0.0 public-ip:192.168.1.3 public-port:12946 src-color:biz-internet
remote-color:default uptime:"0:00:35:57" new-state:down
local7.info: Mar 20 09:29:21 VEDGE-1 VDAEMON[1136]: %Viptela-VEDGE-1-vdaemon-6-INFO-1400002:
Notification: 3/20/2020 9:29:21 control-connection-state-change severity-level:major host-
name:"VEDGE-1" system-ip:10.13.13.13 personality:vEdge peer-type:vmanage peer-system-ip:10.7.7.7
peer-vmanage-system-ip:0.0.0.0 public-ip:192.168.1.1 public-port:12946 src-color:biz-internet
remote-color:mpls uptime:"0:01:56:34" new-state:down
local7.info: Mar 20 09:29:21 VEDGE-1 FTMD[1126]: %Viptela-VEDGE-1-ftmd-6-INFO-1400002:
Notification: 3/20/2020 9:29:21 bfd-state-change severity-level:major host-name:"VEDGE-1"
system-ip:10.13.13.13 src-ip:192.168.2.4 dst-ip:192.168.1.6 proto:ipsec src-port:12406 dst-
port:12347 local-system-ip:10.13.13.13 local-color:"biz-internet" remote-system-ip:10.14.14.14
remote-color:"mpls" new-state:down deleted:false flap-reason:bfd-deleted
```

检查BFD并控制企业互联网上的连接正常运行时间：

```
VEDGE-1# show control connections | t
LOCAL LOCAL
```

| SYSTEM   | PEER   | SITE   | DOMAIN | PRIVATE | PRIVATE | PUBLIC | PUBLIC | CONTROLLER |          |       |       |
|----------|--------|--------|--------|---------|---------|--------|--------|------------|----------|-------|-------|
| SYSTEM   | ORG    | BEHIND |        |         |         |        |        |            |          |       |       |
| INSTANCE | TYPE   | ID     | ID     | IP      | PORT    | IP     | PORT   | IP         | PROTOCOL | LOCAL |       |
| COLOR    | REMOTE | COLOR  | IP     | PORT    | STATE   | UPTIME | GROUP  | ID         | IP       | NAME  | PROXY |

