

SRv6 Traffic Engineering

This chapter describes the commands used to configure and use SRv6 Traffic Engineering.

To use commands of this module, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using any command, contact your AAA administrator for assistance.

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accounting prefixes ipv6 mode

To enable SRv6 traffic accounting, use the **accounting prefixes ipv6 mode** command in XR Config mode.

accounting prefixes ipv6 mode per-prefix per-nexthop srv6-locator

Syntax Description

per-prefix	Enables accounting for every prefix.
per-nexthop	Enables accounting for every prefix and nexthop.
srv6-locator	Enables accounting only for Segment-routing SRv6 locator.

Command Default

None

Command Modes

XR Config

Command History

Release	Modification
Release 7.10.1	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

The following example shows how to enable SRv6 traffic accounting:

```
Router(config)#accounting prefixes ipv6 mode per-prefix per-nexthop srv6-locators
```

policy srv6 locator

To create the SRv6-TE policy and configure customized per-policy locator and BSID behavior, use the **policy srv6 locator** command in the SR-TE interface submode.

policy *policy-name* **srv6 locator** *locatorname* **binding-sid dynamic behavior ub6-encaps-reduced Binding-SID**

Syntax Description

policy *policy-name*	Specifies the policy name. The name can be a maximum of 59 characters.
locator *locator*	Specifies the locator name. The locator name can be a maximum of 64 characters.
binding-sid dynamicbehavior	Configures the BSID dynamic behavior.
ub6-encaps-reduced	Configures BSID with reduced encapsulation behavior. Reduces the length of the SRH by excluding the first SID in the IPv6 header.
ub6-insert-reduced	Configures BSID with insert reduced behavior.

Command Default

None

Command Modes

SR-TE interface submode

Command History

Release	Modification
Release 7.10.1	This command was introduced.

Usage Guidelines

If you don’t specify a customized per-policy locator and BSID behavior, the policy uses the global locator and BSID behavior.

The following example shows how to create the SRv6-TE policy and configure customized per-policy locator and BSID behavior:

```
RP/0/RP0/CPU0:ios(config-sr-te)#policy name
RP/0/RP0/CPU0:ios(config-sr-te-policy)#srv6
RP/0/RP0/CPU0:ios(config-sr-te-policy-srv6)#locator loc1 binding-sid dynamic behavior
ub6-encaps-reduced
RP/0/RP0/CPU0:ios(config-sr-te-policy-srv6)#
```

segment-routing traffic-eng srv6

To configure SRv6-TE, use the **segment-routing srv6** command in the SR-TE interface submode. To disable SRv6-TE, use the **no** form of this command.

segment-routing traffic-eng srv6

Syntax Description

This command has no keywords or arguments.

Command Default

None

Command Modes

SR-TE interface submode

Command History

Release	Modification
Release 7.10.1	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

The following example shows how to configure SRv6-TE.

```
Router(config)#segment-routing traffic-eng
Router(config-sr-te)#srv6
Router(config-sr-te-srv6)#exit
Router(config-sr-te)#
```

srv6 locator

To configure SRv6-TE locator and binding SID (BSID) behavior, use the **srv6 locator** command in the SR-TE interface submode.

Srv6 locator *locatorname* **binding-sid dynamic behavior** { **ub6-encaps-reduced** | **ub6-insert-reduced** }

Syntax Description

locator *locator*	Specifies the locator name. The locator name can be a maximum of 64 characters.
binding-sid dynamicbehavior	Configures the BSID dynamic behavior.
ub6-encaps-reduced	Configures BSID with reduced encapsulation behavior. Reduces the length of the SRH by excluding the first SID in the SRH of the pushed IPv6 header.
ub6-insert-reduced	Configures BSID with insert reduced behavior.

Command Default

None

Command Modes

SR-TE interface submode

Command History

Release	Modification
Release 7.10.1	This command was introduced.

Usage Guidelines

If you don’t specify a customized per-policy locator and BSID behavior, the policy uses the global locator and BSID behavior.

