CCNP DC Overview

The CCNP Data Center course proposed comprehensive certification and Professional-level skills and knowledge target on the data center solutions, technologies and best practices to manage, design, and implement a modern data center infrastructure.

IT practitioners who are Cisco trained and certified are uniquely suitable for job roles in complex data center surrounding, with master in utilizing technologies including virtualization, policy-driven infrastructure, orchestration, and automation integration of cloud initiatives, unified computing, and data center security.

About the training

- **Study Material:-** Online Live Lectures, Streaming Recorded Training Videos, Online Lab Workbook, and Remote Virtual Lab access.
- **Duration:-** 3 Months

Requirements

Candidates are recommended to have atleast Cisco CCNA Data Center certification or any Cisco CCIE certification.

What you will learn

- Execute routing and switching protocols in Data Center environment
- Execute overlay networks in data center
- Explain Cisco Cloud Service and deployment models
- Execute Fibre Channel fabric
- Execute Fibre Channel over Ethernet (FCoE) unified fabric
- Execute security features in data center
- Execute software management and infrastructure monitoring
- Execute Cisco UCS Fabric Interconnect and Server abstraction
- Execute SAN connectivity for Cisco Unified Computing System™ (Cisco UCS®)
- Explain Cisco HyperFlex™ infrastructure concepts and benefits
- Execute Cisco automation and scripting tools in data center
- Assess automation and orchestration technologies

About Instructor

The instructor of this training is master in technology and has 8+ years of industrial experience. He has delivered vast and complex project on the same around the globe. In his experienced life, he has conveyed 80+ corporate and retail programs in different organization.

Course Content

Core Exam (350 – 601 DCCOR)

- Executing Data Center Switching Protocols
    - Spanning Tree Protocol
    - Port Channels Overview
    - Virtual Port Channels Overview
- Executing First-Hop Redundancy Protocols
    - Hot Standby Router Protocol (HSRP) Overview
    - Virtual Router Redundancy Protocol (VRRP) Overview
    - First Hop Redundancy Protocol (FHRP) for IPv6
- Executing Routing in Data Center
    - OSPF v2 and OSP v3
    - Border Gateway Protocol
- Executing Multicast in Data Center
    - IP Multicast in Data Center Networks
    - IGMP and MLD
    - Multicast Distribution Trees and Routing Protocols
    - IP Multicast on Cisco Nexus Switches
- Executing Data Center Overlay Protocols
    - Cisco Overlay Transport Virtualization
    - Virtual Extensible LAN
- Executing Network Infrastructure Security
    - User Accounts and Role Based Access Control (RBAC)
    - Authentication, Authorization, and Accounting (AAA) and SSH on Cisco NX-OS
    - Keychain Authentication
    - First Hop Security
    - Media Access Control Security
    - Control Plane Policing
- Outline Cisco Application-Centric Infrastructure
    - Cisco ACI Overview, Initialization, and Discovery
    - Cisco ACI Management
    - Cisco ACI Fabric Access Policies
- Outline Cisco ACI Building Blocks and VMM Domain Integration
    - Tenant-Based Components
    - Cisco ACI Endpoints and Endpoint Groups (EPG)
    - Controlling Traffic Flow with Contracts
    - Virtual Switches and Cisco ACI VMM Domains
    - VMM Domain EPG Association
    - Cisco ACI Integration with Hypervisor Solutions