```

-----
0      vsmart  8      1      192.168.1.4  12366  192.168.1.3  12946  10.8.8.8  dtls
mpls      default      192.168.1.3  12946  up      0:00:03:47  0      -      -
No
0      vsmart  8      1      192.168.2.4  12426  192.168.1.3  12946  10.8.8.8  dtls
biz-internet default      192.168.1.3  12946  up      0:00:01:52  0      -      -
No
0      vbond   0      0      192.168.1.4  12366  192.168.1.10 12346  0.0.0.0  dtls
mpls      mpls      192.168.1.10 12346  up      0:00:03:47  0      -      -
-
0      vbond   0      0      192.168.2.4  12426  192.168.1.10 12346  0.0.0.0  dtls
biz-internet biz-internet 192.168.1.10 12346  up      0:00:00:31  0      -      -
-
0      vmanage 8      0      192.168.2.4  12426  192.168.1.1  12946  10.7.7.7  dtls
biz-internet mpls      192.168.1.1  12946  up      0:00:01:52  0      -      -
No

```

VEDGE-1# sh bfd sess | t

| DETECT      | TX           | SRC    | DST         | SITE  |             |    |              |              |       |       |       |
|-------------|--------------|--------|-------------|-------|-------------|----|--------------|--------------|-------|-------|-------|
| SRC IP      | DST IP       | PROTO  | PORT        | PORT  | SYSTEM      | IP | ID           | LOCAL        | COLOR | COLOR | STATE |
| MULTIPLIER  | INTERVAL     | UPTIME | TRANSITIONS |       |             |    |              |              |       |       |       |
| -----       |              |        |             |       |             |    |              |              |       |       |       |
| 192.168.1.4 | 192.168.1.6  | ipsec  | 12366       | 12347 | 10.14.14.14 | 14 | mpls         | mpls         |       |       |       |
| up          | 7            | 1000   | 0:00:03:48  | 0     |             |    |              |              |       |       |       |
| 192.168.1.4 | 192.168.2.6  | ipsec  | 12366       | 12387 | 10.14.14.14 | 14 | mpls         | biz-internet |       |       |       |
| up          | 7            | 1000   | 0:00:03:48  | 0     |             |    |              |              |       |       |       |
| 192.168.2.4 | 192.168.1.6  | ipsec  | 12426       | 12347 | 10.14.14.14 | 14 | biz-internet | mpls         |       |       |       |
| up          | 7            | 1000   | 0:00:01:55  | 0     |             |    |              |              |       |       |       |
| 192.168.2.4 | 192.168.2.6  | ipsec  | 12426       | 12387 | 10.14.14.14 | 14 | biz-internet | biz-internet |       |       |       |
| up          | 7            | 1000   | 0:00:01:55  | 0     |             |    |              |              |       |       |       |
| 192.168.1.4 | 192.168.1.8  | ipsec  | 12366       | 12406 | 10.15.15.15 | 15 | mpls         | mpls         |       |       |       |
| up          | 7            | 1000   | 0:00:03:48  | 0     |             |    |              |              |       |       |       |
| 192.168.1.4 | 192.168.2.8  | ipsec  | 12366       | 12366 | 10.15.15.15 | 15 | mpls         | biz-internet |       |       |       |
| up          | 7            | 1000   | 0:00:03:48  | 0     |             |    |              |              |       |       |       |
| 192.168.2.4 | 192.168.1.8  | ipsec  | 12426       | 12406 | 10.15.15.15 | 15 | biz-internet | mpls         |       |       |       |
| up          | 7            | 1000   | 0:00:01:55  | 0     |             |    |              |              |       |       |       |
| 192.168.2.4 | 192.168.2.8  | ipsec  | 12426       | 12366 | 10.15.15.15 | 15 | biz-internet | biz-internet |       |       |       |
| up          | 7            | 1000   | 0:00:01:55  | 0     |             |    |              |              |       |       |       |
| 192.168.1.4 | 192.168.1.11 | ipsec  | 12366       | 12346 | 10.16.16.16 | 16 | mpls         | mpls         |       |       |       |
| up          | 7            | 1000   | 0:00:03:48  | 0     |             |    |              |              |       |       |       |
| 192.168.1.4 | 192.168.2.11 | ipsec  | 12366       | 12426 | 10.16.16.16 | 16 | mpls         | biz-internet |       |       |       |
| up          | 7            | 1000   | 0:00:03:48  | 0     |             |    |              |              |       |       |       |
| 192.168.2.4 | 192.168.1.11 | ipsec  | 12426       | 12346 | 10.16.16.16 | 16 | biz-internet | mpls         |       |       |       |
| up          | 7            | 1000   | 0:00:01:55  | 0     |             |    |              |              |       |       |       |
| 192.168.2.4 | 192.168.2.11 | ipsec  | 12426       | 12426 | 10.16.16.16 | 16 | biz-internet | biz-internet |       |       |       |
| up          | 7            | 1000   | 0:00:01:55  | 0     |             |    |              |              |       |       |       |
| 192.168.1.4 | 192.168.1.12 | ipsec  | 12366       | 12426 | 10.17.17.17 | 17 | mpls         | mpls         |       |       |       |
| up          | 7            | 1000   | 0:00:03:48  | 0     |             |    |              |              |       |       |       |
| 192.168.1.4 | 192.168.2.12 | ipsec  | 12366       | 12406 | 10.17.17.17 | 17 | mpls         | biz-internet |       |       |       |
| up          | 7            | 1000   | 0:00:03:48  | 0     |             |    |              |              |       |       |       |
| 192.168.2.4 | 192.168.1.12 | ipsec  | 12426       | 12426 | 10.17.17.17 | 17 | biz-internet | mpls         |       |       |       |
| up          | 7            | 1000   | 0:00:01:55  | 0     |             |    |              |              |       |       |       |
| 192.168.2.4 | 192.168.2.12 | ipsec  | 12426       | 12406 | 10.17.17.17 | 17 | biz-internet | biz-internet |       |       |       |
| up          | 7            | 1000   | 0:00:01:55  | 0     |             |    |              |              |       |       |       |
| 192.168.1.4 | 192.168.1.14 | ipsec  | 12366       | 12426 | 10.18.18.18 | 18 | mpls         | mpls         |       |       |       |
| up          | 7            | 1000   | 0:00:03:48  | 0     |             |    |              |              |       |       |       |
| 192.168.1.4 | 192.168.2.14 | ipsec  | 12366       | 12426 | 10.18.18.18 | 18 | mpls         | biz-internet |       |       |       |

