MPLS and Segment Routing Automation Using NorthStar (MSRN)

ID MSRN **Prix** US $ 4 000,– (Hors Taxe) **Durée** 4 jours

A qui s'adresse cette formation

This course benefits individuals responsible for managing MPLS networks that want to add automation using the NorthStar Controller and NorthStar Planner, including individuals in professional services, sales and support organizations, and the end users.

Pré-requis

The following are the prerequisites for this course:

- Understanding of the OSI model
- Junos OS configuration experience—the Introduction to the Junos Operating System (IJOS) course or equivalent
- Advanced MPLS knowledge—the Junos MPLS Fundamentals (JMF) course or equivalent

Objectifs

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

- Describe the various WAN domains.
- Describe the use cases for NorthStar.
- Describe the use cases for NorthStar Planner.
- Describe the usage of PCEP.
- Describe RSVP signaling using the CSPF algorithm.
- Describe the NorthStar VMs and their processes.
- Describe the post installation setup process.
- Describe the behavior of topology discovery.
- Describe the configuration of IGP topology discovery.
- Describe the configuration of BGP-LS topology discovery.
- Describe how to access the NorthStar Controller Operator and Planner user interfaces.
- Describe the basic features of the NorthStar Controller Operator user interface.
- Describe the various LSP types.
- Configure PCC controlled LSPs.
- Configure PCE delegated LSPs.
- Configure PCE initiated LSPs.
- Monitor LSPs from the NorthStar Operator user interface.
- Describe primary, secondary, and standby LSPs.
- Describe symmetric pairs of LSPs.
- Describe diversity groups.
- Describe using Junos MPLS LSP templates.
- Describe LSP calendaring.
- Describe Inter-AS LSPs.
- Describe Egress Peer Engineering.
- Describe how to provision multiple LSPs.
- Describe LSP optimization.
- Configure Segment Routing.
- Provision Segment Routed LSPs.
- Manage NorthStar using the REST API.
- Troubleshoot NorthStar Controller.
- Create P2MP LSPs.
- Explain the features, capabilities, and benefits of NorthStar Planner and how they work to optimize WAN design.
- Access NorthStar Planner and navigate and customize the NorthStar Planner administrative interface.
- Access NorthStar Planner Web UI.
- Explain different methods of creating a network model.
- Manage different files that make up a network model and understand how these files are organized.
- Modify a network model by performing tasks such as adding links, nodes, and sites and save these changes to a modeled network.
- Optimize network demand paths, design diverse paths, and perform what-if scenarios to see how demands are routed.
- Simulate link and node failures and view the effects of these failures on demand routing across the WAN.
- Analyze and manage network information using the Report Manager interface.
- Perform hardware inventory using the NorthStar Planner interface.

Contenu

Day 1

Chapter 1: Course Introduction

Chapter 2: WAN Automation

- The WAN Network
- Juniper Network WAN Automation Overview
- NorthStar Controller components
- NorthStar Controller use cases
- NorthStar Planner
- NorthStar Planner use cases

Chapter 3: NorthStar Controller Architecture

- Path Computation Element Protocol (PCEP)
- LSP Signaling and the CSPF Algorithm
- IGP Traffic Engineering
- NorthStar Virtual Machines
- Initial Setup
- Post Installation Setup and Configuration
- NorthStar Controller High Availability Overview
- Lab 1: Initial Setup

Chapter 4: Topology Discovery

- Topology Discovery Overview
- IGP Topology Discovery
- BGP-LS Topology Discovery
- Transport Topology Discovery
- BGP Monitoring Protocol (BGP-MP)
- Lab 2: Topology Discovery

Day 2

Chapter 5: Using the NorthStar Controller

- Operator User Interface Overview
- Accessing the Operator User Interface
- User Options
- More Options
- View
- NorthStar Planner User Interface Overview
- NorthStar Planner Web UI Overview
- Lab 3: Using the NorthStar Controller

Chapter 6: Basic LSP Management

- LSP Control Review
- Configuring PCC Controlled LSPs
- Configuring PCE Delegated LSPs
- Configuring PCE Initiated LSPs
- Verifying LSP Status
- Lab 4: Basic LSP Management

Chapter 7: Advanced LSP Management

- Secondary and Standby LSPs
- Symmetric Pairs of LSPs
- Diversity Groups
- Junos MPLS LSP Templates
- LSP Calendaring
- Inter-AS LSPs
- Egress Peer Engineering (EPE)
- Provisioning Multiple LSPs
- LSP Optimization
- Lab 5: Advanced LSP Management

Chapter 8: Segment Routing

- Segment Routing Overview
- Configuring a PCC to Support SR
- Provisioning and Managing SR LSPs
- Lab 6: Segment Routing

Day 3

Chapter 9: P2MP LSPs

- P2MP LSP Overview
- P2MP LSP Use Cases
- NorthStar P2MP Configuration and Management
- P2MP LSP Design

