

Technology Primer: VxLAN and Segment Routing

VxLAN is a data plane encapsulation technique and Segment Routing is a label distribution mechanism which are popularly used in Network Virtualization. Service Provider networks and data centers extensively leverage server virtualization for flexibility, scalability and efficiency in compute resource use. To gain all the benefits of server virtualization it should go hand-in-hand with network virtualization. This course provides a conceptual understanding of the benefits, capabilities and high-level operations of VxLANs and Segment Routing in the context of Network Virtualization.

Intended Audience

This course is designed for an audience who needs to develop a high-level technical understanding of VxLANs and Segment Routing.

Objectives

After completing this course, the student will be able to:

- List the motivations behind using VxLANs and Segment Routing
- Describe VxLAN protocol
- Describe VxLAN operations
- Describe Segment Routing protocol
- Describe Segment Routing operations
- List Use Cases for use of VxLANs and Segment Routing

Prerequisites

- None

Required Equipment

- None

Course Outline

1. Motivations

- 1.1 VxLAN defined
- 1.2 Segment Routing defined
- 1.3 What problem do these technologies solve?
- 1.4 Infrastructure versus Tenant networks

2. VxLAN

- 2.1 Configuration
- 2.2 Operations
- 2.3 Protocols involved
- 2.4 Intra-data center use case
- 2.5 Inter-data center use case

3. Segment Routing

- 3.1 Segment Routing – IPv6 and MPLS
- 3.2 Configuration
- 3.3 Operations
- 3.4 Intra-data center use case
- 3.5 Inter-data center use case
- 3.6 Core network use case

4. Use Cases

- 4.1 EVPN (Ethernet VPN using BGP)