```

up      7          1000      0:00:03:48  0
192.168.2.4 192.168.1.14 ipsec 12426 12426 10.18.18.18 18 biz-internet mpls
up      7          1000      0:00:01:55  0
192.168.2.4 192.168.2.14 ipsec 12426 12426 10.18.18.18 18 biz-internet biz-internet
up      7          1000      0:00:01:55  0
192.168.1.4 192.168.3.40 ipsec 12366 12366 10.19.19.19 19 mpls mpls
up      7          1000      0:00:03:48  0
192.168.1.4 192.168.4.40 ipsec 12366 12366 10.19.19.19 19 mpls biz-internet
up      7          1000      0:00:03:48  0
192.168.2.4 192.168.3.40 ipsec 12426 12366 10.19.19.19 19 biz-internet mpls
up      7          1000      0:00:01:55  0
192.168.2.4 192.168.4.40 ipsec 12426 12366 10.19.19.19 19 biz-internet biz-internet
up      7          1000      0:00:01:55  0

```

您还可以清除VEDGE-1上的控制连接以测试此场景 ( 也禁用TLOC ) :

```

local1.info: Mar 20 09:34:20 VEDGE-1 confd[897]: audit user: admin/60155 CLI 'clear control
connections'
local7.info: Mar 20 09:34:20 VEDGE-1 VDAEMON[1136]: %Viptela-VEEDGE-1-vdaemon-6-INFO-1400002:
Notification: 3/20/2020 9:34:20 control-connection-state-change severity-level:major host-
name:"VEDGE-1" system-ip:10.13.13.13 personality:vEdge peer-type:vsmart peer-system-ip:10.8.8.8
peer-vmanage-system-ip:0.0.0.0 public-ip:192.168.1.3 public-port:12946 src-color:biz-internet
remote-color:default uptime:"0:00:00:51" new-state:down
local7.info: Mar 20 09:34:20 VEDGE-1 VDAEMON[1136]: %Viptela-VEEDGE-1-vdaemon-6-INFO-1400002:
Notification: 3/20/2020 9:34:20 control-connection-state-change severity-level:major host-
name:"VEDGE-1" system-ip:10.13.13.13 personality:vEdge peer-type:vmanage peer-system-ip:10.7.7.7
peer-vmanage-system-ip:0.0.0.0 public-ip:192.168.1.1 public-port:12946 src-color:biz-internet
remote-color:mpls uptime:"0:00:01:09" new-state:down
local7.info: Mar 20 09:34:20 VEDGE-1 FTMD[1126]: %Viptela-VEEDGE-1-ftmd-6-INFO-1400002:
Notification: 3/20/2020 9:34:20 bfd-state-change severity-level:major host-name:"VEDGE-1"
system-ip:10.13.13.13 src-ip:192.168.2.4 dst-ip:192.168.1.6 proto:ipsec src-port:12426 dst-
port:12347 local-system-ip:10.13.13.13 local-color:"biz-internet" remote-system-ip:10.14.14.14
remote-color:"mpls" new-state:down deleted:false flap-reason:bfd-deleted

```

此次检查mpls和商业互联网颜色的正常运行时间 :