Chapter 10: Maintenance Scheduling and NETCONF Provisioning

- Maintenance Scheduling
- NETCONF Provisioning
- Lab 7: Scheduling Maintenance and NETCONF Provisioning

Chapter 11: Data Collection and Analytics

- Telemetry Architecture
- JTI Router Configuration
- SNMP Data Collection
- Netflow Collection
- LSP Routing Behavior
- Lab 8 Data Collection and Analytics

Chapter 12: NorthStar Controller Troubleshooting

- Process Troubleshooting
- Log File Analysis
- Network Topology Troubleshooting
- Lab 9: Troubleshooting

Day 4

Chapter 13: REST API

- NorthStar Controller REST API Concepts
- REST API Examples

Chapter 14: NorthStar Planner

- Launching NorthStar Planner
- NorthStar Planner Interface
- Lab 10: NorthStar Planner Interface

Chapter 15: NorthStar Planner Network Modeling

- Creating Network Models
- Analyzing Network Model Data Files
- Adding Network Demands, Links, Nodes
- Lab 11: Network Modeling

Chapter 16: Network Demand Placement and Outage Simulation

- Network Demand Placement
- Failure Simulation
- Lab 12: Demand Placement and Failure Simulation

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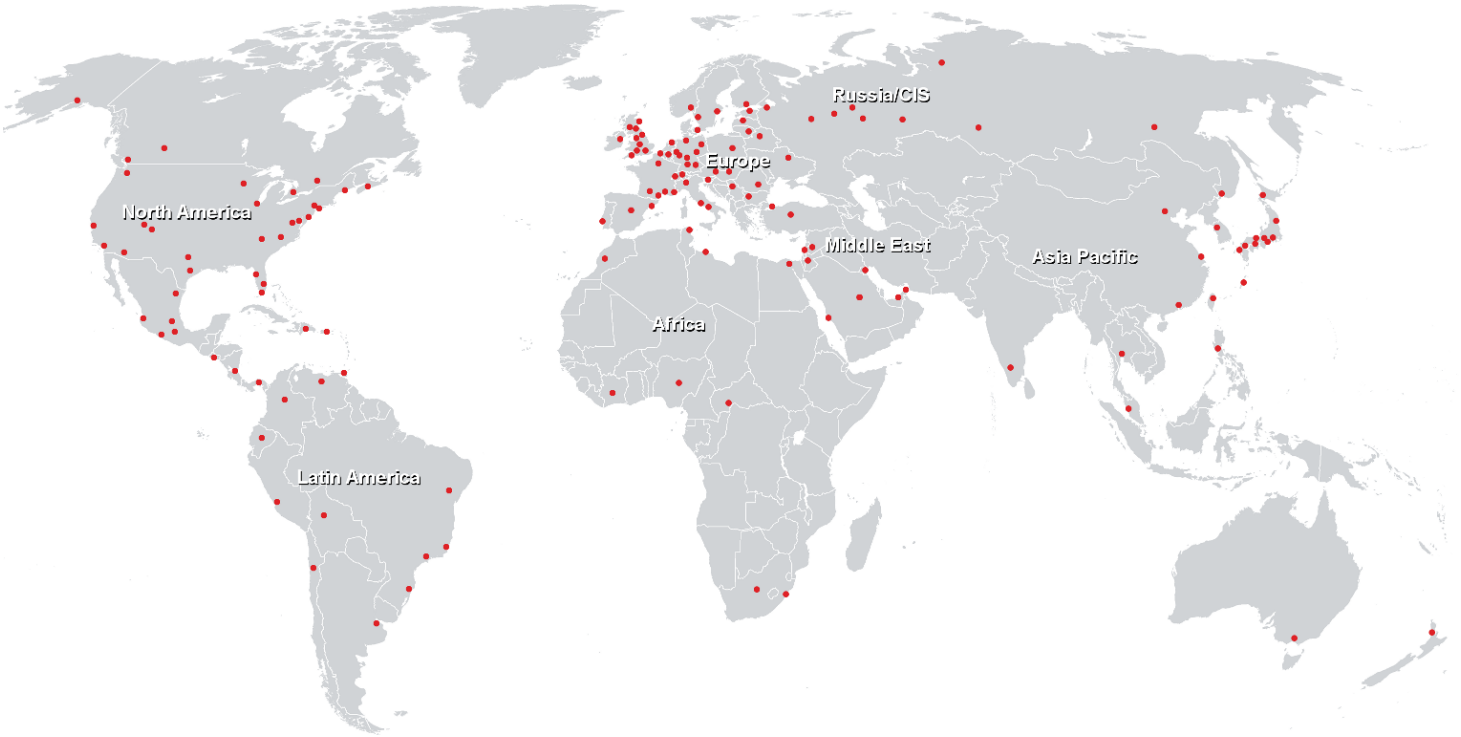

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