

## **Course Content: Junos Platform Automation and DevOps (JAUT)**

### **Topic 1: Introduction about the Course**

### **Topic 2: Junos Automation Architecture and Overview**

- Why Automate
- Junos MGD Based Automation
- Junos JSD Based Automation
- Automation Languages, Libraries, and Frameworks
- Automation Management Systems
- Other Junos Automation Tools

### **Topic 3: NETCONF and the XML API**

- NETCONF
- XML API
- XML API Programming Languages
- XML API Tools

### **Topic 4: JSON and YAML**

- Origins of JSON and YAML
- Features and Benefits
- JSON and YAML uses in Junos Automation
- Creating Well-Formed JSON and YAML Documents
- Conversion To and From XML

### **Topic 5: Python and Junos PyEZ**

- Introduction to Python and PyEZ
- Python Development Environment
- Working with RPCs using Junos PyEZ
- Working with an Unstructured Junos Configuration
- Working with Junos PyEZ Tables and Views
- Junos PyEZ Exception Handling

### **Topic 6: Jinja2 and Junos PyEZ**

- Jinja2 Overview
- Jinja2 Syntax
- Creating a Junos PyEZ, YAML, and Jinja2 Solution

### **Topic 7: Using Ansible to Automate Junos**

- Ansible Overview
- Installing Ansible
- Creating and executing Ansible playbooks to manage devices running Junos OS
- Use Case - Using Ansible to configure devices running Junos OS
- Use Case - Using Ansible to install software on devices running Junos OS

- Use Case - Using Ansible to reboot or shut down devices running Junos OS
- Use Case - Using Ansible to revert a device running Junos OS to a factory Default Configuration

#### **Topic 8: Junos Automation with JSNAPy**

- JSNAPy Overview
- Installation
- Integration into Ansible
- JSNAPy d.Snapcheck, Snapshot, and Diff Functions

#### **Topic 9: Junos OS Commit and Op Scripts**

- Junos Automation Scripting Overview
- Creating Junos OS Commit Scripts
- Creating Junos OS Op Scripts

#### **Topic 10: Junos OS Event and SNMP Scripts**

- Identify Junos OS events
- Create Junos OS event policies
- Create Junos OS event scripts
- Create Junos OS SNMP scripts

#### **Topic 11: YANG**

- YANG Overview
- YANG Modules
- YANG Syntax
- Junos YANG Case Studies
- Creating and Using Non-Native YANG Modules

#### **Topic 12: OpenConfig**

- Describe the Advantages of OpenConfig
- Modify the Junos OS Configuration using OpenConfig
- Describe using OpenConfig with the Junos Telemetry Interface (JTI)

#### **Topic 13: Junos Extension Toolkit (JET)**

- JET Overview and Components
- Setup a JET VM
- Create JET Packages
- Use the JET API

#### **Topic 14: The Junos OS REST API**

- Describe the Purpose of the Junos OS REST API
- Create REST API RPC Queries
- Use the REST API Explorer
- Use Case - Using the Junos REST API