```

VEDGE-1# sh bfd sess | t

```

| DETECT      | TX           | SRC        | DST         | SITE  |             |       |              |              |       |
|-------------|--------------|------------|-------------|-------|-------------|-------|--------------|--------------|-------|
| SRC IP      | DST IP       | PROTO      | PORT        | PORT  | SYSTEM IP   | ID    | LOCAL COLOR  | COLOR        | STATE |
| MULTIPLIER  | INTERVAL     | UPTIME     | TRANSITIONS |       |             |       |              |              |       |
| -----       | -----        | -----      | -----       | ----- | -----       | ----- | -----        | -----        | ----- |
| 192.168.1.4 | 192.168.1.6  | ipsec      | 12366       | 12347 | 10.14.14.14 | 14    | mpls         | mpls         |       |
| up 7        | 1000         | 0:00:01:37 | 2           |       |             |       |              |              |       |
| 192.168.1.4 | 192.168.2.6  | ipsec      | 12366       | 12387 | 10.14.14.14 | 14    | mpls         | biz-internet |       |
| up 7        | 1000         | 0:00:01:37 | 2           |       |             |       |              |              |       |
| 192.168.2.4 | 192.168.1.6  | ipsec      | 12426       | 12347 | 10.14.14.14 | 14    | biz-internet | mpls         |       |
| up 7        | 1000         | 0:00:01:55 | 2           |       |             |       |              |              |       |
| 192.168.2.4 | 192.168.2.6  | ipsec      | 12426       | 12387 | 10.14.14.14 | 14    | biz-internet | biz-internet |       |
| up 7        | 1000         | 0:00:01:55 | 2           |       |             |       |              |              |       |
| 192.168.1.4 | 192.168.1.8  | ipsec      | 12366       | 12406 | 10.15.15.15 | 15    | mpls         | mpls         |       |
| up 7        | 1000         | 0:00:01:37 | 2           |       |             |       |              |              |       |
| 192.168.1.4 | 192.168.2.8  | ipsec      | 12366       | 12366 | 10.15.15.15 | 15    | mpls         | biz-internet |       |
| up 7        | 1000         | 0:00:01:37 | 2           |       |             |       |              |              |       |
| 192.168.2.4 | 192.168.1.8  | ipsec      | 12426       | 12406 | 10.15.15.15 | 15    | biz-internet | mpls         |       |
| up 7        | 1000         | 0:00:01:55 | 2           |       |             |       |              |              |       |
| 192.168.2.4 | 192.168.2.8  | ipsec      | 12426       | 12366 | 10.15.15.15 | 15    | biz-internet | biz-internet |       |
| up 7        | 1000         | 0:00:01:55 | 2           |       |             |       |              |              |       |
| 192.168.1.4 | 192.168.1.11 | ipsec      | 12366       | 12346 | 10.16.16.16 | 16    | mpls         | mpls         |       |
| up 7        | 1000         | 0:00:01:37 | 2           |       |             |       |              |              |       |
| 192.168.1.4 | 192.168.2.11 | ipsec      | 12366       | 12426 | 10.16.16.16 | 16    | mpls         | biz-internet |       |

```

up      7          1000      0:00:01:37  2
192.168.2.4 192.168.1.11 ipsec 12426 12346 10.16.16.16 16 biz-internet mpls
up      7          1000      0:00:01:55  2
192.168.2.4 192.168.2.11 ipsec 12426 12426 10.16.16.16 16 biz-internet biz-internet
up      7          1000      0:00:01:55  2
192.168.1.4 192.168.1.12 ipsec 12366 12426 10.17.17.17 17 mpls mpls
up      7          1000      0:00:01:37  2
192.168.1.4 192.168.2.12 ipsec 12366 12406 10.17.17.17 17 mpls biz-internet
up      7          1000      0:00:01:37  2
192.168.2.4 192.168.1.12 ipsec 12426 12426 10.17.17.17 17 biz-internet mpls
up      7          1000      0:00:01:55  2
192.168.2.4 192.168.2.12 ipsec 12426 12406 10.17.17.17 17 biz-internet biz-internet
up      7          1000      0:00:01:55  2
192.168.1.4 192.168.1.14 ipsec 12366 12426 10.18.18.18 18 mpls mpls
up      7          1000      0:00:01:37  2
192.168.1.4 192.168.2.14 ipsec 12366 12426 10.18.18.18 18 mpls biz-internet
up      7          1000      0:00:01:37  2
192.168.2.4 192.168.1.14 ipsec 12426 12426 10.18.18.18 18 biz-internet mpls
up      7          1000      0:00:01:55  2
192.168.2.4 192.168.2.14 ipsec 12426 12426 10.18.18.18 18 biz-internet biz-internet
up      7          1000      0:00:01:55  2
192.168.1.4 192.168.3.40 ipsec 12366 12366 10.19.19.19 19 mpls mpls
up      7          1000      0:00:01:37  2
192.168.1.4 192.168.4.40 ipsec 12366 12366 10.19.19.19 19 mpls biz-internet
up      7          1000      0:00:01:37  2
192.168.2.4 192.168.3.40 ipsec 12426 12366 10.19.19.19 19 biz-internet mpls
up      7          1000      0:00:01:55  2
192.168.2.4 192.168.4.40 ipsec 12426 12366 10.19.19.19 19 biz-internet biz-internet
up      7          1000      0:00:01:54  3

```

