

Designing Cisco Data Center Infrastructure (DCID)

Duration: 5 Days

Prerequisites:

Before taking this training, you should be able to:

- Implement data center networking [Local Area Network (LAN) and Storage Area Network (SAN)]
- Describe data center storage
- Implement data center virtualization
- Implement Cisco Unified Computing System (Cisco UCS)
- Implement data center automation and orchestration with the focus on Cisco Application Centric Infrastructure (ACI) and Cisco UCS Director
- Describe products in the Cisco Data Center Nexus and Multilayer Director Switch (MDS) families

To fully benefit from this training, you should have completed the following trainings or obtained the equivalent level of knowledge:

- Understanding Cisco Data Center Foundations (DCFNDU)
- Implementing and Administering Cisco Networking Technologies (CCNA®)
- Implementing Cisco Data Center Core Technologies (DCCOR)

Course Description:

The Designing Cisco Data Center Infrastructure (DCID) training 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. 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 training earns you 40 Continuing Education (CE) credits towards recertification.

Course Objectives:

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 hyper converged solution and integrated systems

- Describe the system wide 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

Intended Audience:

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

Course Outlines:

- Section 1: Describing High Availability on Layer 2
- Section 2: Designing Layer 3 Connectivity
- Section 3: Designing Data Center Topologies
- Section 4: Designing Data Center Interconnects with Cisco OTV
- Section 5: Describing Locator/ID Separation Protocol
- Section 6: Describing VXLAN Overlay Networks
- Section 7: Describing Hardware and Device Virtualization
- Section 8: Describing Cisco FEX Options
- Section 9: Describing Basic Data Center Security
- Section 10: Describing Advanced Data Center Security
- Section 11: Describing Management and Orchestration

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COURSE OUTLINE

- Section 12: Describing Storage and RAID Options
- Section 13: Describing Fibre Channel Concepts
- Section 14: Describing Fibre Channel Topologies
- Section 15: Describing FCoE
- Section 16: Describing Storage Security
- Section 17: Describing SAN Management and Orchestration
- Section 18: Describing Cisco UCS Servers and Use Cases
- Section 19: Describing Fabric Interconnect Connectivity
- Section 20: Describing Hyperconverged and Integrated Systems
- Section 21: Describing Cisco UCS Manager Systemwide Parameters
- Section 22: Describing Cisco UCS RBAC
- Section 23: Describing Pools for Service Profiles
- Section 24: Describing Policies for Service Profiles
- Section 25: Describing Network-Specific Adapters and Policies
- Section 26: Describing Templates in Cisco UCS Manager
- Section 27: Designing Data Center Automation.

Lab Outline

- Module 1: High Availability on Layer 2
- Module 2: Designing Layer 3 Connectivity
- Module 3: Designing Data Center Topologies
- Module 4: Locator/ID Separation Protocol
- Module 5: VXLAN Overlay Networks
- Module 6: Hardware and Device Virtualization
- Module 7: Cisco FEX Options
- Module 8: Basic Data Center Security
- Module 9: Advanced Data Center Security
- Module 10: Management and Orchestration
- Module 11: Storage and RAID Options
- Module 12: Fibre Channel Topologies
- Module 13: Fibre Channel Topologies
- Module 14: FCoE
- Module 15: Storage Security

- Module 16: SAN Management and Orchestration
- Module 17: Cisco UCS Servers and Use Cases
- Module 18: Fabric Interconnect Connectivity
- Module 19: Hyperconverged and Integrated Systems
- Module 20: Cisco UCS Manager Systemwide Parameters
- Module 21: Cisco UCS RBAC
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- Module 24: Network-Specific Adapters and Policies
- Module 25: Templates in Cisco UCS Manager
- Module 26: Designing Data Center Automation

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