Advanced Data Center Automation Using Juniper Apstra

COURSE OVERVIEW

This three-day advanced-level course provides students with advanced-level knowledge that might be helpful when working with Juniper Apstra™ software and when managing data center networks with Juniper Apstra software. This class provides attendees with the knowledge to automate Juniper Apstra using the Representational State Transfer (REST) API and Terraform, and uses Terraform to integrate Apstra with external systems. It is assumed that students have already attended the Data Center Automation Using Juniper Apstra (APSTRA) course or have a similar foundational knowledge of Apstra.

Through demonstrations and hands-on labs, students will gain advanced experience in automating Juniper Apstra. This course is based on Juniper Apstra Release 4.2.1.

COURSE LEVEL

Advanced Data Center Automation Using Juniper Apstra is an advanced-level course.

AUDIENCE

The primary audience for this course includes:

- Networking architects and operators, system engineers, and DevOps and IT professionals.
- Individuals responsible for configuring, monitoring, and troubleshooting modern spine-and-leaf data centers of any size leveraging any networking vendor hardware or operating system.

PREREQUISITES

- Strong background in network design and operations.
- Understanding of Clos IP fabric.
- Overlay and underlay routing designs.
- Basic automation design and workflows.
- Understanding of network device configuration through the CLI.
- Knowledge of BGP.
- Completion of the Data Center Automation Using Juniper Apstra course.

RELATED JUNIPER PRODUCTS

EX Series, Juniper Apstra, Junos OS, QFX Series, SRX Series

RECOMMENDED NEXT COURSE

Implementing Data Center Fabric with EVPN and VXLAN

OBJECTIVES

- After successfully completing this course, the students should be able to:
- Describe the basic REST API functionality.
- Describe the functions of the Apstra-CLI utility.
- Describe the Apstra provider for Terraform.
- Manage resource pools with Terraform.
- Manage devices with Terraform.
- Create designs with Terraform.
- Create a blueprint using Terraform.
- Demonstrate how to scale blueprints with Terraform.
- Describe how to integrate Apstra with an external IP Address Management (IPAM) system.

Contact Juniper Education Services: Americas: training-amer@juniper.net | EMEA: training-emea@juniper.net | APAC: training-apac@juniper.net

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Course Outline

COURSE CONTENTS

DAY 1

Module 1: Introduction to the REST API

- Describe the basic REST API functionality

Lab 1: Using the REST API

Module 2: Using the Apstra-CLI Utility

- Describe the functions of the Apstra-CLI utility

Lab 2: Using the Apstra-CLI Utility

Module 3: Introduction to Terraform

- Perform the initialization of Terraform and the Apstra provider
- Create a Terraform resource using the Apstra provider

DAY 2

Module 4: Creating Apstra Resources with Terraform

- Create resource pools with Terraform
- Explain additional Terraform features

Lab 3: Creating Apstra Resources with Terraform

Module 5: Managing Devices with Terraform

- Install device agents with Terraform
- Explain additional Terraform features

Lab 4: Managing Devices with Terraform

Module 6: Creating Designs with Terraform

- Create rack types
- Create templates

Lab 5: Creating Designs with Terraform

DAY 3

Module 7: Creating Blueprints with Terraform

- Create and build a blueprint
- Describe how to add a routing zone and an external router to a blueprint
- Describe how to add virtual networks to a blueprint

Lab 6: Creating an Apstra Blueprint with Terraform

Module 8: Scaling Blueprints with Terraform

- Demonstrate how to scale out a blueprint with Terraform

Lab 7: Scaling Blueprints with Terraform

Module 9: Integration with External IPAM

- Describe how to use Terraform to integrate Apstra with an external IPAM

Lab 8: Integrating Apstra with an External IPAM

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