```

VEDGE-1# show control connections | t
LOCAL

```

```

LOCAL
          CFG      V
SYSTEM PEER SITE DOMAIN PRIVATE PRIVATE PUBLIC PUBLIC
SYSTEM ORG BEHIND PRIVATE PRIVATE CONTROLLER
INSTANCE TYPE ID ID IP PORT IP PORT IP PROTOCOL LOCAL
COLOR REMOTE COLOR IP PORT STATE UPTIME GROUP ID IP NAME PROXY
-----
0 vsmart 8 1 192.168.1.4 12366 192.168.1.3 12946 10.8.8.8
dtls mpls default 192.168.1.3 12946 up 0:00:01:41 0 -
- No
0 vsmart 8 1 192.168.2.4 12426 192.168.1.3 12946 10.8.8.8
dtls biz-internet default 192.168.1.3 12946 up 0:00:01:59 0 -
- No
0 vbond 0 0 192.168.1.4 12366 192.168.1.10 12346 0.0.0.0
dtls mpls mpls 192.168.1.10 12346 up 0:00:01:42 0 -
- -
0 vbond 0 0 192.168.2.4 12426 192.168.1.10 12346 0.0.0.0
dtls biz-internet biz-internet 192.168.1.10 12346 up 0:00:00:01 0 -
- -
0 vmanage 8 0 192.168.2.4 12426 192.168.1.1 12946 10.7.7.7
dtls biz-internet mpls 192.168.1.1 12946 up 0:00:01:59 0 -
- No

```

## 场景2.抖动原因：超时

您可以通过关闭底层中的接口在VEDGE-1上禁用TLOC（本例中为biz-internet）来重现此场景。

在VEDGE-1端禁用TLOC之前，VEDGE-2上的BFD状态：

```

VEDGE-2# show bfd sessions remote-color mpls system-ip 10.13.13.13 | t
          SRC      DST              SITE
DETECT    TX
SRC IP    DST IP    PROTO  PORT    PORT    SYSTEM IP    ID    LOCAL COLOR    COLOR    STATE
MULTIPLIER INTERVAL  UPTIME          TRANSITIONS
-----
192.168.1.8 192.168.1.4 ipsec  12406  12406  12366  10.13.13.13  13    mpls          mpls    up
7           1000      0:00:03:15  2
192.168.2.8 192.168.1.4 ipsec  12366  12366  12366  10.13.13.13  13    biz-internet  mpls    up
7           1000      0:00:03:15  2

```

### 在重现问题后登录VEDGE-2:

```

local7.info: Mar 20 10:00:04 VEDGE-2 FTMD[1119]: %Viptela-VEDGE-2-ftmd-6-INFO-1400002:
Notification: 3/20/2020 10:0:4 bfd-state-change severity-level:major host-name:"VEDGE-2" system-
ip:10.15.15.15 src-ip:192.168.1.8 dst-ip:192.168.2.14 proto:ipsec src-port:12406 dst-port:12426
local-system-ip:10.15.15.15 local-color:"mpls" remote-system-ip:10.18.18.18 remote-color:"biz-
internet" new-state:down deleted:false flap-reason:timeout
local7.info: Mar 20 10:00:05 VEDGE-2 FTMD[1119]: %Viptela-VEDGE-2-ftmd-6-INFO-1400002:
Notification: 3/20/2020 10:0:4 bfd-state-change severity-level:major host-name:"VEDGE-2" system-
ip:10.15.15.15 src-ip:192.168.2.8 dst-ip:192.168.4.40 proto:ipsec src-port:12386 dst-port:12366
local-system-ip:10.15.15.15 local-color:"biz-internet" remote-system-ip:10.19.19.19 remote-
color:"biz-internet" new-state:down deleted:false flap-reason:timeout

```

