

# 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 Juniper Mist AI solutions for Juniper Mist™ WAN Assurance, Juniper Mist™ Wired Assurance, Juniper Mist™ 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 Mist AI 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

Advanced

## AUDIENCE

- 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](#)
  - [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

EX Series, SRX Series, Network Design, Mist AI, Session Smart Routers

## RELATED CERTIFICATION

[JNCIP-MistAI](#)

## OBJECTIVES

- Compare artificial intelligence (AI) and machine learning (ML) terminology.
- Explain the basics of ML.
- Define AI-driven operations (AIOps) and its goals.
- Illustrate examples of Mist AI that utilize of AI and ML.
- 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 software-defined WAN (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.

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- Describe the Representational State Transfer (REST) API framework within a Juniper Mist™ cloud.
- Explain the REST API.
- Review Juniper Mist API documentation.
- Examine the features available within the API documentation.
- Describe how to use JupyterLab.
- Review API tools and their uses.
- Compare API tools and their use cases with the Juniper Mist API.
- Review Juniper Mist configuration templates and variables.
- Refresh your Python basics.
- Explain how JavaScript Object Notation (JSON) and YAML are used for automation.
- Describe data templating with Jinja2.
- Explain how to interact with the API using Python requests.
- Explain how to use the API Python package.
- Review the requirements for Day 1 deployment.
- Review the steps required to automate the deployment.
- 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.
- Explain WebSockets and their usage with Juniper Mist.
- Define the zero-trust model.
- Describe the Juniper Mist Access Assurance solution.
- Define Juniper Mist Access Assurance and the supporting architecture and components.
- List the security components in a distributed enterprise network.
- Describe Juniper Mist WAN Edge Session Smart Router 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.
- Review the steps required to automate the deployment.
- Review the available monitoring and troubleshooting tools.
- Explain how to access statistics with the API.
- Explain how to access Insights with the API.
- Explain how to analyze data from the API.

## COURSE CONTENTS

### DAY 1

#### 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 Mist AI

- Explain the key concepts and terminology used in distributed networks
- Describe the components, portfolio, use cases, and architectures of Juniper Mist distributed enterprise networks
- Describe the Juniper Mist WAN Edge and AI-driven SD-WAN Assurance solution
- Define Juniper Mist Wired Assurance
- Define Juniper Mist Wireless Assurance

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

## Module 05: Python Automation Toolkit—JupyterLabs

- Describe how to use JupyterLab

### Lab 01: Getting Familiar with JupyterLab and Jinja2 Templates

## DAY 2

## 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: The Python Automation Toolkit, Part 1

- Refresh your Python Basics

## Module 09: The Python Automation Toolkit, Part 2

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

## Module 10: Using the Juniper Mist REST API with Python

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

### Lab 03: Performing Juniper Mist Operations with the MistAPI Python Package and the REST API

## DAY 3

## 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 04: Automating Day 1 Operations with 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 05: Executing Juniper Mist Webhooks

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## Module 13: Review WebSockets

- Explain WebSockets and their usage with Juniper Mist

## Module 14: Reviewing Juniper Mist Access Assurance

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

## DAY 4

### Module 15: 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 06: Application Policy and Traffic Steering

### Module 16: Deploying a Distributed Enterprise Architecture

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

#### Lab 07: Deploy a Multisite Hub-and-Spoke Network

## DAY 5

### Module 17: Managing Day 2+ Operations with the Juniper Mist API

- 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 08: Troubleshooting Day 2+ Operations with the Juniper Mist API

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