Cisco NSO Administration and DevOps (NSO303)

Description

The **Cisco NSO Administration and DevOps (NSO303)** training continues the learning journey of the NSO Essentials for Programmers and Network Architects and NSO Advanced for Python Programmers trainings by introducing you to the system administration and DevOps, focusing on Network Services Orchestrator (NSO). This includes the robust bridge linking network automation and orchestration tools, examining the development, operation, and administration task functions. You will learn how to set up, configure, deploy, and maintain a Cisco NSO solution, and learn best practices for using DevOps. The examples shown in this training demonstrate real-world scenarios to prepare you for deployment and management of new or existing NSO instances.

The training guides you through the setup of production-ready NSO instances using system installation with access control settings, the deployment of NSO in Docker containers, and introduces modern DevOps concepts and tools such as Git and Continuous Delivery/Continuous Deployment (CI/CD). You will learn how to migrate Continuous Diagnostics and Mitigation (CDM) devices, how to build Network Configuration Protocol (NETCONF) Network Element Drivers (NEDs) from the NSO Command-Line Interface (CLI), how to handle NSO Alarms, and many more features that benefit you in your journey with Cisco NSO. This training also earns you 32 Continuing Education (CE) credits toward recertification.

How you'll benefit

This training will help you:

- Install, configure, and maintain a Cisco NSO solution
- Apply DevOps best practices for Cisco NSO development, operations, and administrative tasks
- Implement Layered Service Architecture (LSA) within a Cisco NSO solution
- Gain knowledge for protocols, solutions, and designs to acquire professional-level and expert-level networking roles
- Earn 32 CE credits toward recertification

Who should enroll

- DevOps Engineers
- Integration Engineers

- Network and Software architects
- Network Engineers
- Software Engineers
- System Administrators

Technology areas

- Software-defined Networking
- Service Provider

Objectives

- Describe network and IT convergence
- Describe Cisco NSO architecture
- Describe Linux
- Configure Cisco NSO
- Set up access control to Cisco NSO system
- Describe Cisco NSO Integration Options
- Explain version control systems and basic git concepts
- Describe the purpose of continuous integration and continuous delivery
- Implement Cisco NSO high availability
- Describe scalable system management
- Describe software development methodologies
- Describe service maintenance
- Perform NED upgrades
- Use Cisco NSO for managing services and their associated device configurations
- Describe Cisco NSO change management
- Explain service problem management
- Use Cisco NSO for service monitoring and compliance reporting
- Describe Cisco NSO inventory management
- Describe Cisco NSO use cases

Prerequisites

There are no prerequisites for this training. However, the knowledge and skills you are recommended to have before attending this training are:

- Basic knowledge of the Cisco CLI
- Basic knowledge of the CLI of UNIX-like operating systems
- Basic knowledge of Yet Another Next Generation (YANG) data modelling
- Basic knowledge of Python software development

These skills can be found in the following Cisco Learning Offerings:

- NSO Essentials for Programmers and Network Architects (NS0201)
- Cisco NSO Advanced for Python Programmers (NSO300)

Outline

- Introducing Network and IT Convergence

- Introducing Cisco NSO Architecture
- Introducing Linux
- Explaining Cisco NSO Setup
- Exploring Access Control
- Describing Integration Options
- Explaining Version Control System
- Describing Continuous Integration and Continuous Delivery
- Introducing Scalability and High Availability
- Describing Scalable System Management
- Describing Software Development Methodologies
- Introducing Service Maintenance
- Performing NED Upgrades
- Introducing Configuration Management
- Describing Change Management
- Explaining Service Problem Management
- Explaining Service Monitoring and Compliance Reporting
- Introducing Inventory Management
- Describing Cisco NSO Use Cases

Lab Outline

- Perform NSO System Install
- Implement Role-Based Access and PAM
- Using Cisco NSO APIs
- Learn to work with Git
- Use NSO in Docker
- Configure High Availability
- Migrating a Monolithic Service to LSA
- Deploying the LSA Services
- Use the Network Connectivity Tool (NCT)
- Perform Service Backup and Restore
- Migrate a CDM Device
- Build a NETCONF NED
- Replacing a Device
- Troubleshoot NSO Alarms and Services
- Creating a Compliance Report

Links

- Cisco U. Learning Path
- Cisco Learning Network Store
- Cisco Learning Locator