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Learning Style: Virtual Classroom

Technology: Cisco

Difficulty: Intermediate

Course Duration: 5 Days

Implementing and Operating Cisco Data Center Core Technologies (DCCOR)



About this course:

Implementing and Operating Cisco Data Center Core Technologies (DCCOR) is a 5-day course where you will master the skills and technologies you need to implement data center compute, LAN and SAN infrastructure. You will also learn the essentials of automation and security in data centers. You will get hands-on experience with deploying, securing, operating, and maintaining Cisco data center

infrastructure including: Cisco MDS Switches and Cisco Nexus Switches; Cisco Unified Computing System™ (Cisco UCS®) B-Series Blade Servers, and Cisco UCS C-Series Rack Servers.

This course, including the self-paced material, helps prepare you to take the exam, **Implementing Cisco Data Center Core Technologies** (350-601 DCCOR), which leads to the new **CCNP Data Center**, **CCIE Data Center**, and the **Cisco Certified Specialist - Data Center Core** certifications.

Course Objective:

Upon completing this course, the learner will be able to meet these overall objectives:

- Implement routing and switching protocols in Data Center environment
- Implement overlay networks in data center
- Introduce high-level Cisco Application Centric Infrastructure (Cisco ACI™) concepts and Cisco Virtual Machine manager (VMM) domain integration
- Describe Cisco Cloud Service and deployment models
- Implement Fibre Channel fabric
- Implement Fibre Channel over Ethernet (FCoE) unified fabric
- Implement security features in data center
- Implement software management and infrastructure monitoring
- Implement Cisco UCS Fabric Interconnect and Server abstraction
- Implement SAN connectivity for Cisco Unified Computing System™ (Cisco UCS®)
- Describe Cisco HyperFlex™ infrastructure concepts and benefits
- Implement Cisco automation and scripting tools in data center
- Evaluate automation and orchestration technologies

Audience:

The primary audience for this course is as follows:

- Network designers
- Network administrators
- Network engineers
- Systems engineers
- Data center engineers
- Consulting systems engineers
- Technical solutions architects
- Field engineers
- Cisco integrators and partners
- Server administrator
- Network manager

Prerequisite:

The knowledge and skills that the learner should have before attending this course

are as follows:

- Familiarity with Ethernet and TCP/IP networking
- Familiarity with SANs
- Familiarity with Fibre Channel protocol
- Identify products in the Cisco Data Center Nexus and Cisco MDS families
- Understanding of Cisco Enterprise Data Center architecture
- Understanding of server system design and architecture
- Familiarity with hypervisor technologies (such as VMware)

Course Outline:

Implementing Data Center Switching Protocols*

- Spanning Tree Protocol
- Port Channels Overview
- Virtual Port Channels Overview

Implementing First-Hop Redundancy Protocols*

- Hot Standby Router Protocol (HSRP) Overview
- Virtual Router Redundancy Protocol (VRRP) Overview
- First Hop Redundancy Protocol (FHRP) for IPv6

Implementing Routing in Data Center*

- Open Shortest Path First (OSPF) v2 and Open Settlement Protocol (OSP) v3
- Border Gateway Protocol

Implementing Multicast in Data Center*

- IP Multicast in Data Center Networks
- Internet Group Management Protocol (IGMP) and Multicast Listener Discovery (MLD)
- Multicast Distribution Trees and Routing Protocols
- IP Multicast on Cisco Nexus Switches

Implementing Data Center Overlay Protocols

- Cisco Overlay Transport Virtualization
- Virtual Extensible LAN

Implementing 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

Describing Cisco Application-Centric Infrastructure

- Cisco ACI Overview, Initialization, and Discovery
- Cisco ACI Management
- Cisco ACI Fabric Access Policies

Describing 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

Describing Packet Flow in Data Center Network*

- Data Center Traffic Flows
- Packet Flow in Cisco Nexus Switches
- Packet Flow in Cisco ACI Fabric

Describing Cisco Cloud Service and Deployment Models

- Cloud Architectures
- Cloud Deployment Models

Describing 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

Implementing Fibre Channel Fabric

- Fibre Channel Basics
- Virtual Storage Area Network (VSAN) Overview
- SAN Port Channels Overview
- Fibre Channel Domain Configuration Process

Implementing 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

Implementing FCoE Unified Fabric

- Fibre Channel over Ethernet
- Describing FCoE
- FCoE Topology Options
- FCoE Implementation

Implementing Storage Infrastructure Security*

- User Accounts and RBAC
- Authentication, Authorization, and Accounting
- Fibre Channel Port Security and Fabric Binding

Describing Data Center Storage Infrastructure Maintenance and Operations*

- Time Synchronization
- Software Installation and Upgrade
- Storage Infrastructure Monitoring

Describing Cisco UCS Server Form Factors*

- Cisco UCS B-Series Blade Servers
- Cisco UCS C-Series Rack Servers

Implementing Cisco Unified Computing Network Connectivity

- Cisco UCS Fabric Interconnect
- Cisco UCS B-Series Connectivity
- Cisco UCS C-Series Integration

Implementing Cisco Unified Computing Server Abstraction

- Identity Abstraction
- Service Profile Templates

Implementing Cisco Unified Computing SAN Connectivity

- iSCSI Overview
- Fibre Channel Overview
- Implement FCoE

Implementing 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

Describing Data Center Unified Computing Management, Maintenance, and Operations*

- Compute Configuration Management
- Software Updates
- Infrastructure Monitoring
- Cisco Intersight™

Implementing 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

Describing 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

Describing Cisco Data Center Automation and Orchestration Technologies*

- Power On Auto Provisioning
- Cisco Data Center Network Manager Overview
- Cisco UCS Director Fundamentals
- Cisco UCS PowerTool

* This section is self-study material that can be done at your own pace after the instructor-led portion of the course

Lab Outline

- Configure Overlay Transport Visualization (OTV)
- Configure Virtual Extensible LAN (VXLAN)
- Explore the Cisco ACI Fabric
- Implement Cisco ACI Access Policies and Out-of-Band Management
- Implement Cisco ACI Tenant Policies

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

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