Data Center Automation using Juniper Apstra

Category: Infrastructure & IT Operations | **Vendor:** Juniper

Duration: 40.00 hours (5 days) **32.5 CPD Hours**

Rating: ⭐ 4.6 (5,878 reviews)

Course Information

Delivery Format: Instructor Led - Online

Course Overview

This five-day, intermediate-level course teaches the basics of using the Juniper Apstra™ software to manage data center networks. This course offers attendees the knowledge to operate and manage Juniper Apstra. It also provides a comprehensive overview of modern data center design and intent-based networking concepts.

The course covers the Juniper Apstra architecture and its data center reference architecture including the designing, building, deploying, and automation of both a collapsed IP fabric and a three-stage IP fabric using a Virtual Extensible LAN (VXLAN) overlay. The course also covers the navigation of the Juniper Apstra UI including creating resources, designs, templates, and instantiating blueprints (a running network). After teaching the students to use Juniper Apstra to build a running data center, the course reviews the operational tools for managing a system with Juniper Apstra including performing basic troubleshooting, performing global and blueprint UI walkthroughs, enabling role-based access control, setting drain mode, adding and removing nodes from a fabric, rolling back an entire network (Time Voyager), creating on-box and off-box agents, configuring security policies, creating connectivity templates, querying the graph database, and performing intent-based analytics (IBA).

Students will learn to configure and monitor Juniper Apstra's IP network through demos and hands-on work. This course is based on Juniper Apstra Release 5.0.

About This Course

- Intent-Based Networking
- Juniper Apstra—Overview
- Juniper Apstra UI Walkthrough
- Logical Devices, Device Profiles, and Interface Maps
- Device Management
- IP Fabric Architecture
- VXLAN Overview
- EVPN Protocol
- Apstra Reference Designs
- Resources
- Tags
- Design—Racks
- Design—Templates
- Building and Deploying a Blueprint
- Navigating the Blueprint UI
- Basic Blueprint Operations
- Role-Based Access Control
- Property Sets and Configlets
- Connectivity Templates
- Virtual Networks
- Post-Deployment—Adding a Spine and a Rack
- Post-Deployment—Managing Links and Generic Systems
- Graph Explorer
- Intent-Based Analytics—Overview
- Creating an IBA Probe
- Root Cause Identification
- Security Policies
- Creating Logical Devices
- Creating Interface Maps
- Syslo
- Managing the Apstra Server
- Data Center Interconnect

Self-Study Modules

- Creating Device Profiles
- Introduction to the REST API and Terraform
- Juniper Apstra Cloud Services—Overview
- Implementing Juniper Apstra Cloud Services

Who Should Attend

- Networking architects and operators, System Engineers, and DevOps and IT professionals
- People who set up, maintain, and troubleshoot big and small data centers using different vendor products

Prerequisites & Entry Requirements

General Prerequisites:

- Basic knowledge of networking and data center designs
- 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 Introduction to Juniper Data Center Networking (IJDC) course

Learning Outcomes

Upon successful completion of this course, participants will be able to:

- Describe what is meant by intent-based networking.
- Describe the Juniper Apstra architecture.
- Navigate the global Apstra UI.
- Describe the basic device abstractions used by Juniper Apstra.
- Create and use system agents to manage devices.
- Describe an IP fabric architecture.
- Explain VXLAN functions and operations.
- Describe Ethernet VPN (EVPN) routing and bridging.
- Describe the Juniper Apstra reference designs.
- Create resources.
- Create tags.
- Configure a rack type.
- Configure templates.
- Build and deploy a blueprint.
- Navigate the blueprint UI.
- Perform basic fabric device operations and troubleshooting.
- Configure role-based access control.
- Configure and apply property sets and configlets.
- Configure connectivity templates.
- Describe the multitenancy capabilities of Juniper Apstra.
- Add a spine and a rack to an existing blueprint.
- Add a generic system and links to an existing blueprint.
- Use the Graph Explorer to traverse the graph datastore.
- Describe the function of an IBA probe.
- Create an IBA probe.
- Describe the purpose of root cause identification.
- Create and manage security policies.
- Create a logical device.
- Create an interface map.
- Configure logging to a remote syslog server.
- Manage the Juniper Apstra Server.
- Describe how Juniper Apstra can enable a Data Center Interconnect (DCI).

- Create a device profile.
- Describe how you can automate the Juniper Apstra server.
- Implement Juniper Apstra Cloud Services.
- Describe Juniper Apstra Cloud Services features.

Detailed Course Outline

Day 1

Module 1: Intent-Based Networking

- Describe what is meant by intent-based networking

Module 2: Juniper Apstra—Overview

- Describe the role of the Juniper Apstra server
- Describe the role of the Juniper Apstra device agents

Module 3: Juniper Apstra UI Walkthrough

- Navigate the global Apstra UI

Lab 1: Apstra UI Walkthrough

Module 4: Logical Devices, Device Profiles, and Interface Maps

- Describe logical devices
- Describe device profiles
- Describe interface maps

Lab 2: Logical Devices, Device Profiles, and Interface Maps

Module 5: Device Management

- Create and use system agents to manage devices

Lab 3: Managing Devices

Module 6: IP Fabric Architecture

- Describe an IP fabric architecture

Day 2

Module 7: VXLAN Overview

- Describe VXLAN functions and operations

Module 8: EVPN Protocol

- Describe EVPN routing and bridging

Module 9: Apstra Reference Designs

- Describe IP fabric usage in the data center reference design
- Describe host connectivity in the data center reference design
- Describe the overall life-cycle management of devices
- Describe the Juniper Apstra Freeform reference design

