DCID - DESIGNING CISCO DATA CENTER INFRASTRUCTURE V7.1

Course Code: 100489

Master design and deployment options focused on Cisco data center solutions and technologies across network, compute, virtualization, storage area networks, automation, and security.

The *DCID - Designing Cisco Data Center Infrastructure v7.1* course helps you master design and deployment options focused on Cisco data center solutions and technologies across network, compute, virtualization, storage area networks, automation, and security.

This course is eligible for 40 Continuing Education Credits (ILT & ELT Modality).

What You'll Learn

You will learn design practices for the Cisco Unified Computing System (Cisco UCS) solution based on Cisco UCS B-Series and C-Series servers, Cisco UCS Manager, and Cisco Unified Fabric. You will also gain design experience with network management technologies including Cisco UCS Manager, Cisco Data Center Network Manager (DCNM), and Cisco UCS Director. You can expect theoretical content as well as design-oriented case studies in the form of activities.

This course helps you prepare to take the Designing Cisco Data Center Infrastructure (300-610 DCID) exam, which leads to the new CCNP Data Center and Cisco Certified Specialist - Data Center Design certifications.

After taking this course, you should be able to:

- Describe the Layer 2 and Layer 3 forwarding options and protocols used in a data center
- Describe the rack design options, traffic patterns, and data center switching layer access, aggregation, and core
- Describe the Cisco Overlay Transport Virtualization (OTV) technology that is used to interconnect data centers
- Describe Locator/ID separation protocol
- Design a solution that uses Virtual Extensible LAN (VXLAN) for traffic forwarding
- Describe hardware redundancy options; how to virtualize the network, compute, and storage functions; and virtual networking in the data center

- Describe solutions that use fabric extenders and compare Cisco Adapter Fabric Extender (FEX) with single root input/output virtualization (SR-IOV)
- Describe security threats and solutions in the data center
- Describe advanced data center security technologies and best practices
- Describe device management and orchestration in the data center
- Describe the storage options for compute function and different Redundant Array of Independent Disks (RAID) levels from a high-availability and performance perspective
- Describe Fibre Channel concepts, topologies, architecture, and industry terms
- Describe Fibre Channel over Ethernet (FCoE)
- Describe security options in the storage network
- Describe management and automation options for storage networking infrastructure
- Describe Cisco UCS servers and use cases for various Cisco UCS platforms
- Explain the connectivity options for fabric interconnects for southbound and northbound connections
- Describe the hyperconverged solution and integrated systems
- Describe the systemwide parameters for setting up a Cisco UCS domain
- Describe role-based access control (RBAC) and integration with directory servers to control access rights on Cisco UCS Manager
- Describe the pools that may be used in service profiles or service profile templates on Cisco UCS Manager
- Describe the different policies in the service profile
- Describe the Ethernet and Fibre Channel interface policies and additional network technologies
- Describe the advantages of templates and the difference between initial and updated templates
- Describe data center automation tools

Who Needs to Attend

IT professionals with five to eight years of experience in these roles:

- Data center engineers
- Network designers
- Network administrators
- Network engineers
- Systems engineers
- Consulting systems engineers
- Technical solutions architects
- Server administrators
- Network managers
- Cisco integrators or partners

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CLASSROOM LIVE	$5,395 CAD	5 Day

Classroom Live Outline

- Describing Basic Data Center Security
  - Threat Mitigation
  - Attack and Countermeasure Examples
  - Secure the Management Plane
  - Protect the Control Plane
  - RBAC and Authentication, Authorization, and Accounting (AAA)
- 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 High Availability on Layer 2
  - Overview of Layer 2 High-Availability Mechanisms
  - Virtual Port Channels
  - Cisco FabricPath
  - 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
    - Location Identifier 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
    - Multiprotocol Border Gateway Protocol (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 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 Internet Small Computer System Interface (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
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- Describing Storage Security
    - Common SAN Security Features
    - Zones
    - SAN Security Enhancements
    - Cryptography in SAN
- Describing SAN Management and Orchestration
    - Cisco DCNM for SAN
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    - 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
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    - Two-Factor Authentication
- Describing Pools for Service Profiles
    - Global and Local Pools
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    - World Wide Name (WWN) Pools
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Classroom Live Labs

- 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
- Design Management and Orchestration in a Cisco UCS Solution
- Design a Fibre Channel Network
- Design and Integrate an FCoE Solution
- Design a Secure SAN
- Design Cisco UCS Director for Storage Networking
- Design a Cisco UCS Domain and Fabric Interconnect Cabling
- Design a Cisco UCS C-Series Server Implementation
- Design Cisco UCS Fabric Interconnect Network and Storage Connectivity
- Design Systemwide Parameters in a Cisco UCS Solution
- Design an LDAP Integration with a Cisco UCS Domain
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ON-DEMAND	$1,950 CAD

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PRIVATE GROUP TRAINING	5 Day

Visit us at www.globalknowledge.com or call us at 1-866-716-6688.

Date created: 8/30/2025 9:48:24 PM