- Outline Packet Flow in Data Center Network*
    - Data Center Traffic Flows
    - Packet Flow in Cisco Nexus Switches
    - Packet Flow in Cisco ACI Fabric
- Outline Cisco Cloud Service and Deployment Models
    - Cloud Architectures
    - Cloud Deployment Models
- Outline Data Center Network Infrastructure Management, Maintenance, and Operations
    - Time Synchronization
    - Network Configuration Management
    - Software Updates
    - Network Infrastructure Monitoring
- Explaining Cisco Network Assurance Concepts
    - Need for Network Assurance
    - Cisco Streaming Telemetry Overview
- Executing Fibre Channel Fabric
    - Fibre Channel Basics
    - Virtual Storage Area Network (VSAN) Overview
    - SAN Port Channels Overview
    - Fibre Channel Domain Configuration Process
- Executing Storage Infrastructure Services
    - Distributed Device Aliases
    - Zoning
    - N-Port Identifier Virtualization (NPIV) and N-Port Virtualization (NPV)
    - Fibre Channel over IP
    - Network Access Server (NAS) Concepts
    - Storage Area Network (SAN) Design Options
- Executing FCoE Unified Fabric
    - Fibre Channel over Ethernet
    - Describing FCoE
    - FCoE Topology Options
    - FCoE Implementation
- Executing Storage Infrastructure Security
    - User Accounts and RBAC
    - Authentication, Authorization, and Accounting
    - Fibre Channel Port Security and Fabric Binding
- Outline Data Center Storage Infrastructure Maintenance and Operations
    - Time Synchronization
    - Software Installation and Upgrade
    - Storage Infrastructure Monitoring
- Outline Cisco UCS Server Form Factors
    - Cisco UCS B-Series Blade Servers
    - Cisco UCS C-Series Rack Servers
- Executing Cisco Unified Computing Network Connectivity
    - Cisco UCS Fabric Interconnect
    - Cisco UCS B-Series Connectivity

    - Cisco UCS C-Series Integration
- Executing Cisco Unified Computing Server Abstraction
    - Identity Abstraction
    - Service Profile Templates
- Executing Cisco Unified Computing SAN Connectivity
    - iSCSI Overview
    - Fibre Channel Overview
    - Implement FCoE
- Executing Unified Computing Security
    - User Accounts and RBAC
    - Options for Authentication
    - Key Management
- Introducing Cisco HyperFlex Systems
    - Hyperconverged and Integrated Systems Overview
    - Cisco HyperFlex Solution
    - Cisco HyperFlex Scalability and Robustness
- Outline Data Center Unified Computing Management, Maintenance, and Operations
    - Compute Configuration Management
    - Software Updates
    - Infrastructure Monitoring
    - Cisco Intersight™
- Executing Cisco Data Center Automation and Scripting Tools
    - Cisco NX-OS Programmability
    - Scheduler Overview
    - Cisco Embedded Event Manager Overview
    - Bash Shell and Guest Shell for Cisco NX-OS
    - Cisco Nexus API
- Outline Cisco Integration with Automation and Orchestration Software Platforms
    - Cisco and Ansible Integration Overview
    - Cisco and Puppet Integration Overview
    - Python in Cisco NX-OS and Cisco UCS
- Outline Cisco Data Center Automation and Orchestration Technologies
    - Power On Auto Provisioning
    - Cisco Data Center Network Manager Overview
    - Cisco UCS Director Fundamentals
    - Cisco UCS PowerTool

Lab outline

- Compose Overlay Transport Visualization (OTV)
- Compose Virtual Extensible LAN (VXLAN)
- Explore the Cisco ACI Fabric
- Execute Cisco ACI Access Policies and Out-of-Band Management
- Execute Cisco ACI Tenant Policies
- Integrate Cisco ACI with VMware
- Compose Fibre Channel
- Compose Device Aliases

- Compose Zoning
- Compose NPV
- Compose FCoE
- Provision Cisco UCS Fabric Interconnect Cluster
- Compose Server and Uplink Ports
- Compose VLANs
- Compose a Cisco UCS Server Profile Using Hardware Identities
- Compose Basic Identity Pools
- Compose a Cisco UCS Service Profile Using Pools
- Compose an Internet Small Computer Systems Interface (iSCSI) Service Profile
- Compose Cisco UCS Manager to Authenticate Users with Microsoft Active Directory
- Program a Cisco Nexus Switch with Python

Concentration Exam (Choose Any One)

Option 1: Designing Cisco Data Center Infrastructure (300-610 DCID)

