

Network Automation in the WAN (NA-WAN)

ID NA-WAN Preis US\$ 3.800,- (exkl. MwSt.) Dauer 4 Tage

Zielgruppe

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

Voraussetzungen

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;
- Intermediate routing knowledge—the Junos Routing Essentials (JP-JRE) course and [Junos Intermediate Routing \(JIR\)](#) or equivalent; and
- Advanced MPLS knowledge—the [Junos MPLS Fundamentals \(JMF\)](#) course or equivalent.

Kursziele

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

- Describe the various WAN domains.
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- Describe the use cases for NorthStar.
- Describe the use cases for WANDL IP/MPLSView.
- 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 how to provision multiple LSPs.
- Describe LSP optimization.
- Explain the features, capabilities, and benefits of IP/MPLSView and how they work to optimize WAN design.
- Access IP/MPLSView and navigate and customize the IP/MPLSView administrative interface.
- 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 IP/MPLSView interface.

Kursinhalt

This three-day course is designed to introduce various Juniper NorthStar Controller and WANDL IP/MPLSView features including, but not limited to, topology discovery, Multiprotocol Label Switching (MPLS) label switched path (LSP) management, LSP optimization, LSP calendaring, maintenance scheduling, failure simulation, reporting, network modeling, path demand placement, and hardware inventory. Students will learn to configure and monitor these features that exist on Juniper's NorthStar Controller and IP/MPLSView platform with the help of a network built using vMX Series devices.

Through demonstrations and hands-on labs, students will gain experience configuring, monitoring, and analyzing the above features of the NorthStar Controller and WANDL IP/MPLSView. This course is based on NorthStar Release 2.1 and WANDL IP/MPLSView Release 6.2.1.

Detallierter Kursinhalt

Day 1

Chapter 1: Course Introduction

Chapter 2: WAN Automation

- The WAN Network
- Juniper Network WAN Automation Overview

Chapter 3: Northstar Controller Architecture

- PCE Communication Protocol
- LSP Signaling and the CSPF Algorithm
- NorthStar Virtual Machines
- Initial Setup
- Lab 1: Initial Setup

Chapter 4: Topology Discovery

- Topology Discovery Overview
- IGP Topology Discovery
- BGP-LS Topology Discovery
- Lab 2: Topology Discovery

Day 2

Chapter 5: Using the Northstar Controller

- Operator User Interface Overview
- User Options
- More Options
- View
- Planner User Interface 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
- Provisioning Multiple LSPs
- LSP Optimization
- Lab 5: Advanced LSP Management

Chapter 8: Maintenance Scheduling and Failure Simulation

- Maintenance Scheduling
- Failure Simulation
- Lab 6: Scheduling Maintenance and Failure Simulation

Day 3

Chapter 9: IP/MPLSView

- IP/MPLSView Overview
- IP/MPLSView Administrative Interface
- Lab 7: IP/MPLSView Administrative Interface

Chapter 10: Network Modeling

- Building A Network Model
- IP/MPLSView Data Storage
- Modifying Network Models
- Lab 8: Modifying a Network Model

Chapter 11: Network Demand Placement and Outage Simulation

- Network Demand Placement
- Failure Simulation
- Lab 9: Demand Placement and Failure Simulation

Chapter 12: Reporting

- Report Manager
- Hardware Inventory
- Lab 10: Report Manager and Hardware Inventory