Junos Segment Routing (JSR)

Engineering Simplicity

COURSE LEVEL

Advanced

INTENDED AUDIENCE

The primary audiences for this course are the following:

- Service provider design engineers
- Campus and enterprise design engineers

PREREQUISITES

The following are the prerequisites for this course:

- Understanding of the OSI model
- *Advanced Junos Enterprise Routing* (AJER) course or equivalent knowledge strongly recommended
- Intermediate knowledge of MPLS functions
- Intermediate to advanced Junos CLI experience

CONTACT INFORMATION
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COURSE OVERVIEW

This one-day course is designed to provide in-depth instruction segment routing, or Source Packet Routing in Networking (SPRING). The course focuses on the configuration of Juniper Networks routing and switching devices to support segment routing using MPLS switching. Topics include functional concepts, the configuration of the IGPs used to propagate label information within a domain, segment routing traffic engineering using BGP colored routes, and redundancy/high availability concepts including BFD, Topology Independent Loop-Free Alternative (TI-LFA), Anycast Segments, and the implementation of link aggregation in a segment routing design.

OBJECTIVES

After successfully completing this course, you should be able to:

- Describe and configure segment routing.
- Configure traffic engineering with segment routing static paths.
- Configure traffic engineering paths using BGP and colored route tags.
- Describe and configure TI-LFA.
- Describe use cases for Anycast segments and configure Anycast segments.
- Configure LAG in a segment routing design.

CONTENTS

DAY 1

1	**Course Introduction**

2	**Segment Routing Overview**

- MPLS forwarding overview
- SPRING concepts
- Segment routing architecture
- SDN and segment routing overview

3	**Configuring Segment Routing**

- Segment Types
- Configuring, monitoring, and verifying segment routing
- Configuring, monitoring, and verifying segment routing traffic engineering

LAB: Configuring Segment Routing

- Basic segment routing
- Segment routing traffic engineering (TE)

4	**Segment Routing Redundancy and High Availability**

- IP/MPLS Protection Mechanisms
- Topology Independent Loop-free Alternative
- Link and node protection
- Fate sharing
- Label stacking for backup paths
- Anycast segments
- Segment routing with link aggregation groups (LAG)

LAB: Segment Routing Redundancy and High Availability

- Configuring TI-LFA
- Configuring anycast segments
- Configuring link-specific labels for LAG

A	**NorthStar Segment Routed LSPs**

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