Juniper Wireless Networks with Mist AI

Education Services

COURSE OVERVIEW

This four-day course is designed to provide students with the knowledge required to work with Enterprise wireless technologies and Mist AI-Driven Wi-Fi networks. Students will gain in-depth knowledge of Wi-Fi technologies, Mist technologies, and how to configure and use them. Through demonstrations and hands-on labs, students will gain experience with the features and functionality of Mist AI-driven Wi-Fi.

COURSE LEVEL

Intermediate

AUDIENCE

Individuals responsible for working with Enterprise wireless networks and applying artificial intelligence to their activities

PREREQUISITES

- Basic TCP/IP skills
- General networking
- Basic knowledge of wireless technologies (Wi-Fi) is recommended

CONTACT YOUR REGIONAL EDUCATION SERVICES TEAM:

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OBJECTIVES

- Introduce the IEEE 802.11 standard and amendments.
- Describe Wi-Fi frequency bands.
- Apply radio frequency basics in Wi-Fi networks.
- Identify how modulation and coding make up Wi-Fi.
- Describe the inter-workings of association and roaming.
- Describe network contention factors.
- Define WLANs.
- Introduce Mist.
- Describe Mist configuration objects for Wi-Fi.
- Explain Juniper access points and their configuration options.
- Describe Mist's WLAN configuration objects.
- Describe Mist Edge.
- Describe the Mist guest options.
- Describe WXLAN policies and apply them to resources.
- Describe WLAN security threats detected by the Mist WLAN system.
- Interpret wireless service level expectations (SLE) in relation to users.
- Gather events and insights from the Mist cloud.
- Summarize Mist's Radio Resource Management (RRM).
- Evaluate custom dashboard and reports options.
- Evaluate machine learning and artificial intelligence.
- Summarize Marvis queries.
- Extend Mist's Marvis actions.
- Compare location service's concepts and methods.
- Explain Mist's approach to user engagement.

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COURSE CONTENTS

DAY 1

1 Course Introduction

2 Wi-Fi Standards

- Describe the purpose of the 802.11 standard and its physical later amendments

3 Wi-Fi Radio Frequency Bands

- Describe the 2.4-GHz, 5-GHz, and 6-GHz frequency bands used for WLANs and their

4 Applying Radio Frequency Basics to Wi-Fi

- Describe the properties of an RF wave
- Convert dBm to Milliwatts using RF math
- Explain free space path loss and how it relates to WLANs

5 Modulation and Coding for Wi-Fi

- Explain RF modulation and how it relates to WLAN data rates
- Describe the relationship between SNR and MCS

6 Understanding Client Association and Roaming

- Describe the 802.11 state machine and steps required for an 802.11 station to connect to an access point
- Explain the protocols used in a client's connection to the network

7 Network Contention Factors

- Describe 802.11 contention

Lab 1: WLAN Testing

8 Wi-Fi Architectures and Life Cycle

- Differentiate WLAN architectures
- Describe the stages of the WLAN life cycle

9 Getting Started with Mist

- Examine the Mist architecture
- Create a Mist account
- Summarize Mist subscriptions

Lab 2: Initial Setup

DAY 2

10 Mist Configuration Objects

- Explain the difference between organization-level and site-level configuration objects
- Define Mist configuration objects and their uses
- Summarize the MSP dashboard

Lab 3: Remote Site and Site Groups and Variables

11 Juniper Access Points

- Summarize access points and connectivity
- Describe the boot procedure for a Juniper AP, its requirements, and the process of adding a Juniper AP to the Mist cloud
- Describe common AP configuration settings
- Use the Mist AP dashboard to get information about an AP

12 WLANs

- Define a BSS, ESS, an SSIDs and their functions
- Review additional WLAN configuration options
- Explain WLAN security options and how they are configured in a Mist WLAN configuration object
- Describe data rates and how they are configured in Mist

13 Mist Edge

- Define the features and benefits
- Identify popular use cases
- Categorize the product options
- Summarize the installation
- Review the Edge management
- Troubleshoot the device and connectivity

Continued on the next page.

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COURSE CONTENTS (continued)

DAY 3

14 Guest Portals
- Describe the Mist guest options

15 Mist WxLAN Policies
- Explain WLAN policies and how they are configured

Lab 4: WLANs and WxLAN

16 Mist Wi-Fi Security
- Explain WxLAN policies and how they are configured

17 Mist Service Level Expectations
- List Wi-Fi Assurance SLEs and their classifiers

18 Mist Events and Insights
- Describe site, AP and client events
- Explain the packet capture functionality of the Mist system
- Describe the 802.11 MAC header and list 802.11 MAC frame types

Lab 5: SLE Troubleshooting

19 Mist Radio Resource Management
- Describe the Mist RRM operations and their purposes

DAY 4

20 Mist Dashboard and Reports
- Review additional data to create dashboards and reports

21 Mist Artificial Intelligence and Troubleshooting Options
- Assess Mist's application of artificial intelligence
- Review troubleshooting options; reactive and proactive

22 Marvis Queries
- Explain the difference between Marvis natural language and Marvis query language

23 Marvis Actions
- Describe the functions of Marvis actions

Lab 6: Marvis

24 Location-Based Services
- Review Wi-Fi components for location services

25 User Engagement and Proximity Tracing
- Examine Mist's proximity tracing capabilities

JWMA08302023