300-610 DCID Course Outline

- Describing High Availability on Layer 2
  - Overview of Layer 2 High-Availability Mechanisms
  - Virtual Port Channels
  - Cisco Fabric Path
  - Virtual Port Channel+
- Designing Layer 3 Connectivity
  - First Hop Redundancy Protocols
  - Improve Routing Protocol Performance and Security
  - Enhance Layer 3 Scalability and Robustness
- Designing Data Center Topologies
  - Data Center Traffic Flows
  - Cabling Challenges
  - Access Layer
  - Aggregation Layer
  - Core Layer
  - Spine-and-Leaf Topology
  - Redundancy Options
- Designing Data Center Interconnects with Cisco OTV
  - Cisco OTV Overview
  - Cisco OTV Control and Data Planes
  - Failure Isolation
  - Cisco OTV Features
  - Optimize Cisco OTV
  - Evaluate Cisco OTV

- Describing Locator/ID Separation Protocol
    - Locator/ID Separation Protocol
    - LISP Virtual Machine (VM) Mobility
    - LISP Extended Subnet Mode (ESM) Multihop Mobility
    - LISP VPN Virtualization
- Describing VXLAN Overlay Networks
    - Describe VXLAN Benefits over VLAN
    - Layer 2 and Layer 3 VXLAN Overlay
    - MP-BGP Ethernet VPN (EVPN) Control Plane Overview
    - VXLAN Data Plane
- Describing Hardware and Device Virtualization
    - Hardware-Based High Availability
    - Device Virtualization
    - Cisco UCS Hardware Virtualization
    - Server Virtualization
    - SAN Virtualization
    - N-Port ID Virtualization
- Describing Cisco FEX Options
    - Cisco Adapter FEX
    - Access Layer with Cisco FEX
    - Cisco FEX Topologies
    - Virtualization-Aware Networking
    - Single Root I/O Virtualization
    - Cisco FEX Evaluation
- Describing Basic Data Center Security
    - Threat Mitigation
    - Attack and Countermeasure Examples
    - Secure the Management Plane
    - Protect the Control Plane
    - RBAC and AAA
- Describing Advanced Data Center Security
    - Cisco TrustSec in Cisco Secure Enclaves Architecture
    - Cisco TrustSec Operation
    - Firewalling
    - Positioning the Firewall Within Data Center Networks
    - Cisco Firepower® Portfolio
    - Firewall Virtualization
    - Design for Threat Mitigation
- Describing Management and Orchestration
    - Network and License Management
    - Cisco UCS Manager
    - Cisco UCS Director
    - Cisco Intersight
    - Cisco DCNM Overview
- Describing Storage and RAID Options

    - Position DAS in Storage Technologies
    - Network-Attached Storage
    - Fibre Channel, FCoE, and iSCSI
    - Evaluate Storage Technologies
- Describing Fibre Channel Concepts
    - Fibre Channel Connections, Layers, and Addresses
    - Fibre Channel Communication
    - Virtualization in Fibre Channel SAN
- Describing Fibre Channel Topologies
    - SAN Parameterization
    - SAN Design Options
    - Choosing a Fibre Channel Design Solution
- Describing FCoE
    - FCoE Protocol Characteristics
    - FCoE Communication
    - Data Center Bridging
    - FCoE Initialization Protocol
    - FCoE Design Options
- Describing Storage Security
    - Common SAN Security Features
    - Zones
    - SAN Security Enhancements
    - Cryptography in SAN
- Describing SAN Management and Orchestration
    - Cisco DCNM for SAN
    - Cisco DCNM Analytics and Streaming Telemetry
    - Cisco UCS Director in the SAN
    - Cisco UCS Director Workflows
- Describing Cisco UCS Servers and Use Cases
    - Cisco UCS C-Series Servers
    - Fabric Interconnects and Blade Chassis
    - Cisco UCS B-Series Server Adapter Cards
    - Stateless Computing
    - Cisco UCS Mini
- Describing Fabric Interconnect Connectivity
    - Use of Fabric Interconnect Interfaces
    - VLANs and VSANs in a Cisco UCS Domain
    - Southbound Connections
    - Northbound Connections
    - Disjoint Layer 2 Networks
    - Fabric Interconnect High Availability and Redundancy
- Describing Hyperconverged and Integrated Systems
    - Hyperconverged and Integrated Systems Overview
    - Cisco HyperFlex™ Solution
    - Cisco HyperFlex Scalability and Robustness

