



Enterprise Computing Solutions - Education Services

## TRAINING OFFERING

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# Introduction to Junos Platform Automation and DevOps (IAUT)

CODE:	LENGTH:	PRICE:
JUN_IJAUT	24 Hours (3 days)	£2,550.00

## Description

This three-day course provides students with introductory knowledge of how to automate Junos using DevOps automation tools, protocols, and technologies.

Students receive hands-on experience with tools and languages relevant to automating the Junos OS platform in a DevOps environment.

The course includes an introduction to the basic DevOps practices, Junos APIs, and NETCONF. It also focuses on using Python, Junos PyEZ, and the Junos REST API to automate Junos. XML, JSON, and YAML are introduced as these languages facilitate Junos automation.

Through demonstrations and hands-on labs, students will gain experience with automating the Junos operating system.

This course uses Junos OS Release 20.2R2.11, Junos PyEZ 2.5.4, Python 3.6.8, and Ansible 2.9.5.

The Introduction to Junos Platform Automation and DevOps (IAUT) course is an introductory level course.

Relevant Juniper Product • Automation

## Objectives

- Describe DevOps principles and practices. • Explain how DevOps benefits an IT organization.
- Discuss Network Reliability Engineering. • List and describe the various APIs Junos provides for automation.
- Discuss the frameworks, libraries and tools used to automate Junos devices. • Describe XML document format.
- Explain how the Junos OS uses XML. • Use XPath to navigate a Junos XML document. • Describe the NETCONF protocol.
- Use NETCONF and the XML API to issue Junos RPCs. • List available XML API programming languages.
- Configure Junos device using NETCONF. • Describe JSON syntax. • Explain how JSON is used in Junos.
- Describe YAML syntax. • Explain how Junos automation tools use YAML. • Use JSON and YAML documents.
- Verify an Ansible installation. • Retrieve information from Junos devices using Ansible. • Use Ansible to configure Junos devices.
- Explain fundamental Python concepts. • Use the Python 3 interactive interpreter. • Modify and run Python scripts.
- Install Junos PyEZ. • Use Junos PyEZ to connect to Junos devices and retrieve facts. • Use Junos PyEZ to execute Junos RPCs.
- Use Junos PyEZ to modify Junos device configuration. • Describe Python exception handling with PyEZ.
- Describe the capabilities of the Junos OS REST API. • Generate REST API RPC queries. • Use the REST API Explorer.
- Describe the Junos operating system and its basic design architecture. • Explain transit and exception traffic processing.
- Describe the Junos CLI and its features. • List and perform initial configuration tasks.
- Describe interface types and perform basic interface configuration tasks.

## Audience

Individuals responsible for configuring and monitoring devices running the Junos OS

## Prerequisites

- Basic understanding of the OSI model and the TCP/IP protocol suite • Basic understanding of computer networking concepts

## Programme

Day 1 Course Introduction Introduction to DevOps • Why DevOps? • The Benefits of DevOps Junos Automation  
• The Junos Automation Stack • Junos XML API Overview • Junos REST API Overview • Junos JET API Overview  
• Overview of Junos Automation Tools XML and XPath • Basic XML Syntax • XML in the Junos OS • Navigating XML using XPath  
Lab 1: XML and XPath Day 2 XML and NETCONF • NETCONF • Junos XML API • Junos XML API Programming Languages  
Lab 2: XML and NETCONF Python Fundamentals • Python Basics • Data Types and Variables  
• Lists, Dictionaries, Sets, and Tuples • Python Libraries • Python Script Examples Lab 3: Python Fundamentals

Junos PyEZ Operations • Junos PyEZ • Execute Junos RPCs • Perform Device Operations Lab 4: Junos PyEZ Operations Day 3  
Junos PyEZ Configuration • Junos PyEZ Configuration • Junos PyEZ Exception Handling • Junos PyEZ and Jinja2  
Lab 5: Junos PyEZ Configuration JSON and YAML • Data Formatting • JSON Basics • JSON Support in Junos • YAML Basics  
• Junos Automation and YAML Lab 6: JSON and YAML Junos REST API • REST API Overview • Configuring the REST API  
• Using the REST API • REST API Explorer Lab 7: Junos REST API

The following Appendices can be covered, if time permits, and are requested by the delegate/s prior to booking:

Appendix A: Introduction to Junos • Junos OS Basic Design Architecture • Traffic Processing • CLI Modes and Features  
• Initial Configuration Tasks • Interface Types and Configuration Lab 8: Introduction to Junos Appendix B: Introduction to Ansible  
• Ansible Architecture and Capabilities • Ansible Playbook Basics • Using Ansible to Retrieve Junos Status Information  
• Using Ansible to Retrieve and Modify Configuration Information Lab 9: Ansible

## Follow on courses

Recommended Next Course Junos Automation and DevOps (JAUT)

## Test and Certification

Associated Certification JNCIA-DevOps Exams can be purchased and scheduled at an additional cost – please ask for details.

## Session Dates

Date	Location	Time Zone	Language	Type	Guaranteed	PRICE
08 Jul 2024	Virtual Training Class - TP	BST	English	Instructor Led Online		£2,550.00
21 Oct 2024	Virtual Training Class - TP	BST	English	Instructor Led Online		£2,550.00

## Additional Information

[This training is also available as onsite training. Please contact us to find out more.](#)