Junos OS Evolved for Cloud Networking

COURSE OVERVIEW

This three-day, intermediate-level course is designed to provide students with the knowledge required to work with the Junos OS Evolved. The Junos OS has evolved since its creation to leverage advanced operating system and platform technologies. As it has evolved, key fundamental concepts have changed, and continue to change, in how the operating system functions and is used by administrators. This course explains the key changes to the operating system, and how the configuration and administrative tasks performed on Junos OS Evolved differ from Junos OS configuration and administrative tasks. This course includes a particular focus on expanded support for third party applications on the Junos platform, including Docker container support, and introduces students to new troubleshooting commands and tools available in Junos OS Evolved. Through demonstrations, students will gain experience with updated operating system features. This course is based on Junos OS Evolved Release 21.2R1.

COURSE LEVEL

Junos OS Evolved for Cloud Networking is an intermediate-level course.

AUDIENCE

This course benefits individuals responsible for working with Junos OS Evolved.

PREREQUISITES

An intermediate-level understanding of Junos OS configuration and troubleshooting.

RELATED JUNIPER PRODUCTS

ACX Series, PTX Series, QFX Series

OBJECTIVES

- Identify key differences between Junos and Junos OS Evolved.
- Explain the high-level architecture of Junos OS Evolved.
- Identify the components of Junos OS Evolved.
- Explain basic Linux functions in the context of Junos OS Evolved.
- Perform configuration tasks in Junos OS Evolved.
- Perform management tasks in Junos OS Evolved.
- Deploy third-party and custom applications in Junos OS Evolved.
- Explain the fundamentals of Docker containers.
- Deploy Docker container-based applications on Junos OS Evolved.
- Understand how Junos OS Evolved manages system state.
- Understand the Junos OS Evolved network stack and host packet path.
- Explain Logging and Tracing in Junos OS Evolved.
- Perform basic troubleshooting tasks in Junos OS Evolved.

Contact Juniper Education Services: Americas: training-amer@juniper.net | EMEA: training-emea@juniper.net | APAC: training-apac@juniper.net

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COURSE CONTENTS

DAY 1

Module 1: Course Introduction

Module 2: The Evolution of Junos

- Junos OS versus Junos OS Evolved
- High level Junos OS Evolved architecture

Module 3: Junos OS Evolved Software Architecture

- Junos OS Evolved components that manage system state
- Junos OS Evolved components that form nodes into a coherent system
- Junos OS Evolved components that manage upgrades

Module 4: Junos OS Evolved Linux Configuration

- Linux components of Junos OS Evolved configuration
- Common Linux commands

Module 5: Junos OS Evolved Configuration Tasks

- Host VPN
- Management VRF

   Lab 1: Configuring Junos OS Evolved

Module 6: Junos OS Evolved Management Tasks

- Perform root password recovery
- Upgrade or downgrade Junos OS Evolved software
- Configure the Two-Way Active Measurement Protocol

   Lab 2: Managing Junos OS Evolved

DAY 2

Module 7: Deploying Third Party Applications on Junos OS Evolved

- Describe third-party application support
- Deploy a custom application
- Daemonize a custom application

   Lab 3: Third Party Applications on Junos OS Evolved

Module 8: Docker Basics

- Explain key Docker concepts
- Use Docker commands to create and manage containers

   Lab 4: Docker Basics

Module 9: Docker Containerized Applications on Junos OS Evolved

- Explain the requirements for Docker applications on Junos OS Evolved
- Deploy a Docker collectd container on Junos OS Evolved
- Deploy a monitoring infrastructure based on Prometheus and Grafana on Junos OS Evolved

   Lab 5: Docker Containers on Junos OS Evolved

Module 10: Case Study — Deploying a Custom Application

- Deploy a custom Juniper DDS client which publishes to a Kafka topic

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DAY 3

Module 11: Troubleshooting Junos OS Evolved — System State

- Describe how to query Junos OS Evolved system state
- Troubleshoot object dependency issues

Module 12: Troubleshooting Junos OS Evolved — Network Stack and Host Packet Path

- Understand the Linux and Junos network stacks

Module 13: Troubleshooting Junos OS Evolved — Logging and Tracing

- Explain the system logging and tracing infrastructure in Junos OS Evolved
- Explain how to retrieve support information and statistics
- Explain how to inspect Docker container statistics and configuration details

Lab 6: Troubleshooting Junos OS Evolved