Deploying and Managing Wired Networks for Campus and Branch with Juniper Mist AI

Course overview

This four-day, intermediate-level course provides students with detailed exposure to the Juniper Mist™ Wired Assurance solution, covering its three installation stages: Day Zero—Provisioning, Day One—Deployment, and Day Two+—Operations. This course explores the supporting technologies, software, and hardware that make up traditional campus LANs and fabrics. The course includes Juniper Mist Wired Assurance Day One configuration, Virtual Chassis configuration through Juniper Mist™, wired client management, site variable and dynamic port configuration management, campus fabric deployment, and lastly, the discussion and implementation of group-based policies (GBPs) and microsegmentation. The labs for this course are intended to mirror the lab steps in the Campus Fabric EVPN Multihoming Using Juniper Mist™ Wired Assurance—Juniper Validated Design (JVD) and the Campus Fabric IP Clos Using Mist Wired Assurance—Juniper Validated Design (JVD), respectively.

Through demonstrations and hands-on labs, students will gain experience provisioning, deploying, and managing Juniper Networks® EX Series Switches and Juniper Networks® QFX Series Switches. Students will also deploy switches to create an Ethernet VPN–Virtual Extensible LAN (EVPN-VXLAN) campus fabric. Students will complete these tasks in a dedicated lab through the Juniper Mist portal. Juniper Mist is a Software as a Service (SaaS) platform that updates on a monthly cadence. The labs focus on implementing and managing switches using the Juniper Mist GUI in both traditional campus and modern campus fabric architectures.

This course is based on the Juniper Validated Campus Designs and uses Juniper Networks® EX Series Switches and QFX Series Switches running Junos 24.2R2-S2.5, and the Juniper Networks® SRX Series Firewall running Junos 24.2R2-18.

Course level

Deploying and Managing Wired Networks for Campus and Branch with Juniper Mist AI is an intermediate-level course.

Audience

The primary audiences for this course include:

- Individuals who want an understanding of Juniper Mist Wired Assurance and Juniper switches.
- Individuals who want to learn how to deploy campus networks using Juniper Mist.
- Individuals who want an introduction to network fabrics and their application in a campus LAN environment.

Prerequisites

- Completion of the *Introduction to Juniper Mist AI* course or equivalent knowledge.
- General understanding of campus and enterprise networks.
- Advanced networking knowledge of routing and switching and supporting technologies.
- Basic knowledge of Juniper switching devices.
- Strong understanding of the BGP routing protocol.

Related products

SRX Series Firewalls, QFX Series Switches, EX Series Switches, Mist AI™

Related certification

JNCIS-MistAI-Wired

Recommended next course

Automating Juniper Mist AI Enterprise

Objectives

- Describe the benefits of Juniper Mist Wired Assurance (switch installation and campus fabrics).
- Explain each of the three processes that make up switch installation.
- Summarize the management of standalone and Virtual Chassis switches in the Juniper Mist GUI.

- Correlate switch configurations and template options available in the Juniper Mist GUI.
- Explain traditional and modern campus architectures.
- Install a Juniper enterprise switch with the Juniper Mist GUI.
- Explain monitoring and troubleshooting with Juniper Mist, using SLEs, Marvis, and Marvis Actions
- Deploy switches in a traditional campus LAN.
- Deploy an EVPN-multihomed Campus Fabric using Juniper Mist.
- Deploy a three-stage IP Clos Campus Fabric using Juniper Mist.
- Demonstrate how to configure and verify VLANs, access ports, and trunk ports on a switch running Junos OS.
- Explain the advantages of EX Series Switches and QFX Series Switches, and the wireless, wired, and WAN solutions offered by Mist AI™.
- Describe and configure Juniper® Data Center Assurance (formerly Juniper Apstra™ Cloud Services).
- Describe the administration and requirements of Juniper Data Center Assurance.