    - Cisco HyperFlex Clusters
    - Cluster Capacity and Multiple Clusters on One Cisco UCS Domain
    - External Storage and Graphical Processing Units on Cisco HyperFlex
    - Cisco HyperFlex Positioning
- Describing Cisco UCS Manager Systemwide Parameters
    - Cisco UCS Setup and Management
    - Cisco UCS Traffic Management
- Describing Cisco UCS RBAC
    - Roles and Privileges
    - Organizations in Cisco UCS Manager
    - Locales and Effective Rights
    - Authentication, Authorization, and Accounting
    - Two-Factor Authentication
- Describing Pools for Service Profiles
    - Global and Local Pools
    - UUID Suffix and MAC Address Pools
    - World Wide Name (WWN) Pools
    - Server and iSCSI Initiator IP Pools
- Describing Policies for Service Profiles
    - Global vs. Local Policies
    - Storage and Basic Input/Output System (BIOS) Policies
    - Boot and Scrub Policies
    - IPMI and Maintenance Policies
- Describing Network-Specific Adapters and Policies
    - LAN Connectivity Controls
    - SAN Connectivity Controls
    - Virtual Access Layer
    - Connectivity Enhancements
- Describing Templates in Cisco UCS Manager
    - Cisco UCS Templates
    - Service Profile Templates
    - Network Templates
- Designing Data Center Automation
    - Model-Driven Programmability
    - Cisco NX-API Overview
    - Programmability Using Python
    - Cisco Ansible Module
    - Use the Puppet Agent

Lab Outline

- Design Virtual Port Channels
- Design First Hop Redundancy Protocol (FHRP)

- Design Routing Protocols
- Design Data Center Topology for a Customer
- Design Data Center Interconnect Using Cisco OTV
- Design Your VXLAN Network
- Create a Cisco FEX Design
- Configure Management and Orchestration in a Cisco UCS Solution
- Design a Fibre Channel Network
- Design and Integrate an FCoE Solution
- Design a Secure SAN
- Configure Cisco UCS Director for Storage Networking
- Configure a Cisco UCS Domain and Fabric Interconnect Cabling
- Configure a Cisco UCS C-Series Server Implementation
- Configure Cisco UCS Fabric Interconnect Network and Storage Connectivity
- Configure Systemwide Parameters in a Cisco UCS Solution
- Design an LDAP Integration with a Cisco UCS Domain
- Design Pools for Service Profiles in a Cisco UCS Solution
- Configure Network-Specific Adapters and Policies in a Cisco UCS Solution

Option 2: Troubleshooting Cisco Data Center Infrastructure (300-615 DCIT)

300-615 DCIT Course Outline

- Describing the Troubleshooting Process
    - Troubleshooting Overview
    - Narrow Down the Cause of the Problem
- Understanding CLI Troubleshooting Tools
    - Ping, Pong, and Traceroute
    - Debugging, Event History, and System Monitoring
    - Switched Port Analyzer (SPAN) and Encapsulated Remote SPAN
    - ELAM, and Data Plane Sampling Capture
    - Logging
    - Cisco Generic Online Diagnostics
    - SNMP, Cisco EEM, and Remote Network Monitor (RMON)
- Troubleshooting VLANs and PVLANs
    - Troubleshoot VLAN Trunking Protocol (VTP)
    - Troubleshoot Layer 2 Issues
    - VLANs and Switched Virtual Interfaces (SVIs) on Cisco Nexus Series Switches
    - Troubleshoot VLANs, PVLANs, and SVIs
    - Troubleshoot Rapid Per VLAN Spanning Tree+ (PVST+)
- Troubleshooting Port Channels and Virtual Port Channels
    - Port Channel Overview
    - Virtual Port Channel (vPC) Overview
    - Troubleshoot vPCs

