Implementing and Operating Cisco Data Center Core Technologies

Duration: 180 Days Course Code: DCCOR Version: 1.4 Delivery Method: Elearning (Self-paced)

Overview:

The **Implementing and Operating Cisco Data Center Core Technologies** course teaches you to implement data center local area networks (LANs) and storage area networks (SANs) and compute using Cisco Nexus Switches, Cisco MDS Switches, Cisco Unified Computing System (UCS) B-Series Blade Servers, and Cisco UCS C-Series Rack Servers. You will also learn the essentials of automation and security in data centers. The training provides rich, hands-on experience with deploying, securing, operating, and maintaining Cisco data center networking, storage, and computing.The course aslo helps you to prepare for the Cisco CCNP Data Center and CCIE Data Center certifications and for advanced-level data center roles.

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

Qualify for professional and expert-level job roles in the high-demand area of enterprise-class data center environments

Prepare to take the **350-601 Implementing Cisco Data Center Core Technologies (DCCOR)** exam.

Please note that this course is a combination of Instructor-Led and Self-Paced Study - 5 days in the classroom and approx. 3 days of self study. The self-study content will be provided as part of the digital courseware that you receive at the beginning of the course and should be part of your preparation for the exam.

This course is worth 64 Continuing Education (CE) credits towards recertification.

e-Learning

Interactive self-paced content that provides flexibility in terms of pace, place and time to suit individuals and organisations. These resources also consist of online books, educational podcasts and vodcasts, and video-based learning.

Target Audience:

Individuals looking for the knowledge and skills required to implement, secure and automate network, compute and storage infrastructures.

Objectives:

- **After completing this course you should be able to:**
- Implement spanning tree protocol, port channels, and virtual port channels in the data center
- Implement first-hop redundancy protocols in the data center using Hot Standby Router Protocol (HSRP), Virtual Router Redundancy Protocol (VRRP), and Gateway Load Balancing Protocol (GLBP)
- Implement routing in the data center by using Open Shortest Path First (OSPF)v2, OSPFv3, and Border Gateway Protocol (BGP)
- Implement multicast functionality in the data center on the Cisco Nexus switches
- Implement overlay networks in the data center by using Virtual Extensible LAN (VXLAN)
- Implement network infrastructure security features on the Cisco Nexus switches
- Understand the architecture and features of high-performance
- Implement Fibre Channel fabric
- Implement storage infrastructure services in the data center such as distributed device aliases, zoning, N Port Virtualization (NPV), and Fibre Channel over IP (FCIP)
- Implement Fibre Channel over Ethernet (FCoE) unified fabric
- Implement storage infrastructure security features in the data center
- Describe storage infrastructure software updates and their impacts, and implement infrastructure monitoring
- Describe Cisco UCS Server form factors
- Implement Cisco UCS Fabric Interconnect and establish network connectivity for the Cisco UCS B-Series Blade Servers and Cisco UCS C-Series Rack Servers
- Implement Cisco Unified Computing Server abstraction
- Implement SAN connectivity for Cisco UCS
- Implement Cisco UCS security features in the data center

Ethernet fabrics

- Introduce high-level Cisco Application Centric Infrastructure (ACI) concepts and describe various fabric discovery parameters
- Describe Cisco ACI building blocks and Virtual Machine Manager (VMM) domain integration
- Describe packet flow for various traffic types (unicast, multicast, and broadcast) in the data center
- Describe Cisco Cloud Service and deployment models
- Describe Cisco ACI fabric setup
- Implement network configuration management, describe software updates and their impacts, and implement network infrastructure monitoring
- Describe Cisco network assurance concepts such as Cisco Streaming Telemetry
- Implement Cisco UCS configuration management, describe software updates and their impacts, and implement infrastructure monitoring
- Implement Cisco automation and scripting tools in the data center
- Describe and evaluate the Cisco integration with automation and orchestration software platforms, such as Ansible, Puppet, and Python
- Describe and evaluate Cisco data center automation and orchestration technologies

Prerequisites:

Attendees should meet the following prerequisites:

- 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)
- CCNA - Implementing and Administering Cisco Solutions
- DCFNDU - Understanding Cisco Data Center Foundations

Testing and Certification

Recommended as preparation for the following exam:

- 350-601 - **DCCOR -** Implementing Cisco Data Center Core Technologies

Passing this exam will provide you with the Cisco Certified Specialist - Data Center Core Certification and count towards the New CCNP Data Center Certification - To achieve the CCNP Data Center Certification you will also need a CCNP Data Center concentration.