Module 10: Resources

- Create resources

Module 11: Tags

- Create tags

Lab 4: Creating Resources and Tags

Module 12: Design—Racks

- Configure a rack type

Module 13: Design—Templates

- Configure Templates

Lab 5: Designing the Network

Day 3

Module 14: Building and Deploying a Blueprint

- Build and deploy a blueprint

Lab 6: Building and Deploying a Blueprint

Module 15: Navigating the Blueprint UI

- Navigate the blueprint UI

Module 16: Basic Blueprint Operations

- Perform basic fabric device operations and troubleshooting

Lab 7: Navigating and Operating a Blueprint

Module 17: Role-Based Access Control

- Configure local authentication

- Configure remote authentication

Lab 8: Configuring RBAC

Module 18: Property Sets and Configlets

- Configure and apply property sets and configlets

Module 19: Connectivity Templates

- Configure connectivity templates

Module 20: Virtual Networks

- Describe how to create virtual networks

- Describe how to set routing zone constraints

Lab 9: Configuring Configlets, Connectivity Templates, and Virtual Networks

Day 4

Module 21: Post-Deployment—Adding a Spine and a Rack

- Add a spine node and a rack to an existing blueprint

Module 22: Post-Deployment—Managing Links and Generic Systems

- Add a generic system and links to an existing blueprint

Lab 10: Working with Spines, Racks, and Generic Systems

Module 23: Graph Explorer

- Use the Graph Explorer to traverse the graph datastore

Module 24: Intent-Based Analytics—Overview

- Describe the function of an IBA probe

Module 25: Creating an IBA Probe

- Create an IBA probe

Lab 11: Creating IBA Probes

Module 26: Root Cause Identification

- Describe the purpose of root cause identification

Module 27: Security Policies

- Describe the security policy functionality and terminology
- Describe the security policy workflow
- Describe the security policy conflict resolution
- Describe the management of security policies

Lab 12: Configuring Root Cause Identification and Security Policies

Day 5

Module 28: Creating Logical Devices

- Create a logical device

Module 29: Creating Interface Maps

- Create an interface map

Lab 13: Creating a Collapsed IP Fabric

Module 30: Syslo

- Configure logging to a remote syslog server

Module 31: Managing the Apstra Server

- Manage the Apstra server

Lab 14: Configuring Syslog and Managing the Apstra Server

Module 32: Data Center Interconnect

- Describe how Apstra can enable a DCI

Lab 15: Configuring a DCI

Self-Study Modules

Module 33: Creating Device Profiles

- Create a device profile

Module 34: Introduction to the REST API and Terraform

- Describe the basic REST API functionality

- Describe basic Terraform usage

Module 35: Juniper Apstra Cloud Services—Overview

- Describe Juniper Apstra Cloud Services

- Describe the administration of Juniper Apstra Cloud Services

- Describe Dashboards

- Describe Marvis Virtual Network Assistant

- Describe Service Aware

- Describe Impact Analysis

- Describe the requirements of Juniper Apstra Clouds Services

Module 36: Implementing Juniper Apstra Cloud Services

- Configure Juniper Apstra Cloud Services

- Install Juniper Apstra Edge

Skills You Will Learn:

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Frequently Asked Questions

Q: What delivery options are available for Data Center Automation using Juniper Apstra?

We offer multiple delivery formats:

- Live Instructor-Led Classroom Online (Virtual/Live Online)
- Traditional Instructor-Led Classroom Training (ILT)
- On-site delivery at your offices anywhere in United Kingdom
- Private dedicated courses customized for your team

Q: How many CPD hours does this course provide?

The 5-day Data Center Automation using Juniper Apstra course provides up to 32.5 CPD hours of structured learning. CPD certificates can be provided upon request.

Q: What is the duration of the Data Center Automation using Juniper Apstra training?

The training takes place over 5 day(s), with each day lasting approximately 40.00 hours including breaks for lunch and refreshments.

Q: Do you provide corporate training for Data Center Automation using Juniper Apstra?

Yes, we provide corporate training, dedicated training, and closed classes for Data Center Automation using Juniper Apstra. Training can take place anywhere in United Kingdom including London, Manchester, Birmingham, Edinburgh, or live online allowing teams from across United Kingdom or internationally to attend.

Q: What related terms do people search for?

Popular related searches include: Data Center Automation using Juniper Apstra, Data Center, APSTRA

Q: Why choose Nexus Human for Data Center Automation using Juniper Apstra?

Nexus Human is recognized as one of the leading training providers. Our trainers have won multiple awards including:

- Small Firms Best Trainer Award
- National Training Partner of the Year (Ireland) - Multiple Years
- Global Top 30 Instructor Awards (2012, 2019, 2021)
- Tech Excellence Award Nominations
- Learning Performance Institute (LPI) External Training Provider Sponsor 2024

Q: Are there any discount codes available?

Yes! Use discount code **PENPAL5** when booking your Data Center Automation using Juniper Apstra training. Please note that only one discount code can be used per booking and cannot be combined with other special offers.

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