    - Common vPC Issues
- Troubleshooting Cisco Overlay Transport Virtualization (OTV)
    - Cisco OTV Features
    - Common Cisco OTV Issues
    - Cisco OTV Troubleshooting
    - HSRP Isolation Between Data Centers Using Cisco OTV
- Troubleshooting Virtual Extensible LAN (VXLAN)
    - VXLAN Overlay Features
    - VXLAN MP-BGP Ethernet VPN
    - Common VXLAN Issues
    - VXLAN Troubleshooting
- Troubleshooting Routing and High-Availability Protocols
    - Troubleshoot Basic Routing Issues
    - Troubleshoot OSPFv2 and OSPFv3
    - Troubleshoot EIGRP
    - Troubleshoot PIM
    - Troubleshoot First Hop Redundancy Protocol (FHRP)
- Troubleshoot Data Center LAN Security
    - Troubleshoot AAA and Role-Based Access Control (RBAC)
    - Troubleshoot First-Hop Security
    - Troubleshoot Control Plane Policing (CoPP)
    - Troubleshoot Access Control Lists (ACLs)
- Troubleshooting Platform-Specific Issues
    - Cisco Fabric Services Overview
    - Troubleshoot Cisco Fabric Services
    - Configure and Troubleshoot Configuration Profiles
    - Common Virtual Device Contexts (VDC) Issues
    - Troubleshoot VDC
    - Troubleshoot Virtual Routing and Forwarding (VRF)
    - Cisco FEX Troubleshooting
    - Troubleshoot Cisco In-Service Software Upgrade (ISSU)
- Troubleshooting Fibre Channel Interfaces
    - Fibre Channel Overview
    - Troubleshoot Fibre Channel Interfaces and Device Registration
    - Troubleshoot Fibre Channel Port Channels
    - Troubleshoot Port Security and Fabric Binding
- Troubleshooting Fibre Channel Fabric Services
    - Troubleshoot Virtual Storage Area Networks (VSANs)
    - Troubleshoot Fibre Channel Domain and Name Services
    - Troubleshoot Zoning and Fabric Merges
    - Troubleshoot Cisco Fabric Services
- Troubleshooting NPV Mode
    - N-Port ID Virtualization (NPIV) and NPV Overview
    - Troubleshoot NPV Mode

- Troubleshooting FCoE
    - FCoE and FIP Overview
    - Troubleshoot FIP
    - Troubleshoot FCoE- and QoS-Related Issues
    - Troubleshoot Data Center Bridging (DCB)
- Troubleshooting Cisco UCS Architecture and Initialization
    - Troubleshoot Fabric Interconnect in Standalone and Cluster Mode
    - Troubleshoot Cisco UCS Management Access
    - Troubleshoot Cisco UCS Manager CLI
    - Troubleshoot Cisco UCS with Embedded Tools
    - Troubleshoot Cisco UCS Hardware Discovery
- Troubleshooting Cisco UCS Configuration
    - Stateless Computing
    - Troubleshoot Service Profile Association Issues Due to Unavailable Addresses
    - Other Service Profile Association Issues
    - Cisco UCS Manageability
    - Troubleshoot Authentication Failures
- Troubleshooting Cisco UCS B-Series Servers
    - Troubleshoot Cisco UCS B-Series Blade Server
    - Troubleshoot Firmware Upgrade and Operating System Drivers
    - Troubleshoot Remote Access
    - Troubleshoot Server Hardware
- Troubleshooting Cisco UCS B-Series LAN and SAN Connectivity
    - Troubleshoot Link-Level Issues
    - Troubleshoot Connectivity Issues for Specific Servers
    - Troubleshoot Intermittent Connectivity
    - Troubleshoot Disjoint Layer 2 Networks
    - Troubleshoot Redundant Connectivity
    - Troubleshoot Cisco UCS B-Series SAN Connectivity
    - Troubleshoot Directly Attached Storage
    - Troubleshoot Server Boot from SAN and iSCSI
    - Use SPAN for Troubleshooting
    - Analyze Packet Flow
- Troubleshooting Cisco UCS C-Series Servers
    - Troubleshoot Cisco UCS C-Series Initialization and Cisco IMC
    - Troubleshoot Cisco UCS C-Series Hardware and Firmware
- Troubleshooting Cisco UCS C-Series LAN and SAN Connectivity
    - Fix the Cisco UCS C-Series VIC Module and Connectivity to Cisco IMC
    - Troubleshoot Cisco UCS C-Series LAN Connectivity
    - Troubleshoot Cisco UCS C-Series SAN Connectivity
    - Use SPAN to Capture Cisco UCS C-Series Server Traffic
    - Fix the Cisco UCS C-Series Boot from the Fibre Channel Logical Unit Number LUN
    - Troubleshoot Cisco UCS C-Series iSCSI Boot
- Troubleshooting Cisco UCS C-Series and Cisco UCS Manager Integration
    - Integrate Cisco UCS C-Series Servers with Cisco UCS Manager