```

VEDGE-2# show bfd sessions remote-color mpls system-ip 10.13.13.13 | t
          SRC      DST              SITE
DETECT    TX
SRC IP    DST IP    PROTO  PORT    PORT    SYSTEM IP    ID    LOCAL COLOR    COLOR    STATE
MULTIPLIER INTERVAL  UPTIME          TRANSITIONS
-----
192.168.1.8 192.168.1.4 ipsec  12406  12406  12366  10.13.13.13  13    mpls          mpls    up
7           1000      0:00:21:56  3
192.168.2.8 192.168.1.4 ipsec  12386  12366  12366  10.13.13.13  13    biz-internet  mpls    down
7           1000      NA          1

```

### 场景3.抖动原因：不适用

您可以通过在上一个场景的底层接口上执行no shut来重现此场景。

```

local7.info: Mar 20 10:01:20 VEDGE-2 FTMD[1119]: %Viptela-VEDGE-2-ftmd-6-INFO-1400002:
Notification: 3/20/2020 10:1:18 bfd-state-change severity-level:major host-name:"VEDGE-2"
system-ip:10.15.15.15 src-ip:192.168.2.8 dst-ip:192.168.1.11 proto:ipsec src-port:12386 dst-
port:12346 local-system-ip:10.15.15.15 local-color:"biz-internet" remote-system-ip:10.16.16.16
remote-color:"mpls" new-state:up deleted:false flap-reason:na
local7.info: Mar 20 10:01:20 VEDGE-2 FTMD[1119]: %Viptela-VEDGE-2-ftmd-6-INFO-1400002:
Notification: 3/20/2020 10:1:18 bfd-state-change severity-level:major host-name:"VEDGE-2"
system-ip:10.15.15.15 src-ip:192.168.1.8 dst-ip:192.168.2.11 proto:ipsec src-port:12406 dst-
port:12426 local-system-ip:10.15.15.15 local-color:"mpls" remote-system-ip:10.16.16.16 remote-
color:"biz-internet" new-state:up deleted:false flap-reason:na

```

```

VEDGE-2# show bfd sessions remote-color mpls system-ip 10.13.13.13 | t
          SRC      DST              SITE
DETECT    TX
SRC IP    DST IP    PROTO  PORT    PORT    SYSTEM IP    ID    LOCAL COLOR    COLOR    STATE
MULTIPLIER INTERVAL  UPTIME          TRANSITIONS
-----
192.168.1.8 192.168.1.4 ipsec  12406  12406  12366  10.13.13.13  13    mpls          mpls    up
7           1000      0:00:22:32  3

```

```
192.168.2.8 192.168.1.4 ipsec 12386 12366 10.13.13.13 13 biz-internet mpls up
7          1000      0:00:00:04 1
```

## 场景4.抖动原因：远程关闭

您可以在VEDGE-1上以特定颜色（本例中为mpls）使用no control-connections命令重现此场景。

VEDGE-1上的日志：

```
vpn 0
interface ge0/0
ip address 192.168.1.4/24
tunnel-interface
encapsulation ipsec
color mpls
no control-connections
```

```
VEDGE-1# show control connections | t
LOCAL
```

| SYSTEM   | ORG     | BEHIND | SITE | DOMAIN | CFG         |         | V            |         | PUBLIC   | PUBLIC | CONTROLLER |       |
|--|---------|--------|------|--------|-------------|---------|--------------|---------|----------|--------|------------|-------|
|  |         |        |      |        | PRIVATE     | PRIVATE | PRIVATE      | PRIVATE |          |        |            |       |
| INSTANCE   | TYPE    | ID     | ID   | IP     | IP          | PORT    | PORT         | IP      | PORT     | IP     | PROTOCOL   | LOCAL |
| COLOR  | REMOTE  | COLOR  | IP   | PORT   | STATE       | UPTIME  | GROUP        | ID      | IP       | NAME   | PROXY      |       |
| 0  | vsmart  | 8      | 1    |        | 192.168.2.4 | 12426   | 192.168.1.3  | 12946   | 10.8.8.8 | dtls   | -          | -     |
| biz-internet default 192.168.1.3 12946 up 0:00:17:54 0 - -       |         |        |      |        |             |         |              |         |          |        |            |       |
| No   |         |        |      |        |             |         |              |         |          |        |            |       |
| 0  | vbond   | 0      | 0    |        | 192.168.2.4 | 12426   | 192.168.1.10 | 12346   | 0.0.0.0  | dtls   | -          | -     |
| biz-internet biz-internet 192.168.1.10 12346 up 0:00:02:37 0 - - |         |        |      |        |             |         |              |         |          |        |            |       |
| -  |         |        |      |        |             |         |              |         |          |        |            |       |
| 0  | vmanage | 8      | 0    |        | 192.168.2.4 | 12426   | 192.168.1.1  | 12946   | 10.7.7.7 | dtls   | -          | -     |
| biz-internet mpls 192.168.1.1 12946 up 0:00:22:44 0 - -          |         |        |      |        |             |         |              |         |          |        |            |       |
| No   |         |        |      |        |             |         |              |         |          |        |            |       |

VEDGE-2上的日志：

