NSO Advanced for Python Programmers

Duration: 5 Days **Course Code: NSO300** **Version: 4.0**

Overview:

The **Cisco Network Services Orchestrator (NSO) Advance Python Programmers (NSO300)** course continues the learning journey of the NSO Essentials for Programmers and Network Architects (NSO201) course with NSO to include customizing templates with Python programming, Docker deployment, and Nano services. You will learn to create advanced services using the NSO application framework and Python scripting with both new and existing Layer 3 Multiprotocol Label Switching (MPLS) VPN services. You will also learn how to manage and scale these services to reduce operation consumption, and increase both security and available physical space, since virtualized network functions (VNFs) replace physical hardware. You will use Network Functions Virtualization (NFV) orchestration features, and Cisco Elastic Services Controller (ESC) to manage virtualized network functions.
This course will help you:
Tailor a Cisco Network Services Orchestrator solution for your organization
Manage virtualized network functions (VNFs) automated, efficient, and dynamic network functioning

Target Audience:

Individuals involved in the integration, deployment and administration of a Cisco NSO Solution.

Objectives:

- **After completing this course, you should be able to:**
- Describe the NSO application framework
- Deploy NSO in Docker
- Implement Python- and template-based service
- Describe service lifecycle integration
- Describe the implementation of Layer 3 MPLS VPN service for a new service deployment
- Implement Nano services
- Describe the implementation of Layer 3 MPLS VPN service for an existing deployment
- Describe managed services
- Implement stacked services
- Describe how to scale service orchestration
- Describe the European Telecommunications Standards Institute Management and Orchestration (ETSI MANO) Framework
- Manage VNF Lifecycle with Cisco ESC
- Implement NFV

Prerequisites:

Attendees should meet the following prerequisites:

- Basic knowledge of the command line of UNIX-like operating systems
- Basic knowledge of Network Configuration Protocol (NETCONF)
- Basic knowledge of Yet Another Next Generation (YANG) data modelling
- Basic knowledge of Python software development
- Knowledge and skills obtainable by attending the following course

Testing and Certification

Recommended as preparation for the following exams:

- There is no exam currently aligned to this course

Content:

Discovering the NSO Application Framework

- NSO Transaction Model and Mapping Options
- NSO Python API Overview

Deploying NSO in Docker Containers

- Comparing NSO Deployments
- NSO in Docker Overview

Developing Python and Template-Based Service

- Service Strategy
- Service Design—Service Model

Integrating Service Lifecycle

- Service Lifecycle Overview
- Integration Options Overview

Developing a Layer 3 MPLS VPN Service for New Service Deployment

- Service Strategy
- Service Design—Service Model

Developing Nano Services

- Nano Services
- Service Design Manual Resource Allocation

Developing Layer 3 MPLS VPN Service for Existing Deployment

- Existing Service Deployment Strategy
- Existing Service Deployment Design

Introducing Managed Services

- Managed Services Overview
- Resource Allocation

Implementing Stacked Services

- Stacked Services Strategy
- Implementing Resource-Facing Services

Scaling Service Orchestration

- Optimization Options
- Layered Services Architecture Design

Discovering the ETSI MANO Framework

- Network Functions Virtualization Initiative
- ETSI MANO

Managing VNF Lifecycle with Cisco ESC

- Introduction to Cisco ESC
- VNF Lifecycle Management

Orchestrating NFV

- NFV Orchestration (NFVO) Bundle Introduction
- VNF Descriptor

Labs

- Create NSO Docker Environments
- Create Switch Virtual Interface (SVI) Service Using Premodification Service Callback
- Implement Nano Services
- Create an L3VPN Service Using Dynamic ID Allocation
- Perform an L3VPN Service Upgrade
- Implement Stacked Services
- Deploy Link State Advertisement (LSA) Service
- Integrate Cisco ESC and OpenStack
- Deploy NFV for Demilitarized Zone [[OK?]](DMZ) Service
- Implement Self-Test Action

Further Information:

For More information, or to book your course, please call us on 0800/84.009

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