

COURSE OVERVIEW

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 routing-traffic 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

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

RELATED CERTIFICATION

[JNCIA-SEC](#)

RECOMMENDED NEXT COURSE

[Juniper SD-WAN with Mist AI](#)

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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.

COURSE CONTENTS

DAY 1

1	Course Introduction
2	WAN Automation <ul style="list-style-type: none">Describe WAN domainsDescribe Paragon Pathfinder capabilitiesDescribe Paragon Planner capabilities
3	Paragon Pathfinder Architecture <ul style="list-style-type: none">Explain the Path Computation Element ProtocolExplain LSP Signaling and the CSPF AlgorithmDescribe Paragon Pathfinder ArchitectureConfigure the Network Lab 1: Initial Configuration
4	Network Topology Discovery <ul style="list-style-type: none">Describe how Paragon Pathfinder discovers network topologyConfigure Paragon Pathfinder network topology discovery Lab 2: Network Topology Discovery

DAY 2

5	Using Paragon Automation <ul style="list-style-type: none">Examine the Paragon Automation interfaceExamine the Paragon Planner Desktop interface Lab 3: Using Paragon Automation
6	Basic LSP Management <ul style="list-style-type: none">Describe various LSP typesConfigure PCC-controlled LSPsConfigure PCE-delegated LSPsConfigure PCE-initiated LSPsMonitor LSPs from the Paragon pathfinder UI Lab 4: Basic LSP Management
7	Advanced LSP Management <ul style="list-style-type: none">Describe primary, secondary, and standby LSPsDescribe symmetric pairs of LSPsDiscuss diversity groupsDescribe using JUNOS MPLS LSP templatesExplain LSP calendaringDescribe inter-AS LSPsExplain how to provision multiple LSPsDefine LSP optimization Lab 5: Advanced LSP management

DAY 3

8	Segment Routing <ul style="list-style-type: none">Describe segment routingConfigure and verify segment routing on routers running Junos OSUse Paragon Pathfinder to provision SR-MPLS LSPs Lab 6: Segment Routing
9	P2MP LSPs <ul style="list-style-type: none">Describe the basic functionality of P2MP and its use casesManage P2MP LSPs with Paragon PathfinderMonitor P2MP PSPs with Paragon PathfinderDescribe point to-multipoint LSPs
10	Maintenance Scheduling and NETCONF LSP Provisioning <ul style="list-style-type: none">Automate rerouting of LSPsConfigure NETCONF LSP provisioning Lab 7: Maintenance Scheduling and NETCONF Provisioning
11	Paragon Insights <ul style="list-style-type: none">Describe Paragon Insights capabilitiesConfigure Paragon Insights monitoring Lab 8: Paragon Insights

COURSE CONTENTS (Continued)

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

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