Introduction to Junos Automation and DevOps (IJAUT)

COURSE OVERVIEW

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 then focuses on using Python, PyEZ, Ansible, and 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 in automating the Junos operating system and device operations. This course uses Junos OS Release 18.1R1, Junos PyEZ 2.1, and Ansible 2.5.

AUDIENCE

This course benefits 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.

OBJECTIVES

• Describe the Junos operating system and its basic design architecture.
• Explain traffic processing for transit and exception traffic.
• Describe the Junos CLI and its features.
• List and perform initial configuration tasks.
• Describe DevOps principles and practices.
• Explain how DevOps can benefit an IT organization.
• List and describe the various APIs Junos provides for automation.
• Discuss various frameworks, libraries and tools available to automate Junos devices.
• Read Junos XML documents.
• Use XPath to navigate a Junos XML document.
• Use NETCONF and the XML API to issue RPCs.
• Use NETCONF and the XML API to configure a Junos device.
• Understand JSON syntax.
• Understand YAML syntax.
• Create JSON and YAML documents.
• Perform Ansible installation.
• Retrieve information from Junos devices using Ansible.
• Use Ansible to configure Junos devices.
• Create and execute simple Python scripts.
• Use the Python interactive interpreter.
• Install Junos PyEZ.
• Use PyEZ to connect to Junos devices.
• Use PyEZ to issue RPCs.
• Use PyEZ to modify a Junos device configuration.
• Use PyEZ to upgrade Junos devices.
• Describe basic PyEZ exception handling.
• Describe the capabilities of the Junos REST API.
• Use the Junos REST API Explorer.
• Issue Junos REST API RPCs.

ASSOCIATED CERTIFICATION

JNCIA-DevOps

RELEVANT JUNIPER PRODUCT

Automation

RECOMMENDED NEXT COURSE

N/A

CONTACT INFORMATION

training@juniper.net

Course content subject to change. See www.juniper.net/courses for the latest details.

© 2018 Juniper Networks, Inc.
### COURSE CONTENT

#### Day 1

<table>
<thead>
<tr>
<th>1</th>
<th>COURSE INTRODUCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Introduction to Junos OS</td>
</tr>
<tr>
<td>3</td>
<td>Introduction to DevOps</td>
</tr>
<tr>
<td>4</td>
<td>The Junos Automation Stack</td>
</tr>
</tbody>
</table>

#### Day 2

| 5 | Introduction to XML and XPath |
| 6 | The XML API and NETCONF |
| 7 | Introduction to JSON and YAML |
| 8 | Introduction to Ansible |
| 9 | Introduction to Python |

---

**Note:** Course content subject to change. See [www.juniper.net/courses](http://www.juniper.net/courses) for the latest details.

© 2018 Juniper Networks, Inc.
## Day 3

### 10: Introduction to Junos PyEZ
- Connecting to Junos Devices with PyEZ
- Retrieving Junos Device Status and Configuration Handling
- Modifying the Junos Configuration with PyEZ
- Using PyEZ utilities to upgrade Junos software
- Case Study

**Lab 7: Using PyEZ to Manage Junos Devices**

### 11: The Junos REST API
- Overview of the Junos REST API
- Methods of Connecting to the Junos REST API
- Configuring the Junos REST API
- Using the Junos REST API Explorer
- Using the Junos REST API to Retrieve Junos Configuration Data
- Case Study

**Lab 4: Using the REST API**