

Juniper Automation and DevOps

This entry-level Juniper DevOps training teaches learners how to automate network devices and functions, enhancing productivity and reducing deployment stress. Learn to integrate DevOps into the Junos automation stack, use XML, NETCONF, YAML, JSON, Ansible, and Python to automate tasks. Ideal for onboarding new network administrators or as a reference for team training and continuous delivery of network features.

[CBT Nuggets course material](#) →

WEEK 1

Network Programmability and Automation Foundations

Saying Goodbye to the CLI	1
Why Network Automation?	10
What Can You Automate?	13
The Evolution of Network APIs	13
Network Programmability vs. Network Automation	10
Devices and Controllers in the Era of SDN	6
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Create a Junos Base Config for Automation

Overview	1
Welcome to Junos	3
Junos OS Architecture	6
Junos CLI Basics	11
Running vs. Candidate Configurations	8
Creating a Base Config for Automation	9
Summarizing Junos	1

XML, JSON, and YAML Data Formats

Supplemental Files	1
Why Use Plain Text Data Formats?	7
XML, JSON, and YAML Data Formats	5
XML Syntax	4
XML Elements, Tags, and Attributes	5
XML Document Object Model (DOM)	4
JSON Syntax	6
JSON Strings, Numbers, and Booleans	5
JSON Objects and Arrays	6

YAML Syntax	5
YAML Strings, Numbers, Floats, and Booleans	6
Data Formats Summary	1

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152 min.

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Data Models and YANG

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What is a Data Model?	8
How YANG Works	12
YANG in Action	6
YANG Tools to Make Your Life Easier, Win Friends, and Influence People	10
This Nugget is Important	3

Develop for the Junos XML API and NETCONF

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Junos Automation Stack and the XML API	11
Oh, The Scripts You Can Script	5
NETCONF circa 2006	8
Exploring NETCONF From Terminal	4
Using ncclient to Get NETCONF Data	9
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Use the Junos Python SDK: PyEZ

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PyEZ Basics and Getting Device Facts	4
Running RPCs with PyEZ	6
Setting Configurations	5
Handling Exceptions	3
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REST API Fundamentals

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REST vs. SOAP	5
REST Tools	6
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Explore and Program the Junos REST API

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Junos REST API Structure	3
REST API Explorer	5
Testing the REST API with Postman	3
Scripting REST API Requests with Python	4

WEEK 3

120 min.

Summarizing REST API	1
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Install and Configure Ansible

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Configuring Remote Devices	6
Inventory File	3
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Variables and Facts	8
Conditionals	5
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Automate Juniper Networks with Ansible

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Automating and Orchestrating JUNOS	1
host_vars and group_vars	5
Gathering Facts	3
Network Modules	6
Understanding State	3
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Describe the Components for a CI/CD Pipeline

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What is CI/CD?	7
Integrating, Building, and Testing	5
Delivering and Deploying	5

CI/CD Summary	1
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Identify the Principles of DevOps Practices

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Introducing DevOps	2
Iterative and Incremental	5
Continuous and Automated	4
End-To-End Responsibility	4
DevOps Principles Summary	1