```
local7.info: Mar 20 11:36:40 VEDGE-2 FTMD[1119]: %Viptela-VEDGE-2-ftmd-6-INFO-1400002:
Notification: 3/20/2020 11:36:40 bfd-state-change severity-level:major host-name:"VEDGE-2"
system-ip:10.15.15.15 src-ip:192.168.1.8 dst-ip:192.168.1.4 proto:ipsec src-port:12406 dst-
port:12406 local-system-ip:10.15.15.15 local-color:"mpls" remote-system-ip:10.13.13.13 remote-
color:"mpls" new-state:down deleted:false flap-reason:remote-down
local7.info: Mar 20 11:36:40 VEDGE-2 FTMD[1119]: %Viptela-VEDGE-2-ftmd-6-INFO-1400002:
Notification: 3/20/2020 11:36:40 bfd-state-change severity-level:major host-name:"VEDGE-2"
system-ip:10.15.15.15 src-ip:192.168.2.8 dst-ip:192.168.1.4 proto:ipsec src-port:12386 dst-
port:12406 local-system-ip:10.15.15.15 local-color:"biz-internet" remote-system-ip:10.13.13.13
remote-color:"mpls" new-state:down deleted:false flap-reason:remote-down
local7.info: Mar 20 11:36:41 VEDGE-2 FTMD[1119]: %Viptela-VEDGE-2-ftmd-6-INFO-1400002:
Notification: 3/20/2020 11:36:41 bfd-state-change severity-level:major host-name:"VEDGE-2"
system-ip:10.15.15.15 src-ip:192.168.1.8 dst-ip:192.168.1.4 proto:ipsec src-port:12406 dst-
port:12406 local-system-ip:10.15.15.15 local-color:"mpls" remote-system-ip:10.13.13.13 remote-
color:"mpls" new-state:up deleted:false flap-reason:na
local7.info: Mar 20 11:36:41 VEDGE-2 FTMD[1119]: %Viptela-VEDGE-2-ftmd-6-INFO-1400002:
Notification: 3/20/2020 11:36:41 bfd-state-change severity-level:major host-name:"VEDGE-2"
system-ip:10.15.15.15 src-ip:192.168.2.8 dst-ip:192.168.1.4 proto:ipsec src-port:12386 dst-
port:12406 local-system-ip:10.15.15.15 local-color:"biz-internet" remote-system-ip:10.13.13.13
remote-color:"mpls" new-state:up deleted:false flap-reason:na
VEDGE-2# show bfd sessions remote-color mpls system-ip 10.13.13.13 | t
```

| DETECT      | TX          | SRC        | DST         |       |             | SITE |              |       |       |    |
|-------------|-------------|------------|-------------|-------|-------------|------|--------------|-------|-------|----|
| SRC IP      | DST IP      | PROTO      | PORT        | PORT  | SYSTEM IP   | ID   | LOCAL COLOR  | COLOR | STATE |    |
| MULTIPLIER  | INTERVAL    | UPTIME     | TRANSITIONS |       |             |      |              |       |       |    |
| 192.168.1.8 | 192.168.1.4 | ipsec      | 12406       | 12406 | 10.13.13.13 | 13   | mpls         |       | mpls  | up |
| 7           | 1000        | 0:00:05:27 | 16          |       |             |      |              |       |       |    |
| 192.168.2.8 | 192.168.1.4 | ipsec      | 12386       | 12406 | 10.13.13.13 | 13   | biz-internet |       | mpls  | up |
| 7           | 1000        | 0:00:05:27 | 9           |       |             |      |              |       |       |    |

## 相关信息

- [排除双向转发检测和数据平面连接问题](#)
- [技术支持和文档 - Cisco Systems](#)