

Traffic Steering by Dropping Invalid Paths

If the SR-TE policy has no valid paths defined, the paths are dropped, and the traffic that is being steered through the policy falls back to the default (unconstrained IGP) forwarding path. Also, when an SR-TE policy carrying best-effort traffic fails, the traffic is re-routed and which in turn impacts the SLA(service level agreements) for premium traffic.

To solve the issue of SR-TE policy failing, the traffic in the data plane is dropped but kept in the control plane. Therefore, other segment routing policies, which could be potentially be carrying premium traffic, are not impacted.

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Feature Information for Traffic Steering by Dropping Invalid Paths

The following table provides release information about the feature or features described in this module. This table lists only the software release that introduced support for a given feature in a given software release train. Unless noted otherwise, subsequent releases of that software release train also support that feature.

UseCisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to www.cisco.com/go/cfn. An account on Cisco.com is not required.

Table 1: Feature Information for Performance Measurement for Traffic Engineering

Feature Name	Releases	Featuure Information
Traffic Steering By Dropping Invalid Paths	Cisco IOS XE Bengaluru 17.5	If the SR-TE policy fails, the traffic in the data plane is dropped but kept in the control plane. Therefore, other segment routing policies, potentially carrying premium traffic, are not impacted.

Overview

If the SR-TE policy has no valid paths defined, the paths are dropped, and the traffic that is being steered through the policy falls back to the default (unconstrained IGP) forwarding path. Also, when an SR-TE policy carrying best-effort traffic fails, the traffic is re-routed and which in turn impacts the SLA(service level agreements) for premium traffic.

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This feature can be configured by using the **path-invalidation drop** command.

Before You Begin

This feature should not be enabled if you have already configured segment routing BFD or performance liveness monitoring. If this feature is enabled, segment routing BFD or performance liveness notification is ignored. In such a scenario, no logging or syslog notification is generated for segment routing BFD or performance liveness events.

Note that if the SR-TE policy is in Down state and this feature is configured, the state of the SR-TE policy is not affected.

Benefits

• Configuring this feature ensures that other segment routing policies that are configured to route premium traffic are not impacted thereby ensuring that SLA guidelines are not affected.

Restrictions

• This feature cannot be enabled in combination with segment routing BFD or performance monitoring liveness check.

How to Configure Traffic Steering by Dropping Invalid Paths

Configuring for a PCC Profile

This configuration results in a PCE-initiated policy having the path-invalidation functionality enabled for a policy instantiated with a profile ID matching the configured value:

```
segment-routing traffic-eng
pcc
profile <number >
   steering
   path-invalidation drop
```

Configuring for Static Policies

This configuration results in a configuring path validation drop for a segment routing static policy:

```
segment-routing traffic-eng
policy <name>
   steering
   path-invalidation drop
```

Configuring for On-Demand Next Hop for SR-TE Policies

This configuration results in a configuring path validation drop for an on-demand segment routing policy for a specific color:

```
segment-routing traffic-eng
on-demand color <>
  steering
  path-invalidation drop
```

Show Commands

Use the **show segment-routing traffic-eng policy name** command to view path invalidation event types and invalidation drop status.

```
device#show segment-routing traffic-eng policy name foo detail
 Name: foo (Color: 10 End-point: 192.168.0.8)
   Owners : CLI
   Status:
     Admin: up, Operational: up for 00:00:08 (since 09-17 10:19:54.536)
   Candidate-paths:
     Preference 100 (CLI):
       Dynamic (active)
        Status: Invalidation drop
        Metric Type: TE
   Attributes:
     Binding SID: 20
      Allocation mode: dynamic
       State: Programmed
     Autoroute:
       Include all
   Tunnel ID: 65536 (Interface Handle: 0x9)
   Per owner configs:
     CLI
       Binding SID: dynamic
   Stats:
     5 minute output rate 0 bits/sec, 0 packets/sec
     Packets: 0 Bytes: 0
   Event history:
                                         Event type
                                                                Context: Value
     Timestamp
                        Client
                                            -----
                                                                  ----: ----
     09-17 10:19:54.536 CLI
                                         Policy created
                                                                 Name: CLI
     09-17 10:19:54.537 CLI
                                         Path Invalidation
                                                                Drop: Configured
     09-17 10:19:58.744 CLI
                                          Set colour
                                                                 Colour: 10
     09-17 10:19:58.744 CLI
                                                            End-point: 192.168.0.8
                                       Set end point
     09-17 10:19:58.752 CLI
                                         Set dynamic
                                                                 Path option: dynamic
     09-17 10:19:58.753 CLI
                                          BSID allocated
                                                                 FWD: label 20
     09-17 10:19:58.755 FH Resolution
                                        Policy state UP
                                                                Status: PATH RESOLVED
```

CP:	100				
	09-17	10:19:58.760	FH Resolution	REOPT triggered	Status: REOPTIMIZED
CP:	100				
	09-17	10:19:58.780	CLI	Path Invalidation	Drop: Unconfigured
	09-17	10:19:59.537	CLI	Path Invalidation	Drop: Set
	09-17	10:20:00.853	FH Resolution	Path Invalidation	Status: Drop
	09-17	10:20:01.853	FH Resolution	Path Invalidation	Status: No Drop
	09-17	10:20:02.853	FH Resolution	Path Invalidation	Status: Drop