

## Introduction to the Junos Operating System (IJOS)

ID IJOS Price CHF 2,925.—(excl. VAT) Duration 4 days

### Who should attend

- Individuals who work with routers, switches, and firewalls that run Junos OS
- Individuals who want to learn how to manage Junos OS using the CLI
- Individuals who want to learn a basic understanding of IPv4, IPv6, routing switching, troubleshooting, packet filtering, and Junos administration concepts

### This course is part of the following Certifications

Juniper Networks Junos Associate (JNCIA-JUNOS)

### Prerequisites

- Students are highly recommended to have watched the self-study Getting Started with Networking (e-learning) video series before attending this course.
- Basic understanding of IPv4 and IPv6.
- Basic understanding of Ethernet and MAC address learning.
- Basic understanding of TCP and UDP.
- Basic understanding of the layered OSI and TCP/IP models.

### Course Objectives

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

- Explain the most important benefits of Junos OS and describe the kind of devices that run it.
- Explain how to remotely connect to the Junos CLI, and how to use operational mode to verify system information.
- Describe the reasons that IPv6 was created and explain how to read an IPv6 address.
- Explain the difference between a physical network interface and a logical unit.
- Demonstrate how the Junos OS CLI can reveal detailed information about network interfaces.
- Describe how Junos OS stores its configuration using a logical and hierarchical structure.
- Demonstrate how to deploy configuration in Junos OS, and how the commit process helps to prevent mistakes.
- Demonstrate the commands and keyboard shortcuts that

- make Junos CLI configurations more efficient.
- Describe how routes enter a routing table, and how routers choose the best routes for forwarding traffic.
- Describe how static routes manually install routing information into a router.
- Describe how routing protocols can automatically find the best path to remote destinations.
- Demonstrate how to deploy OSPF to automatically advertise and learn prefixes in a single network.
- Explain how to manage a switch that runs Junos OS.
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- Demonstrate how to enable some crucial Junos OS administrative features.
- Describe the most important things to consider when deploying a new device that runs Junos OS.
- Demonstrate how knowledge of the underlying Junos OS architecture can bring advantages to network operators.
- Demonstrate how a knowledge of the underlying Junos OS software helps you when upgrading Junos and troubleshooting networks.
- Demonstrate the most important and useful tools available in Junos OS that can help you fix real-world problems.
- Explain how Junos OS can filter and manipulate traffic in real time using stateless firewall filters.
- Explain how to configure stateless firewall filters that accept or discard packets.
- Demonstrate some powerful CLI configuration options that can increase your productivity.
- Describe the advantages and configuration of a variety of different interface types and features.
- Demonstrate how the architecture of Junos OS is built with automation in mind.
- Explain how to continue your studies once the course has been completed.

Additional objectives for self-study:

- Explain how to utilize backup static routes, routing instances, OSPF areas, and BGP.
- Deploy some of the advanced features available within a firewall filter.
- Describe advanced troubleshooting and monitoring features available in Junos OS.
- Demonstrate some advanced device administration features.
- Describe how routing policies control what prefixes can

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- enter the routing table, and what prefixes can be advertised by protocols.
- Describe the tasks involved in upgrading Junos OS.
- Use the J-Web graphical interface to make configuration changes and monitor and maintain Junos devices.
- Describe the most common network cables in use today, and the reasons for using the Ethernet protocol in modern networks.
- Describe how IP addresses create end-to-end network communication.
- Explain how switches enable Layer 2 Ethernet communication between hosts on a shared LAN segment.
- Describe the difference between TCP and UDP.

- Junos OS Device Administration—A Deeper Dive
- Junos OS Routing Policy
- Upgrading Junos OS
- J-Web
- Refresher—Cables and Ethernet
- Refresher—IPv4 and Subnetting
- Refresher—Switches, MAC Learning, Broadcast Domains, and VLANs
- Refresher—TCP and UDP

## Course Content

- Course Introduction
- SSH and Operational Mode
- Refresher—IPv6 Addressing
- Network Interfaces, Part 1—Interface Naming and Logical Units
- Network Interfaces, Part 2—Revealing and Filtering Detailed Interface Output
- Reading a Junos OS Configuration
- Configuring Junos OS—The Basics
- Configuring Junos OS—Become a Power User
- Routing Tables, Route Preference, and Longest Prefix Matches
- Static Routes
- Dynamic Routing Protocols—The Theory
- Dynamic Routing Protocols—Configuring OSPF
- Junos OS Switches, Part 1—VLANs, MAC Tables, and Access Ports
- Junos OS Switches, Part 2—Trunk Ports
- Junos OS Device Administration
- Setting Up a Brand-New Junos OS Device
- Junos OS Architecture—The Control Plane and the Data Plane
- Junos OS Architecture—The Software That Powers Junos OS
- Logging, Troubleshooting, and Monitoring
- Junos OS Firewall Filters, Part 1—The Theory
- Junos OS Firewall Filters, Part 2—The Practical
- Junos OS Configuration—A Deeper Dive
- Interfaces—A Deeper Dive
- Junos OS Architecture—APIs and Automation
- Where Do You Go from Here?

## Self-Study Modules

- Routing—A Deeper Dive
- Junos OS Firewall Filters—A Deeper Dive
- Logging, Troubleshooting, and Monitoring—A Deeper Dive

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## Training Centres worldwide



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