DevNet Automation Bootcamp for NX-OS Course

Course Duration: 32 Hours **Course code: 200-901 DEVASC**

1. Course Overview

This course is designed to equip IT professionals with the skills required to automate and manage Cisco NX-OS-based network environments using modern DevNet tools and methodologies. Participants will learn how to interact with NX-OS devices programmatically, leverage APIs, implement infrastructure as code, and streamline network operations using automation frameworks. The course emphasizes hands-on labs and real-world use cases to enhance operational efficiency, reduce manual configuration errors, and enable scalable network management.

2. What you'll learn?

DevNet Automation Bootcamp for NX-OS teaches you how to automate Cisco data center networks using APIs, Python, and DevNet tools. You will gain expertise in managing NX-OS devices programmatically, implementing automation workflows, integrating CI/CD pipelines, and using modern tools to improve network agility, consistency, and scalability.

3. Target Audience

This course is ideal for:

1- Network Engineers and Data Center Engineers

2- DevOps Engineers and Automation Engineers

3- System Administrators managing Cisco environments

4- IT Professionals transitioning to Network Automation roles

4. Pre-Requisites

To get the most out of this course, learners should have:

1- **Basic Networking Knowledge:** Understanding of TCP/IP, switching, routing, and VLANs

2- **NX-OS Fundamentals:** Familiarity with Cisco Nexus devices and NX-OS CLI
3- **Programming Basics:** Basic knowledge of Python scripting
4- **API Understanding:** Familiarity with REST APIs and JSON
5- **General IT Knowledge:** Understanding of Linux basics and virtualization

5. Course content

Module 01 – Introduction to DevNet and NX-OS Automation
Overview of DevNet and Network Automation
Introduction to Cisco NX-OS Architecture
Benefits of Automation in Data Center Networks

Module 02 – NX-OS Programmability Fundamentals
NX-API Features and Capabilities
Enabling and Configuring NX-API
Understanding CLI vs API Interaction

Module 03 – Python for Network Automation
Python Basics for Networking
Working with JSON, YAML, and APIs
Automating NX-OS using Python Scripts

Module 04 – Working with NX-API REST Interfaces
REST API Concepts and Methods (GET, POST, PUT, DELETE)
Sending API Calls using Tools (Postman, Curl)
Parsing API Responses

Module 05 – Infrastructure as Code (IaC)
Introduction to IaC Concepts
Using YAML/JSON for Configuration
Version Control with Git
Automating Configurations using Templates

Module 06 – Automation using Ansible for NX-OS
Introduction to Ansible Architecture
Writing Playbooks for NX-OS
Managing Configurations using Ansible Modules
Idempotency and Automation Best Practices

Module 07 – Advanced NX-OS Automation
Automating VLANs, Interfaces, and Routing
Configuration Backup and Restore Automation
Error Handling and Logging

Module 08 – CI/CD for Network Automation
Introduction to CI/CD Pipelines
Integrating Automation with CI/CD Tools
Testing and Validation of Network Changes

Module 09 – Monitoring and Telemetry Automation
Introduction to Network Telemetry
Streaming Telemetry in NX-OS
Automating Monitoring and Alerts

Module 10 – Security and Best Practices in Automation
Securing API Access
Managing Credentials Securely
Role-Based Access in Automation
Automation Governance and Compliance

Module 11 – Real-World Use Cases & Hands-On Labs
End-to-End Automation Scenarios
Multi-Device Configuration Automation

Phone: +91-999-911-1686 **Mail Us:** info@ssdntech.com