Junos OS Evolved for Cloud Networking

COURSE OVERVIEW

This three-day 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 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 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

introductory-level

INTENDED AUDIENCE

This course benefits individuals responsible for working with Junos Evolved.

PREREQUISITES

The prerequities for this course include:

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

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OBJECTIVES

After successfully completing this course, you should be able to:

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

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COURSE CONTENTS

DAY 1

1 Course Introduction

2 Junos Evolved Overview

- Junos OS versus Junos Evolved
- High Level Junos Evolved Architecture

3 Junos Evolved Software Architecture

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

4 Linux Basics for Junos OS Evolved

- Linux Components of Junos Evolved Configuration
- Common Linux Commands

5 Junos OS Evolved Configuration Tasks

- Host VPN
- Management VRF

Lab 1: Configuring Junos Evolved

6 Junos OS Evolved Management Tasks

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

Lab 2: Managing Junos OS Evolved

DAY 2

7 Third-Party Applications on Junos Evolved

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

Lab 3: Deploying Third-Party Applications on Junos Evolved

8 Docker Basics

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

Lab 4: Docker Basics

9 Third Party Applications with Docker

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

Lab 5: Docker Containers on Junos Evolved

10 Case Study: Deploying a Custom Application on Junos Evolved

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

COURSE CONTENTS (contd.)

DAY 3

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Troubleshooting Junos Evolved – System State

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

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Troubleshooting Junos Evolved – Network Stack and Host Packet Path

- Explain the Linux and Junos network stacks

13

Troubleshooting Junos Evolved – Logging and Tracing

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

Lab 6: Troubleshooting Junos Evolved