Automating Juniper Mist AI Enterprise

COURSE OVERVIEW

This five-day, advanced-level course explores how to configure and manage a distributed enterprise. The distributed enterprise includes Mist AI™ solutions for Juniper Mist™ WAN Assurance, Juniper Mist™ Wired Assurance, Juniper Mis Wireless Assurance, and Juniper Mist Access Assurance. Users can deploy and manage distributed enterprises from the Juniper Mist™ GUI, automation methods, or a combination of both. Key topics include automation tools and methodologies as applied to Juniper Mist solutions.

Through demonstrations and hands-on labs, students will gain experience with the features of Juniper Networks® EX Series Switches, Juniper Networks® SSR Series Routers, wireless access points, and the Juniper Mist GUI and APIs. Students will also acquire experience with Juniper Mist features in a programmatic way.

COURSE LEVEL

Automating Juniper Mist AI Enterprise is an advanced-level course.

AUDIENCE

This course benefits individuals responsible for accessing and using Mist AI data for business intelligence and operations.

PREREQUISITES

- Basic networking (wired and wireless) knowledge.
- Understanding of OSI reference model and the TCP/IP protocol suite.
- Experience with Juniper Mist products and solutions.
- Basic automation and scripting knowledge—Python knowledge recommended.
- Completion of the following courses, or equivalent knowledge:
  - *Introduction to Juniper Platform Automation and NetDevOps*
  - *Introduction to Juniper Mist AI*
  - *Deploying and Managing Wireless Networks with Juniper Mist AI*
  - *Deploying and Managing Wired Networks for Campus and Branch with Juniper Mist AI*
  - *Deploying and Managing SD-WAN with Juniper Mist AI*

RELATED JUNIPER PRODUCTS

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

RELATED CERTIFICATION

JNCIP-MistAI

OBJECTIVES

- Associate AI-driven operations (AIOps) with the distributed enterprise network.
- Summarize the distributed enterprise network with Mist AI.
- Describe the Juniper Mist cloud REST API.
- Navigate the Juniper Mist API documentation.
- Operate the Python automation toolkit using JupyterLabs.
- Evaluate REST API tools and their uses.
- Describe native automation options for Juniper Mist.
- Construct a basic Python automation toolkit.
- Add to your Python automation toolkit with JSON and YAML automation, and apply Jinja2 data templating.
- Use the Juniper Mist REST API with Python.
- Automate Juniper Mist Day 1 operations with Python.
- Execute Juniper Mist configuration with webhooks.
- Review WebSockets.
- Review Juniper Mist Access Assurance.

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- Implement security to a distributed enterprise with Juniper Mist.
- Deploy a distributed enterprise architecture.
- Manage Day 2+ operations with Juniper Mist.

COURSE CONTENTS

DAY 01

Module 01: Associating AIOps with the Distributed Enterprise Network

- Compare AI and ML terminology
- Explain the basics of machine learning
- Define AIOps and its goals
- Illustrate examples of Mist AI that utilize of AI and ML

Module 02: Summarizing the Distributed Enterprise Network with Juniper Mist

- Explain the key concepts and terminology used in distributed networks
- Describe the components, portfolio, use cases, and architectures of Juniper Mist enterprise distributed networks
- Describe the Juniper Mist WAN Edge and AI-driven SD-WAN Assurance solution
- Define Juniper Mist Wired Assurance
- Define Juniper Mist Wireless Assurance
- Explain Juniper Mist Access Assurance
- Examine Marvis VNA for data center
- Define Juniper Mist Routing Assurance
- Explain Juniper Validated Designs

Module 03: The Juniper Mist Cloud REST API

- Describe the REST API framework within a Juniper Mist cloud
- Explain the REST API

Module 04: Exploring the Juniper Mist API Documentation

- Review Juniper Mist API documentation
- Examine the features available within the API documentation

Module 05: Constructing a Python Automation Toolkit—Using JupyterLabs

- Describe how to use JupyterLab

Lab 01: Getting Familiar with JupyterLab

DAY 02

Module 06: Evaluating REST API Tools and Their Uses

- Review API tools and their uses
- Compare API tools and their use cases with the Juniper Mist API

Lab 02: Using Basic Development Tools to Interact with the Juniper Mist REST API

Module 07: Native Automation Options for Juniper Mist

- Review Juniper Mist configuration templates and variables

Module 08: Constructing a Python Automation Toolkit, Part 1

- Refresh your Python basics

Module 09: Constructing a Python Automation Toolkit, Part 2

- Explain how JSON and YAML are used for automation
- Describe data templating with Jinja2

Lab 03: Working with Jinja2 Templates

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DAY 3

Module 10: Using the Juniper Mist REST API with Python

- Explain how to interact with the Mist API using Python requests
- Explain how to use the MistAPI Python package

Lab 04: Performing Juniper Mist Operations with the MistAPI Python Package and the REST API

Module 11: Automating Juniper Mist Day 1 Operations with Python

- Review the requirements for the Day 1 deployment
- Review the steps required to automate the deployment

Lab 05: Automating Day 1 Operations Using Python and the Juniper Mist API

Module 12: Executing Juniper Mist Configuration with Webhooks

- Define a webhook API
- Describe how to use the Juniper Mist webhook API
- Describe the set of features available through the webhook API used by Juniper Mist

Lab 06: Executing Juniper Mist Webhooks

DAY 4

Module 13: Review WebSockets

- Explain WebSockets and their usage with Juniper Mist

Module 14: Implementing Security to a Distributed Enterprise Network with Juniper Mist

- List the security components in a distributed enterprise network
- Describe Juniper Mist WAN Edge SSR security features
- Describe Juniper Mist wireless security features
- Describe Juniper Mist policy configurations
- Discuss the Juniper Mist alerts options
- Review Juniper Mist's Premium Analytics security reports

Lab 07: Application Policy and Traffic Steering

Module 15: Reviewing Juniper Mist Access Assurance

- Define the zero-trust model
- Describe the Juniper Mist Access Assurance solution
- Define Juniper Mist Access Assurance and supporting architecture and components

Lab 08: Managing Access Assurance

DAY 5

Module 16: Deploying a Distributed Enterprise Architecture

- Review the requirements for the Day 1 deployment
- Review the steps required to automate the deployment

Lab 09: Configuring Intersite Connectivity with Templates and Python

Module 17: Managing Day 2+ Operations with Juniper Mist

- Review the available monitoring and troubleshooting tools
- Explain how to access statistics with the Mist API
- Explain how to access Insights with the Mist API
- Explain how to analyze data from the Mist API

Lab 10: Troubleshooting Day 2+ Operations with Juniper Mist

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