Follow-on-Courses:

In order to achieve the new CCNP Data Center Certification you will also need to pass a concentration exam the available concentrations are:

- DCACI - Implementing Cisco Application Centric Infrastructure
- DCACIA - Implementing Cisco Application Centric Infrastructure - Advanced
- DCIT - Troubleshooting Cisco Data Center Infrastructure
- DCAUI - Implementing Automation for Cisco Data Center Solutions
- DCID - Designing Cisco Data Center Infrastructure

Content:

Implementing Data Center Switching Protocols

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

Implementing First-Hop Redundancy Protocols

- HSRP Overview
- VRRP Overview

Implementing Routing in Data Center

- OSPFv2 and OSPFv3
- Border Gateway Protocol

Implementing 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

Implementing Data Center Overlay Protocols

- Virtual Extensible LAN
- VXLAN Control Plane Options
- VXLAN Gateways and Routing

Implementing Network Infrastructure Security

- User Accounts and RBAC
- AAA and SSH on Cisco NX-OS
- Keychain Authentication
- First Hop Security
- DHCP Snooping
- IP Source Guard
- Dynamic ARP Inspection
- Unicast Reverse Path Forwarding
- MAC Security
- Control Plane Policing

High-Throughput Converged Fabrics

- Infiniband-to-Ethernet Transition
- Cisco Nexus 9000 Series Switches Portfolio

Describing Cisco Application-Centric Infrastructure

- Cisco ACI Overview, Initialization, and Discovery
- Cisco Nexus Dashboard Overview
- Cisco CLoud ACI Overview
- 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

Describing Cisco Cloud Service and Deployment Models

- Cloud Architectures
- Cloud Deployment Models

Cisco ACI Fabric Setup

- Cisco ACI Fabric Discovery

Describing Data Center Network Infrastructure Management

- 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
- VSAN Overview
- SAN Port Channels Overview
- Fibre Channel Domain Configuration Process

Implementing Storage Infrastructure Services

- Distributed Device Aliases
- Zoning
- NPIV and NPV
- Fibre Channel over IP
- NAS Concepts
- SAN Design Options

Implementing FCoE Unified Fabric

- Fibre Channel over Ethernet Overview
- 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

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

- Cisco Unified Computing Storage Connectivity Options
- iSCSI Overview
- Fibre Channel Overview
- Implement FCoE

Implementing Unified Computing Security

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

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
- Open NX-OS Linux Network Architecture
- Bash Shell and Guest Shell for Cisco NX-OS
- Cisco Nexus API
- Cisco NX-OS Model-Driven Programmability
- Cisco NX-SDK

Describing Cisco Integration with Automation and Orchestration Software Platforms

- Cisco and Ansible Integration Overview
- Python in Cisco NX-OS and Cisco UCS
- HashiCorp Terraform Overview
- Cisco Application-Centric Infrastructure Automation Options

Describing Cisco Data Center Automation and Orchestration Technologies

- Power On Auto Provisioning

(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 UCS Server Form Factors

- Cisco UCS B-Series Blade Servers
- Cisco UCS C-Series Rack Servers
- Cisco UCS X-Series Hardware
- Cisco UCS X-Series Deployment
- Cisco Intersight Managed Mode Overview

- Cisco Nexus Dashboard Overview
- Cisco Nexus Dashboard Fabric Controller Overview
- Cisco UCS PowerTool

Labs

- Discovery Lab 1: Configure VXLAN
- Discovery Lab 2: Explore the Cisco ACI Fabric
- Discovery Lab 3: Implement Cisco ACI Access Policies and Out-of-Band Management
- Discovery Lab 4: Implement Cisco ACI Tenant Policies
- Discovery Lab 5: Integrate Cisco ACI with VMware
- Discovery Lab 6: Validate Fabric Discovery
- Discovery Lab 7: Configure Fibre Channel
- Discovery Lab 8: Configure Device Aliases
- Discovery Lab 9: Configure Zoning
- Discovery Lab 10: Configure NPV
- Discovery Lab 11: Provision Cisco UCS Fabric Interconnect
- Discovery Lab 12: Configure Server and Uplink Ports
- Discovery Lab 13: Configure VLANs
- Discovery Lab 14: Configure Cisco UCS Server Profile Using Hardware Identities
- Discovery Lab 15: Configure Basic Identity Pools
- Discovery Lab 16: Configure a Cisco UCS Service Profile Using Pools
- Discovery Lab 17: Configure an iSCSI Service Profile
- Discovery Lab 18: Configure Cisco UCS Manager to Authenticate Users with Microsoft Active Directory
- Discovery Lab 19: Discovery Lab 1:Configure Cisco Nexus Switches with Ansible
- Discovery Lab 20: Program a Cisco Nexus Switch with Python

Further Information:

For More information, or to book your course, please call us on Head Office 01189 123456 / Northern Office 0113 242 5931

info@globalknowledge.co.uk

www.globalknowledge.com/en-gb/

Global Knowledge, Mulberry Business Park, Fishponds Road, Wokingham Berkshire RG41 2GY UK