Course contents

Day 1

Module 01: Juniper Mist Wired Assurance—Overview

- Provide an overview of Juniper Mist
- Define the Juniper Mist Wired Assurance solutions and supported devices
- Create a Juniper Mist account

Module 02: Juniper Mist Wired Assurance, Day Zero—Provisioning

- Describe the integration workflow
- Explain greenfield provisioning and review the ZTP processes
- Explain brownfield provisioning
- Describe telemetry collection

Lab 01: Onboarding Switches

Module 03: Juniper Mist Wired Assurance—Virtual Chassis

- Define Virtual Chassis
- Describe how to form a Virtual Chassis using Juniper Mist's VC wizard
- Describe how to form a Virtual Chassis manually
- Describe how to modify a Virtual Chassis
- Describe how to monitor a Virtual Chassis

Module 04: Juniper Mist Wired Assurance, Day One—Deployment

- Describe the configuration options available from Juniper Mist to manage all, some, or single switches

Lab 02: Managing Switches and Templates

Day 2

Module 05: Juniper Mist Wired Assurance, Day One—Configuration

- Define the Juniper Mist configuration and template options

Module 06: Configuration Scalability Use Cases

- Describe the site variables use case
- Describe the dynamic port configuration use case
- Describe the select switches use case
- Describe the bulk upload of switch configurations
- Describe the Juniper Mist Edge switch proxy service

Module 07: Juniper Mist Wired Assurance, Day Two+—Operations

- Describe Juniper Mist Wired Assurance SLEs and their classifiers
- Describe Alerts and Events
- Describe Switch Insights

- Describe Switch Utilities

Lab 03: Juniper Mist Utilities, Dynamic Port Configuration, and Marvis

Module 08: Juniper Mist Wired Clients

- Explain the operations of Juniper Mist Wired Clients

Day 3

Module 09: Campus Fabric Architectures

- Explain the need for a new architectural design
- Describe Layer 3-based campus network designs

Module 10: VXLAN Overview

- Describe the underlay and overlay in EVPN-VXLAN
- Describe Layer 2 tunneling
- Explain the functionality of VXLAN
- Describe VXLAN gateways

Module 11: EVPN-VXLAN Overview

- Describe EVPN features
- Describe EVPN operations
- Describe EVPN with VXLAN for data plane encapsulation
- Describe IPv6 underlay

Module 12: Juniper Mist Campus Fabric Deployment—EVPN Multihoming

- Deploy Juniper Mist campus fabric EVPN multihoming

Lab 04: EVPN Multihoming Fabric

Day 4

Module 13: Juniper Mist Campus Fabric Deployment—Core-Distribution

- Deploy Juniper Mist campus fabric core-distribution

Module 14: Group-Based Policy and Microsegmentation

- Explain network segmentation
- Explain GBP and microsegmentation
- Configure GBP in Juniper Mist

Module 15: Juniper Mist Campus Fabric Deployment—IP Clos

- Deploy Juniper Mist campus fabric IP Clos

Lab 05: Campus Fabric IP Clos

Self-study modules

Module 16: Junos OS Switches, Part 1—VLANs, MAC Tables, and Access Ports

- Demonstrate how to configure and verify VLANs on a switch running Junos OS
- Describe how to configure access ports and verify MAC tables

Module 17: Junos OS Switches, Part 2—Trunk Ports

- Describe how to deploy trunk ports on Junos OS switches
- Demonstrate how to configure multiple logical units on IP interfaces
- Explain the advantages of Juniper Networks EX Series and QFX Series Switches, and the wireless, wired, and WAN solutions offered by Mist AI

Module 18: Juniper Data Center Assurance—Overview

- Describe Juniper Data Center Assurance
- Describe the administration of Juniper Data Center Assurance
- Describe the Dashboard feature

- Describe the Monitor feature
- Describe Marvis Virtual Network Assistant
- Describe the Service Aware feature
- Describe the Impact Analysis feature
- Describe the DC Edges view
- Describe the DC Switches view
- Describe the requirements of Juniper Data Center Assurance

Module 19: Implementing Juniper Data Center Assurance

- Configure Juniper Data Center Assurance
- Install Juniper Apstra Edge

Resources

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Courses

Schedule

Learning Paths

Certification

Key contacts

Americas: networking.training.ams@hpe.com

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