

Segment Routing

Course Outline

- **Introduction to Segment Routing**
 - Explain the Next Generation SP Core Environment
 - Explain the Segment Routing Concept
 - Different type of Segments ID's
 - Explain the concept of SRGB (Segment Routing Global Block)
- **Segment Routing with IGP (OSPF & ISIS)**
 - IGP Control Plane
 - Integration of SRGB with IGP (OSPF & ISIS)
 - Prefix and Adjacency SID
 - Concept of Multi Area in SR for OSPF and ISIS
- **Topology Independent Loop-Free Alternative – TI-LFA**
 - Introduction to LFA Technology
 - Understanding of Extension from LFA to TI-LFA
 - Protect SR Traffic with TI-LFA
 - Protect LDP Traffic with TI-LFA
- **Migration & Internetworking Scenarios between LDP and SR**
 - Understanding of Data Flow with LDP and SR
 - Migration Process from LDP to SR
 - Concept of Mapping Server in SR
 - Different LDP and SP internetworking Scenarios and their Data plane flows.
 - Behavior of TI-LFA with LDP & SR Internetworking Scenarios.
- **Segment Routing Traffic Engineering**
 - Explore the concept of Traffic Engineering
 - Explain the Traffic Engineering with Segment Routing
 - Explain Anycast SID and Binding SID
 - SR-TE with Configured Tunnels
 - SR-TE with BGP Dynamics
 - Explaining the Concept of Multi-Domain SR-TE
 - Multi-Domain SR-TE with PCE for use of Path Computation
 - Multi-Domain SR-TE with BGP-LS for distributing topology information between the Domains.
 - Multi-Domain SR-TE using configured Tunnel Interfaces
 - Multi-Domain SR-TE using ODN (On Demand Next Hope)
- **BGP Prefix Segment**
 - Explain the role and advantages of BGP in the Modern Data Centers.
 - Operation of BGP Prefix-SID
 - Concept of Egress Peer Engineering
 - Different Types of BGP Peering Segments
 - Understanding of Egress Peer Engineering

Labs:

Lab-1: Implementing Segment Routing on Cisco IOS XR

Lab-2: Migration Practical from LDP to Segment Routing on Cisco IOS XR

Lab-3: Implementing TI-LFA Fast Reroute with Segment Routing on Cisco IOS XR

Lab-4: Implementing Segment Routing Traffic Engineering (SR-TE) on Cisco IOS XR

Lab-5: Implementing Multi Domain SR-TE on Cisco IOS XR

Lab-6: Implementing BGP Segment Routing