Operating NetDevOps (NDO-303)

COURSE OVERVIEW

You are a member of the operations team. Your role will be to fully utilize the NetDevOps process when performing network moves, adds, and changes. You will master the CI/CD pipeline. You will transition from command line management, to model-driven network management. You will also develop skills in network deployment testing using CML. This class includes Cisco Modeling Labs essentials.

WHO WILL BENEFIT FROM THIS COURSE?

- Network Administrators
- Administrators interested in Automation
- CCNA's interested in Network Automation

PREREQUISITES

CCNA or equivalent job experience

COURSE OBJECTIVES

- Learn to run an existing, fully operational MDD network
- Transition skills from command line to Model driven network management
- Learn to modify the Source of Truth
- Write the Validation Schema
- Run Test Scenarios

COURSE OUTLINE

Comprehensive Overview of NetDevOps Workflow
- Lecture: Revisiting NetDevOps principles with a focus on change management
- Lecture + Lab: The role of CI/CD pipelines in managing network changes

Writing Network Changes with Ansible and GitLab
- Lecture + Lab: Structuring Ansible playbooks for network configuration changes
- Lecture + Lab: Version control for network changes using Git and GitLab
- Lecture + Lab: Developing and committing a network change

Integrating Source of Truth with Network Changes
- Lecture + Lab: Ensuring data accuracy in documentation and databases
- Lecture + Lab: Dynamic inventory management with Netbox
- Lecture + Lab: Querying and updating the Source of Truth in response to network changes

Testing Network Changes
- Lecture: Strategies for effective testing of network configurations
- Lecture + Lab: Utilizing Cisco Modeling Labs (CML) for pre-deployment testing
- Lecture + Lab: Workshop: Creating test cases and simulating network changes in CML

CI/CD Pipeline for Network Change Deployment
- Lecture + Lab: Deploying changes through the CI/CD pipeline
- Lecture + Lab: Utilizing AI validation methods in the CI/CD pipeline
- Lecture + Lab: Incorporating automated tests and approval processes
- Lecture + Lab: Deploying and monitoring a network change

Rollback Strategies and Operational Continuity
- Lecture: Principles of Network Change Rollback
- Lecture: Importance of rollback in network operations
- Lecture: Understanding rollback strategies for network changes
- Lecture + Lab: Version control for rollback code using Git
- Lecture + Lab: Implementing automated tests for rollback effectiveness
- Lecture + Lab: Workshop: Testing rollback code in Cisco Modeling Labs (CML)

Operationalizing Network Changes and Rollbacks**
- Lecture: Best practices for operationalizing changes and rollbacks
- Lecture + Lab: Scenario-based exercises: Handling unexpected network issues

Best Practices Recap
- Lecture: Review of change management and rollback strategies in NetDevOps
- Lecture: Open discussion on implementing learned skills in real-world networks

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