

This Former Spirent Business is Now Part of VIAVI

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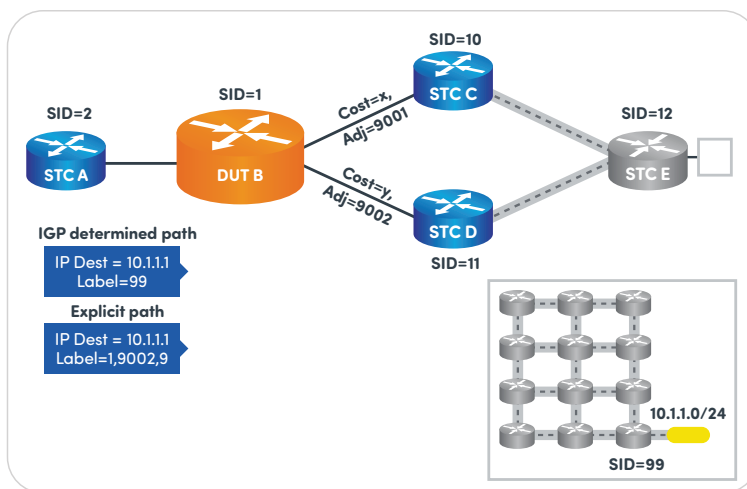
Spirent AION

Spirent TestCenter Segment Routing Bundle

Overview

Segment Routing is based on source routing. The key motivation behind Segment Routing is to reduce the complexity that exists in today's network nodes due to MPLS control plane.

Segment Routing obviates the need for MPLS control plane by using IGP protocols such as OSPF, ISIS, and BGP to distribute the forwarding labels or segment IDs. As a result, only the ingress node needs to maintain the state for the traffic flows but the MPLS forwarding plane can be re-used for forwarding traffic using segment routing labels.



Since the forwarding state of the traffic flow is in the Segment Routing header of the packet, it paves the way for network programmability or SDN functionality with less disruptive changes to the existing network. Policies may be defined administratively at the ingress node or dynamically using a centralized SDN controller.

Segment Routing is an evolutionary approach towards SDN and reducing complexity in the existing network nodes, in addition to testing the scalability, functionality, performance of the protocol implementation, it is important to verify the interoperation between SR and non-SR capable network nodes.

Spirent Segment Routing Emulation enables functional, scalability, performance and interoperability testing of the Segment Routing protocol. The solution supports OSPF, ISIS, and BGP extensions for Segment Routing.

This package is an integrated component of Spirent TestCenter and works with other Spirent TestCenter components. Segment Routing Bundle protocols can be combined with SDN, Routing and Switching, Access or Data Center protocols.

- **Realistic Network Emulation—**
emulate complex, real world network topologies and functional, scalability, performance, high availability and failover convergence of Segment Routing networks under typical and extreme traffic load conditions
- **Comprehensive Testing—**
verify control plane topology setup, test load balancing, traffic isolation, interworking between segment routing and non-segment routing devices
- **Increased Productivity—**
configuration wizards allow quick setup of large-scale test topologies, complex test scenarios can be easily automated using segment routing commands via Command Sequencer
- **Cost-Effective Solution—**
scalability testing for maximum number of segments per node and benchmarking number of VRFs, PEs for VPN over segment routing test scenarios

Features / Support

- Interactive commands to age or advertise segment routing information
- Auto generating segment routing objects and TLVs in the IGP protocol wizards
- OSPF, ISIS, & BGP extensions for Segment Routing
- Data plane traffic binding with segment routing control plane
- Segment routing LAN Adj SID
- Segment routing ISIS Mapping server TLV
- Segment routing with up to 20 Label stack with SR MPLS labels
- Segment routing with L2VPN (VPLS, VPWS (martini) and L3VPN (6PE/6VPE) wizards
- ISIS segment routing for IPv6 – TE
- IGP (ISIS, OSPFv2 and OSPFv3) Flex Algorithm
- IGP (ISIS, OSPFv2 and OSPFv3) Application-Specific Link Attributes
- OSPFv3 segment routing for IPv6
- BGP L3VPN and EVPN based on SRv6
- BGP and ISIS SRv6 “micro segment” (uSID for short) with compressed SRv6 Segment-List
- Wireshark dissector for segment routing objects and TLVs

Technical Specifications

Segment Routing	
RFC 8665	OSPF Extensions for Segment Routing
RFC 8666	OSPFv3 Extensions for Segment Routing
RFC 8667	IS-IS Extensions for Segment Routing
draft-ietf-isis-segment-routing-msd-15	Signaling MSD (Maximum SID Depth) using IS-IS
RFC 8669	Segment Routing Prefix Segment Identifier Extensions for BGP
draft-ietf-lsr-flex-algo-16	IGP Flexible Algorithm
draft-ietf-idr-segment-routing-te-policy-14	Advertising Segment Routing Policies in BGP
RFC 8919	IS-IS Application-Specific Link Attributes
RFC 8920	OSPF Application-Specific Link Attributes
draft-cheng-spring-mpls-path-segment-00	Path Segment in MPLS Based Segment Routing Network
draft-ietf-mpls-spring-lsp-ping-02	Label Switched Path (LSP) Ping/Trace for Segment Routing Networks Using MPLS Dataplane
SRv6	
RFC 8986	Segment Routing over IPv6 (SRv6) Network Programming
draft-previdi-isis-ipv6-prefix-sid-01	Segment Routing IPv6 Prefix-SID
draft-li-ospf-ospfv3-srv6-extensions-07	OSPFv3 Extensions for SRv6
draft-ietf-6man-segment-routing-header-14	IPv6 Segment Routing Header (SRH)
draft-ietf-lsr-isis-srv6-extensions-17	IS-IS Extensions to Support Routing over IPv6 Dataplane
draft-bonica-6man-comp-rtg-hdr-08	The IPv6 Compact Routing Header (CRH)
draft-ietf-bess-srv6-services-15	SRv6 BGP based Overlay Services
draft-filsfils-spring-net-pgm-extension-srv6-usid-10	Network Programming extension: SRv6 uSID instruction
CMCC xxx	General Technical Requirements for Generalized SRv6

Ordering Information

Product Number	Description
AON-PB-SRT*	AION Segment Routing Bundle

*Requires AION Routing & Switching (AON-PB-RTSW) license.

Bundles are available in different number of seats, contact your Spirent Sales Representative to find the right combination for your testing needs.

About AION

Spirent AION is a flexible delivery platform that enables users to achieve improved deployment and provisioning for all their cloud and network testing needs. It is designed to deliver ultimate flexibility in how Spirent TestCenter platforms are purchased and utilized.

The extended platform combines a wealth of industry-leading test solutions with a flexible licensing architecture to support a wide range of next-generation solution-based domain applications.

AION offers a centralized management hub to help leverage software and hardware functionalities across all lab users and locations for a simplified management and decision-making process:

- **Flexible purchasing options** available via subscription, consumption-based, and perpetual plans, with the ability to license different bandwidth, scale, and protocol bundles.
- **Flexible deployment options** offered include cloud-delivery, on-prem, and laptop-hosted licensing services.

Enhanced user serviceability delivers always-on platform services from auto-discovery and inventory management to user and workspace administration, notifications, and log aggregation.