The following example shows how to configure SRv6-TE locator and binding SID (BSID) behavior.

```
Router#configure
Router(config)#segment-routing traffic-eng
Router(config-sr-te)#srv6 locator loc1 binding-sid dynamic behavior ub6-encaps-reduced
```

srv6 maximum-sid-depth

To customize the Maximum SID Depth (MSD) signaled by PCC during PCEP session establishment, use the **srv6 maximum-sid-depth** command in SR-TE srv6 submode.

maximum-sid-depth *value*

Syntax Description

maximum-sid-depth *value*	Specifies the Maximum SID Depth (MSD) value. The MSD is expressed as a number uSIDs. The number of uSID is expressed as a number of carriers and the number of uSID per carrier. The range is from 1-255.

Command Default

None

Command Modes

SR-TE srv6 submode

Command History

Release	Modification
Release 7.10.1	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

The following example shows how to customize the MSID:

```
Router(config)#segment-routing traffic-eng
Router(config-sr-te)#srv6
Router(config-sr-te-srv6)#maximum-sid-depth 13
Router(config-sr-te-srv6)#exit
Router(config-sr-te)#
```

segment-lists segment-list

To configure SRv6 explicit segment list, use the **segment-lists segment-list** command in SR-TE interface submode.

segment-lists segment-list *name* **srv6** [**index** *number* **sid** *sid-id* | **topology-check**]

Syntax Description

name	Specifies the name for the segment list.
srv6	Enables the SRv6 segment-list configuration.
index*number*	Specifies the index number. The range is from 1-65535.
sid*sid-id*	Specifies the SRv6 SID
topology-check *locator*	Enables SID verification.

Command Default

None

Command Modes

SR-TE interface submode

Command History

Release	Modification
Release 7.10.1	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

The following example shows how to configure SRv6 explicit segment list:

```
Router(config)# segment-routing traffic-eng
Router(config-sr-te)# segment-lists
Router(config-sr-te-segment-lists)# srv6
Router(config-sr-te-sl-global-srv6)# sid-format usid-f3216
Router(config-sr-te-sl-global-srv6)# exit
Router(config-sr-te-segment-lists)# segment-list p1_r8_1
Router(config-sr-te-sl-srv6)# index 10 sid FCBB:BB00:10:feff::
Router(config-sr-te-sl-srv6)# index 15 sid FCBB:BB00:100:fe00::
Router(config-sr-te-sl-srv6)# index 20 sid FCBB:BB00:1::
Router(config-sr-te-sl-srv6)# index 30 sid FCBB:BB00:1:fe00::
Router(config-sr-te-sl-srv6)# index 40 sid FCBB:BB00:fe00::
Router(config-sr-te-sl-srv6)# index 50 sid FCBB:BB00:5::
Router(config-sr-te-sl-srv6)# index 60 sid FCBB:BB00:6::
```

segment-lists srv6

To enable SID validation globally for all SRv6 explicit segment lists, use the **segment-lists srv6** command in SR-TE interface submode.

segment-lists srv6 [**sid-format usid-f3216** | **topology-check**]

Syntax Description

sid-format usid-f3216	Specifies SID format F3216 micro SID.
topology-check *locator*	Enables SID verification.

Command Default

None

Command Modes

SR-TE interface submode

Command History

Release	Modification
Release 7.10.1	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

The following example shows how to specify SID format for all SRv6 explicit segment lists:

```
Router(config)#segment-routing traffic-eng
Router(config-sr-te)#segment-lists
Router(config-sr-te-segment-lists)#srv6
Router(config-sr-te-sl-global-srv6)#sid-format usid-f3216
Router(config-sr-te-sl-global-srv6)#exit
Router(config-sr-te-segment-lists)#
```

The following example shows how to enable SID verification:

```
Router(config)#segment-routing traffic-eng
Router(config-sr-te)#segment-lists
Router(config-sr-te-segment-lists)#srv6
Router(config-sr-te-sl-global-srv6)#topology-check
Router(config-sr-te-sl-global-srv6)#exit
Router(config-sr-te-segment-lists)#
```