Enterprise Computing Solutions - Education Services

TRAINING OFFERING

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Juniper Platform Automation and NetDevOps (JAUT)

CODE:	LENGTH:	PRICE:
JUN_JAUT	40 Hours (5 days)	£3,995.00

Description

The five-day, intermediate-level course gives students hands-on experience with a wide variety of automation technologies and practical use cases.
Students will use Ansible to upgrade Junos devices, configure OSPF, and implement BGP on multiple devices using Jinja2 templates.
Students will learn to use JSNAPy to compare Junos configurations and roll back if needed.
Students will also learn to use Junos commit, op, event, and SNMP scripts to execute RPCs, adjust user permissions, enable MPLS on interfaces, verify admin settings, and trigger warnings and scripts when system events occur.
In addition to Ansible and Junos automation, users will also learn to use custom YANG modules and OpenConfig modules to create custom commands and configure non-Junos devices.
Students will also learn to use gNMIc and a TIG stack to obtain and visualize a wide variety of telemetry data from Junos and Junos Evolved devices.
And finally, students will use Terraform to configure interfaces on multiple devices using the Juniper JTAF provider.
This course uses Junos OS Release 24.4R1, Ansible 2.18, SLAX version 1.2, and JSNAPy 1.3.8. COURSE LEVEL
Juniper Platform Automation and NetDevOps is an intermediate-level course RELATED JUNIPER PRODUCTS
ACX Series, EX Series, Junos OS, MX Series, QFX Series, SRX Series, PTX Series

Objectives

- Describe Junos automation architecture and tools.
- Describe how to use Docker for NetDevOps.
- Describe Junos Evolved automation.
- Describe Jinja2 templates for Junos automation.
- Perform network testing with JSNAPy.
- Describe Ansible automation.
- Use Ansible to configure Junos devices.
- Configure Ansible with Jinja2 templates and JSNAPy.
- Describe how to develop Junos op scripts using Python.
- Describe how to develop Junos commit scripts using Python.
- Describe Junos event policies.
- Describe how to develop Junos event scripts using Python.
- Describe the basics of the SLAX language.
- Describe extension functions in Junos OS automation scripts.

- Describe Junos op scripts using SLAX.
- Describe Junos commit scripts and event scripts using SLAX.
- Describe the syntax and semantics of the YANG language.
- Use OpenConfig with Junos OS.
- Create custom Junos YANG modules.
- Describe how Terraform can be used to automate Junos.
- Describe the syntax and semantics of protocol buffers and gRPC.
- Describe the syntax and semantics of the gNMI service.
- Configure Junos gNMI (dial-in) telemetry using TIG stack.
- Perform basic Junos OS Evolved automation tasks.
- Develop Junos SNMP scripts.
- Describe JET functionality and how to use JET APIs to automate Junos.

Audience

Individuals responsible for configuring and monitoring devices running the Junos OS.

Prerequisites

- Intermediate-level networking knowledge.
- Understanding of the OSI model and the TCP/IP protocol suite.
- Successful completion of the *Introduction to Juniper Platform Automation and NetDevOps* course or equivalent experience

Programme

DAY 1 Module 01: Junos Automation Fundamentals

- List the benefits of Junos automation and NetDevOps
- Explain the Junos automation stack and Junos APIs
- Describe the difference between on-box automation and off-box automation
- Describe the purpose of op, commit, event, and SNMP scripts
- Describe the various tools, languages, and libraries used to automate Junos devices

Module 02: Using Docker for NetDevOps

- Explain the basic concepts of Docker
- Explain how to create and manage containers
- Configure networks for Docker containers

Lab 01: Using Docker for NetDevOps Module 03: Jinja2 Fundamentals

- Explain how to use Jinja2 templates for Junos automation
- Explain how to create Jinja2 templates

Lab 02: Creating Jinja2 Templates Module 04: Automating Junos Using JSNAPy

- Describe how JSNAPy can automate Junos OS
- Explain how to install and configure JSNAPy
- Create snapshots and perform tests using JSNAPy
- Explain the integration of JSNAPy with other automation tools

Lab 03: JSNAPy DAY 2 Module 05: Introduction to Ansible

- Explain the fundamentals of Ansible
- Describe the elements in the Ansible environment for network device management
- Explain how to retrieve information from Junos devices using Ansible

Lab 04: Ansible Operations with Junos Module 06: Automating Junos Using Ansible

- Configure Ansible vault to securely connect to Junos devices
- Use Ansible to manage Junos device configurations
- Optimize Ansible playbook operations with extended features

