



Configure Segment Routing Microloop Avoidance

The Segment Routing Microloop Avoidance feature enables link-state routing protocols, such as IS-IS and OSPF, to prevent or avoid microloops during network convergence after a topology change.

- [About Segment Routing Microloop Avoidance, on page 1](#)
- [Segment Routing Microloop Avoidance Limitations, on page 1](#)
- [Configure Segment Routing Microloop Avoidance for IS-IS, on page 1](#)

About Segment Routing Microloop Avoidance

Microloops are brief packet loops that occur in the network following a topology change (link down, link up, or metric change events). Microloops are caused by the non-simultaneous convergence of different nodes in the network. If nodes converge and send traffic to a neighbor node that has not converged yet, traffic may be looped between these two nodes, resulting in packet loss, jitter, and out-of-order packets.

The Segment Routing Microloop Avoidance feature detects if microloops are possible following a topology change. If a node computes that a microloop could occur on the new topology, the node creates a loop-free SR-TE policy path to the destination using a list of segments. After the RIB update delay timer expires, the SR-TE policy is replaced with regular forwarding paths.

Segment Routing Microloop Avoidance Limitations

For IS-IS, Segment Routing Microloop Avoidance is not supported when incremental shortest path first (ISPF) is configured.

Configure Segment Routing Microloop Avoidance for IS-IS

This task describes how to enable Segment Routing Microloop Avoidance and set the Routing Information Base (RIB) update delay value for IS-IS.

Before you begin

Ensure that the following topology requirements are met:

- Router interfaces are configured as per the topology.

- Routers are configured with IS-IS.
- Segment routing for IS-IS is configured. See [Enabling Segment Routing for IS-IS Protocol](#).

Procedure

	Command or Action	Purpose
Step 1	configure Example: RP/0/RP0/CPU0:router# configure	Enters mode.
Step 2	router isis <i>instance-id</i> Example: RP/0/RP0/CPU0:router(config)# router isis 1	Enables IS-IS routing for the specified routing instance, and places the router in router configuration mode. You can change the level of routing to be performed by a particular routing instance by using the is-type router configuration command.
Step 3	address-family ipv4 [unicast] Example: RP/0/RP0/CPU0:router(config-isis)# address-family ipv4 unicast	Specifies the IPv4 address family and enters router address family configuration mode.
Step 4	microloop avoidance segment-routing Example: RP/0/RP0/CPU0:router(config-isis-af)# microloop avoidance segment-routing	Enables Segment Routing Microloop Avoidance.
Step 5	microloop avoidance rib-update-delay <i>delay-time</i> Example: RP/0/RP0/CPU0:router(config-isis-af)# microloop avoidance rib-update-delay 3000	Specifies the amount of time the node uses the microloop avoidance policy before updating its forwarding table. The <i>delay-time</i> is in milliseconds. The range is from 1-60000. The default value is 5000.