    - Troubleshoot FEX Discovery and VIC Issues
- Exploring the Tools and Methodologies for Troubleshooting Cisco ACI
    - Troubleshoot the Fabric Discovery Process
    - Traditional Troubleshooting Methods in Cisco ACI
    - Atomic Counters, Faults, and Health Scores
    - Troubleshoot Tenant-Based Policies
    - Packet Flow Through Cisco ACI Fabric
    - Troubleshoot AAA and RBAC
- Troubleshoot Automation and Scripting Tools
    - Troubleshoot Cisco Internetwork Operating System (IOS) EEM
    - Troubleshoot the Cisco NX-OS Scheduler
- Troubleshooting Programmability
    - Troubleshoot Bash Shell and Guest Shell for NX-OS
    - Troubleshoot REST API, JavaScript Object Notation (JSON), and XML Encodings

Lab Outline

- Designing Enterprise Connectivity
- Designing an Enterprise Network with BGP Internet Connectivity
- Designing an Enterprise Campus LAN
- Designing Resilient Enterprise WAN
- Designing QoS in an Enterprise Network
- Designing an Enterprise IPv6 Network

Option 3: Implementing Cisco Application Centric Infrastructure (300-620 DCACI)

300-620 DCACI Course Outline

- Introducing Cisco ACI Fabric Infrastructure and Basic Concepts
    - What Is Cisco ACI?
    - Cisco ACI Topology and Hardware
    - Cisco ACI Object Model
    - Faults, Event Record, and Audit Log
    - Cisco ACI Fabric Discovery
    - Cisco ACI Access Policies
- Describing Cisco ACI Policy Model Logical Constructs
    - Cisco ACI Logical Constructs
    - Tenant
    - Virtual Routing and Forwarding
    - Bridge Domain

    - Endpoint Group
    - Application Profile
    - Tenant Components Review
    - Adding Bare-Metal Servers to Endpoint Groups
    - Contracts
- Describing Cisco ACI Basic Packet Forwarding
    - Endpoint Learning
    - Basic Bridge Domain Configuration Knob
- Introducing External Network Connectivity
    - Cisco ACI External Connectivity Options
    - External Layer 2 Network Connectivity
    - External Layer 3 Network Connectivity
- Introducing VMM Integration
    - VMware vCenter VDS Integration
    - Resolution Immediacy in VMM
    - Alternative VMM Integrations
- Describing Layer 4 to Layer 7 Integrations
    - Service Appliance Insertion Without ACI L4-L7 Service Graph
    - Service Appliance Insertion via ACI L4-L7 Service Graph
    - Service Graph Configuration Workflow
    - Service Graph PBR Introduction
- Explaining Cisco ACI Management
    - Out-of-Band Management
    - In-Band Management
    - Syslog
    - Simple Network Management Protocol
    - Configuration Backup
    - Authentication, Authorization, and Accounting
    - Role-Based Access Control
    - Cisco ACI Upgrade
    - Collect Tech Support

Lab Outline

- Validate Fabric Discovery
- Configure Network Time Protocol (NTP)
- Create Access Policies and Virtual Port Channel (vPC)
- Enable Layer 2 Connectivity in the Same Endpoint Group (EPG)
- Enable Inter-EPG Layer 2 Connectivity

- Enable Inter-EPG Layer 3 Connectivity
- Compare Traffic Forwarding Methods in a Bridge Domain
- Configure External Layer 2 (L2Out) Connection
- Configure External Layer 3 (L3Out) Connection
- Integrate APIC With VMware vCenter Using VMware Distributed Virtual Switch (DVS)

Option 4: Configuring Cisco MDS 9000 Series Switches (300-625 DCSAN)