Lab 05: Using Ansible for Junos Configuration Management Module 07: Ansible with Jinja2 Templates and JSNAPy

- Create Ansible playbooks that uses variables and templates
- Configure Ansible and Jinja2 templates to manage Junos device configurations
- Configure Ansible to generate JSNAPy snapshots

Lab 06: Using Ansible with Jinja2 Templates and JSNAPy Module 08: Junos Op Scripts Using Python

- Explain how to create and execute Python op scripts
- Describe how to use arguments with Python op scripts
- Explain how to execute Junos RPCs from Python op scripts
- Describe how to configure Junos devices with Python op scripts

Lab 07: Junos Op Scripts Using Python Module 09: Junos Commit Scripts Using Python

- Describe how Python commit scripts can perform different actions
- Develop Python commit scripts that perform configuration changes

- Configure and enable Python commit scripts

Lab 08: Junos Commit Scripts Using Python DAY 3 Module 10: Junos Event Policies

- Identify Junos OS events
- Describe how to create Junos OS event policies

Module 11: Junos Event Scripts Using Python

- Describe how to create Junos event scripts

Lab 09: Junos Event Policies and Event Scripts Module 12: SLAX Fundamentals

- Describe the relation of SLAX to XML, XPath, and Junos XML API
- Create simple SLAX scripts
- Describe SLAX templates, variables, and flow control statements

Module 13: SLAX Extension Functions

- Explain how to use the Junos function library
- Describe the difference between the available SLAX versions

Module 14: Junos Op Scripts Using SLAX

- Describe how to create and execute SLAX op scripts
- Explain how to use arguments with SLAX op scripts
- Describe how to execute Junos RPCs from SLAX op scripts
- Explain how to configure Junos devices with SLAX op scripts

Lab 10: Junos Op Scripts Using SLAX DAY 4 Module 15: Junos Commit Scripts and Event Scripts Using SLAX

- Describe the basic SLAX commit script operation
- Develop SLAX commit scripts that perform transient and persistent changes
- Configure and enable SLAX commit scripts
- Describe how to create event scripts using SLAX

Lab 11: Junos Commit Scripts Using SLAX Module 16: YANG Language

- List the main features and the language syntax of YANG
- Identify YANG language use cases with Junos OS

Lab 12: Using pyang with Juniper YANG Models Module 17: OpenConfig

- Describe the advantages of OpenConfig

- Modify the Junos OS configuration using OpenConfig

Lab 13: Implementing OpenConfig Module 18: Custom YANG Modules

- Describe custom configuration statements and translation scripts
- Describe custom RPCs and action scripts

Lab 14: Implementing a Custom YANG Module Module 19: Terraform (Experimental)

- Describe the Infrastructure as Code workflow with Terraform
- Create a Junos Terraform provider using Junos Terraform Automation Framework
- Automate Junos configuration with custom Junos Terraform provider

Lab 15: Using Junos Terraform Provider DAY 5 Module 20: Protocol Buffers and gRPC

- List the main features and the workflow of protocol buffers
- Describe gRPC and implement a simple service

Lab 16: Protocol Buffers and gRPC Module 21: gNMI

- Describe the RPCs and main messages of the gNMI service
- Use the gNMIc client with the Junos target

Lab 17: Using gNMIc with Junos Targets Module 22: Junos gNMI (Dial-In) Telemetry

- Describe how to collect telemetry from Junos using gNMI and TIG stack
- Describe how to display telemetry data in Grafana

Lab 18: Junos gNMI Telemetry with TIG Stack SELF-STUDY MODULES Module 23: Junos OS Evolved Automation

- Describe Junos OS Evolved
- Explain how to install and manage vJunosEvolved
- Describe how to run the third-party applications in the containers
- Describe how to automate Junos OS Evolved using Junos PyEZ

Module 24: Junos SNMP Scripts

- Describe how Junos OS SNMP scripts are used
- Create and configure Junos OS SNMP scripts

Lab 19: Junos SNMP Scripts (Optional) Module 25: Juniper Extension Toolkit

- List the main JET components and use cases

- Describe gRPC and JET IDL files
- Develop JET applications using Service API

Lab 20: Using JET Service API (Optional)

Follow on courses

RECOMMENDED NEXT COURSE Advanced Junos Platform Automation and DevOps

Further Information

Session Dates

Date	Location	Time Zone	Language	Type	Guaranteed	PRICE
03 Nov 2025	Virtual Training Class - TP	GMT	English	Instructor Led Online		£3,995.00

Additional Information

This training is also available as onsite training. Please contact us to find out more.