

# Implementing and Operating Cisco Data Center Core Technologies (DCCOR) v1.0

Duration 5 Days

## COURSE DESCRIPTION

The Implementing and Operating Cisco Data Center Core Technologies (DCCOR) v1.0 course helps you prepare for the Cisco® CCNP® Data Center and CCIE® Data Center certifications and for advanced-level data center roles. In this course, 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.

This course will help you:

- Gain experience implementing, securing and automating network, compute, and storage infrastructure
- Gain knowledge and skills through Cisco's unique combination of lessons and hands-on practice using enterprise-grade Cisco learning technologies, data center equipment, and software
- Prepare for the Implementing and Operating Cisco Data Center Core Technologies (350-601 DCCOR) exam, that will be available beginning February 24, 2020
- Qualify for professional and expert-level job roles in the high-demand area of enterprise-class data center environments

## COURSE 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

**COURSE OUTLINE****Module 1: Implementing Data Center Switching Protocols\***

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

**Module 2: Implementing First-Hop Redundancy Protocols\***

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

**Module 3: Implementing Routing in Data Center\***

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

**Module 4: 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

**Module 5: Implementing Data Center Overlay Protocols**

- Cisco Overlay Transport Virtualization
- Virtual Extensible LAN

**Module 6: 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

**Module 7: Describing Cisco Application-Centric Infrastructure**

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

**Module 8: 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

**Module 9: Describing Packet Flow in Data Center Network**

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

**Module 10: Describing Cisco Cloud Service and Deployment Models**

- Cloud Architectures
- Cloud Deployment Models

**Module 11: Describing Data Center Network Infrastructure Management, Maintenance, and Operations\***

- Time Synchronization
- Network Configuration Management
- Software Updates
- Network Infrastructure Monitoring

**Module 12: Explaining Cisco Network Assurance Concepts**

- Need for Network Assurance
- Cisco Streaming Telemetry Overview

**Module 13: Implementing Fibre Channel Fabric**

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

**Module 14: 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

**Module 15: Implementing FCoE Unified Fabric**

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

**Module 16: Implementing Storage Infrastructure Security**

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

**Module 17: Describing Data Center Storage Infrastructure Maintenance and Operations**

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

**Module 18: Describing Cisco UCS Server Form Factors**

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

**Module 19: Implementing Cisco Unified Computing Network Connectivity**

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

**Module 20: Implementing Cisco Unified Computing Server Abstraction**

- Identity Abstraction
- Service Profile Templates

**Module 21: Implementing Cisco Unified Computing SAN Connectivity**

- iSCSI Overview
- Fibre Channel Overview
- Implement FCoE

**Module 22: Implementing Unified Computing Security**

- User Accounts and RBAC
- Options for Authentication
- Key Management

**Module 23: Introducing Cisco HyperFlex Systems\***

- Hyperconverged and Integrated Systems Overview
- Cisco HyperFlex Solution
- Cisco HyperFlex Scalability and Robustness

**Module 24: Describing Data Center Unified Computing Management, Maintenance, and Operations\***

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

**Module 25: 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

**Module 26: 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

**Module 27: 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

**PREREQUISITES**

To fully benefit from this course, you should have the following knowledge and skills:

- 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)

These Cisco courses are recommended to help you meet these prerequisites:

- Implementing and Administering Cisco Solutions (CCNA) v1.0

- Understanding Cisco Data Center Foundations (DCFNDU) v1.0
- Introducing Cisco Data Center Networking (DCICN) v6.2
- Introducing Cisco Data Center Technologies (DCICT) v6.2
- Interconnecting Cisco Networking Devices: Accelerated (CCNAX) or Interconnecting Cisco Networking Devices Part 1 (ICND1) and Interconnecting Cisco Networking Devices Part 2 (ICND2)

### WHO SHOULD ATTEND

This course is for wireless engineers who work in the following roles:

- 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

### WHAT TO EXPECT IN THE EXAM

This course will help you prepare to take the Implementing and Operating Cisco Data Center Core Technologies (350-601 DCCOR) exam. This exam tests your knowledge of implementing core data center technologies including network, compute, storage network, automation, and security.

After you pass 350-601 DCCOR:

- You earn the Cisco Certified Specialist - Data Center Core certification
- You satisfy the core requirement for CCNP Data Center and CCIE Data Center. To complete your CCNP Data Center certification, pass one of the data center concentration exams. To complete your CCIE Data Center certification, pass the CCIE Data Center v3.0 Lab Exam