300-625 DCSAN Course Outline

- Describing Cisco MDS Platform
    - Cisco MDS 9700/9300/9200/9100 Hardware
    - Cisco NX-OS
    - Cisco DCNM
    - Fibre Channel Architecture
    - FCoE Architecture
- Describing Key Product Features
    - Cisco DCNM 11.x
    - RBAC and AAA
    - Virtual SANs
    - NPV and NPIV
    - Port Channels and VSAN Trunking
    - Zoning and Smart Zoning
    - Device Aliases
    - Inter-VSAN Routing
    - Fibre Channel Fabric Security
- Describing New Product Features
    - 32-Gb Fibre Channel
    - Cisco MDS NX-API
    - Power-On Auto-Provisioning
    - Slow Drain Analysis
    - Analytics and SAN Telemetry Streaming
    - Cisco Secure Boot
- Deploying Cisco MDS Features
    - Installation and Initial Setup
    - Building a Fabric: FC Domains and FC Services
    - Building SAN Extensions
- Troubleshooting Common Cisco MDS Issues
    - Fibre Channel Domains
    - Zones and Zone Merges
    - Boot and Upgrade Issues

Lab Outline

- Set Up DCNM
- Explore DCNM-SAN Client and DCNM Device Manager
- Configure and Use RBAC
- Design and Use RBAC with DCNM-SAN Client and Device Manager
- Manage VSANs and Fibre Channel Domain
- Design NPV and N-Port Identification Virtualization (NPIV)
- Configure Interfaces
- Configure Device Aliases and Zoning
- Explore and Automate with NX-API
- Perform Slow Drain Analysis with Cisco DCNM
- Configure SAN Analysis and SAN Telemetry Streaming
- Configure FCIP Tunnels and FCIP High Availability (HA)
- Configure IVR for SAN Extension
- Troubleshoot Zoning and Zone Merges

Option 5: Implementing Automation for Cisco Data Center Solutions (300-635 DCAUTO)

300-635 DCAUTO Course Outline

- Describing the Cisco ACI Policy Model
- Describing the Cisco APIC REST API
- Using Python to Interact with the ACI REST API
- Using Ansible to Automate Cisco ACI
- Describing Cisco ACI Apps Center and Kubernetes Integration
- Introducing Cisco NX-OS Programmability
- Describing Day-Zero Provisioning with Cisco NX-OS
- Implement On-Box Programmability and Automation with Cisco NX-OS
- Implement Off-Box Programmability and Automation with Cisco NX-OS
- Understanding Model-Driven Telemetry
- Automating Cisco UCS Using Developer Tools
- Implementing Workflows Using Cisco UCS Director
- Describing Cisco DCNM
- Describing Cisco Intersight

Lab Outline

- Use Cisco APIC Web GUI
- Discover the Cisco APIC REST API
- Use Postman with the APIC REST API
- Use Python with the Cisco APIC REST API

- Configure and Verify Cisco ACI Using Acitoolkit
- Use Cobra and Arya to Recreate a Tenant
- Manage Configuration Using Ansible
- Set Up a New Tenant the NetDevOps Way
- Create an Infrastructure Health Report
- Install an Application from the App Center on the Cisco APIC
- Power on Auto Provisioning on the Cisco Nexus 9000
- Use Bash and Guest-Shell on Cisco NX-OS
- Use Python to Enhance CLI Commands
- Trigger a Python Script Using Cisco Embedded Event Manager (EEM)
- Docker Containers on NX-OS
- Configure and Verify Using NX-API and Python
- Configure and Verify Using NETCONF/YANG
- Use Ansible with NX-OS
- Streaming Telemetry
- Connect, Query, and Modify Cisco UCS Manager Objects Using Cisco UCS PowerTool
- Discovery 21: Connect, Query, and Modify Cisco UCS IMC Objects Using Cisco IMC PowerTool
- Utilize Cisco UCS Python Software Development Kit (SDK)
- Utilize Cisco IMC Python SDK
- Implement Ansible Playbooks to Modify and Verify the Configuration of Cisco UCS Manager

Note: ***Most of the course topics are covered with hands-on lab exercises and others are theoretical

Thank You
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