

# **Enterprise Computing Solutions - Education Services**

# **TRAINING OFFERING**

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# Implementing Juniper Paragon Pathfinder and Planner Applications (JPAW)

CODE: LENGTH: PRICE:

JUN JPAW 32 Hours (4 days) £3,195.00

## **Description**

This four-day course introduces Paragon Automation applications including Paragon Pathfinder, Paragon Planner, and Paragon Insights. Through

demonstrations and hands-on labs, students will learn the capabilities of these applications including WAN topology discovery, segment routingtraffic engineering (SR-TE) and RSVP- signaled label-switched path (LSP) management, Path Computation Element Protocol (PCEP) LSP discovery and provisioning, label-switched path (LSP) optimization, LSP calendaring, maintenance scheduling, point-to-multipoint (P2MP), LSP management, failure simulation, reporting, network modeling, path demand placement, hardware inventory collection, network telemetry collection, and closed-loop automation. Students learn to configure and monitor these features on a WAN consisting of vMX Series devices. This course is based on Junos version 22.4R1.10 and Paragon Automation version 23.1.

**COURSE LEVEL** 

Advanced

## **Objectives**

- · Describe various WAN domains.
- · Configure Paragon Pathfinder for initial use.
- · Configure Paragon Pathfinder topology discovery.
- Provision various LSP types.
- Describe P2MP use cases.
- Perform LSP provisioning using Network Configuration Protocol (NETCONF).
- · Schedule network maintenance events.
- Use Paragon Insights to analyze network performance.
- · Launch and use Paragon Planner.
- · Perform network modeling.
- Perform network component failure simulation.
- · Manage and optimize network demands.

#### **Audience**

This course benefits individuals using Paragon Automation to automate the management of service provider or large enterprise MPLS networks

#### **Prerequisites**

- Understanding of the OSI Model
- Junos OS configuration experience—Introduction to the Junos Operating System course or equivalent
- Advanced MPLS knowledge—Junos MPLS Fundamentals course or equivalent

#### **Programme**

#### DAY 1

- 1 Course Introduction
- 2 WAN Automation
- Describe WAN domains
- Describe Paragon Pathfinder capabilities
- Describe Paragon Planner capabilities

- 3 Paragon Pathfinder Architecture
- Explain the Path Computation Element Protocol
- Explain LSP Signaling and the CSPF Algorithm
- Describe Paragon Pathfinder Architecture
- · Configure the Network

Lab 1: Initial Configuration

- 4 Network Topology Discovery
- Describe how Paragon Pathfinder discovers network topology
- · Configure Paragon Pathfinder network topology discovery
- Lab 2: Network Topology Discovery

#### DAY 2

5 Using Paragon Automation

- · Examine the Paragon Automation interface
- Examine the Paragon Planner Desktop interface

Lab 3: Using Paragon Automation

6 Basic LSP Management

- · Describe various LSP types
- Configure PCC-controlled LSPs
- · Configure PCE-delegated LSPs
- Configure PCE-initiated LSPs
- · Monitor LSPs from the Paragon pathfinder UI

Lab 4: Basic LSP Management

7 Advanced LSP Management

- Describe primary, secondary, and standby LSPs
- · Describe symmetric pairs of LSPs
- · Discuss diversity groups
- Describe using JUNOS MPLS LSP templates
- Explain LSP calendaring
- Describe inter-AS LSPs
- Explain how to provision multiple LSPs
- Define LSP optimization

Lab 5: Advanced LSP management

#### DAY 3

8 Segment Routing

- · Describe segment routing
- Configure and verify segment routing on routers running Junos OS
- Use Paragon Pathfinder to provision SR-MPLS LSPs

Lab 6: Segment Routing

9 P2MP LSPs

- Describe the basic functionality of P2MP and its use cases
- Manage P2MP LSPs with Paragon Pathfinder
- Monitor P2MP PSPs with Paragon Pathfinder
- Describe point to-multipoint LSPs
- 10 Maintenance Scheduling and NETCONF LSP Provisioning
- · Automate rerouting of LSPs
- Configure NETCONF LSP provisioning

Lab 7: Maintenance Scheduling and NETCONF Provisioning

11 Paragon Insights

- · Describe Paragon Insights capabilities
- Configure Paragon Insights monitoring

Lab 8: Paragon Insights

#### DAY 4

12 Paragon Automation Troubleshooting

- Troubleshoot Paragon Automation components
- Troubleshoot network topology acquisition
- Troubleshoot the Path Computation Element Protocol

Lab 9: Paragon Automation Troubleshooting

13 Paragon Planner

- Explain the features and capabilities of Paragon Planner
- Launch Paragon Planner Desktop and explore the interface

Lab 10: Paragon Planner

- 14 Network Modeling
- · Create a network model
- · Analyze network model data files
- Modify network models

Lab 11: Network Modeling

15 Network Demands and Failure Simulation

· Calculate network demand forwarding

Simulate network failure
Lab 12: Network Demands and Failure Simulation
SELF-STUDY MODULE

16 Paragon Active Assurance Solution Components

- Passive versus active
- PAA solution overview
- Overview of use case topologies

#### Follow on courses

Juniper SD-WAN with Mist AI

## **Test and Certification**

RELATED CERTIFICATION: JNCIA-SEC

#### **Session Dates**

On request. Please Contact Us

### **Additional Information**

This training is also available as onsite training. Please contact us to find out more.