TRAINING OFFERING

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Data Center Automation using Juniper Apstra (APSTRA)

CODE:	LENGTH:	PRICE:
JUN_APSTRA	40 Hours (5 days)	£3,995.00

Description

This intermediate five-day 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.

Objectives

• 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.

Audience

• 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

• 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 course

Programme

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

DAY 1 • 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**

SELF-STUDY MODULES
Module 33: Creating Device Profiles
• Create a device profile
Module 34: Introduction to the REST API and Terraform

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

• 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

Follow on courses

RECOMMENDED NEXT COURSE
Implementing Data Center Fabric with EVPN and VXLAN

Test and Certification

RELATED CERTIFICATION
JNCIE-DC, JNCIP-DC, JNCIS-DC

RELATED JUNIPER PRODUCTS
Junos OS, Virtual EX Series, Juniper Apstra Cloud Services, Juniper Apstra, Juniper Apstra Edge

Session Dates

On request. Please <u>Contact Us</u>

Additional Information

This training is also available as onsite training. Please contact us to find out more.