

Deploying and Extending Junos OS Evolved

COURSE OVERVIEW

This three-day, intermediate-level course provides students with the knowledge required to work with 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 25.2R1.

COURSE LEVEL

[Deploying and Extending Junos OS Evolved](#) is an intermediate-level course.

AUDIENCE

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

PREREQUISITES

- Intermediate networking knowledge.
- Understanding of the OSI reference model and the TCP/IP protocol suite.
- Strong familiarity with the Junos operating system.

RELATED JUNIPER PRODUCTS

ACX Series, QFX Series, PTX Series

OBJECTIVES

- Identify key differences between Junos OS 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.
- Explain how Junos OS Evolved manages system state.
- Explain 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.

COURSE CONTENTS

DAY 1

Module 01: Overview of Junos OS Evolved

- Describe the differences between Junos OS and Junos OS Evolved
- Explain the high-level Junos OS Evolved Architecture

Module 02: Junos OS Evolved Software Architecture

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

Module 03: Linux Basics for Junos OS Evolved

- Describe the responsibilities of the Linux Kernel
- Explain how system manages other processes withing Linux
- Describe the Linux and Junos OS Evolved directory structures
- Explain how certain Junos OS Evolved configurations are implemented in Linux
- Demonstrate the use of common Linux shell commands

Lab 01: Linux Basics for Junos OS Evolved

Module 04: Junos OS Evolved Management Tasks

- Configure the management VRF
- Upgrade or downgrade Junos OS Evolved software
- Perform root password recovery

Lab 02: Managing Junos OS Evolved

DAY 2

Module 05: Third-Party Applications on Junos OS Evolved

- Describe the security framework for binary applications
- Describe the APIs available on Junos OS Evolved

Module 06: Deploying a Binary Application to Junos OS Evolved

- Review the security requirements for binary applications on Junos OS Evolved
- Deploy a binary application on Junos OS Evolved
- Daemonize a binary application on Junos OS Evolved

Lab 03: Deploying a Third-Party Binary on Junos OS Evolved

Module 07: Docker Basics

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

Lab 04: Docker Basics

Module 08: Deploying Docker Containers to Junos OS Evolved

- Describe the process for deploying Docker containers to Junos OS Evolved
- Deploy a containerized monitoring stack to Junos OS Evolved

Lab 05: Deploying a Containerized Monitoring Stack

Module 09: Creating a Development Environment for Junos OS Evolved Applications

- Describe the options for building a sandbox for testing 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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- Deploy an application testing sandbox

Lab 06: Building a Test Environment

DAY 3

Module 10: Troubleshooting Applications on Junos OS Evolved

- Describe the capacity-planning considerations for extending Junos OS Evolved
- Describe how to limit resource usage for your applications
- Describe the tools available for troubleshooting applications on Junos OS Evolved

Module 11: Troubleshooting System State on Junos OS Evolved

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

Module 12: Troubleshooting—Network Stack and Host Packet Path

- Describe the Linux and Junos network stacks

Module 13: Troubleshooting—Logging and Tracing

- Explain the system logging and tracing infrastructure in Junos OS Evolved
- Retrieve support information and statistics

Lab 07: Troubleshooting Junos OS Evolved

JECN20251024