Designing Cisco Data Center Infrastructure (DCID)

Description

The **Designing Cisco Data Center Infrastructure (DCID)** training helps you learn 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 prepares you for 300-610 DCID v1.1 exam. If passed, you earn the Cisco Certified Specialist – Data Center Design certification and satisfy the concentration exam requirement for the Cisco Certified Network Professional (CCNP) Data Center certification. This training also earns you 40 Continuing Education (CE) credits toward recertification.

How you'll benefit

This training will help you:

- Make design choices for optimal data center infrastructure performance, virtualization, security, and automation
- Master the practical and theoretical knowledge necessary to design a scalable, reliable, and intelligent data center based on Cisco technologies
- Qualify for professional-level job roles in the high-demand area of enterprise-class data center environments
- Prepare for the 300-610 DCID v1.1 exam
- Earn 40 CE credits toward recertification

Who should enroll

- 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

Technology areas

- Data Center

Objectives

- 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

Prerequisites

There are no prerequisites for this training. However, the knowledge and skills you are recommended to have before attending this training are:

- 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

These skills can be found in the following Cisco Learning Offerings:

- [Implementing and Administering Cisco Solutions (CCNA)](#)
- [Understanding Cisco Data Center Foundations (DCFNDU)](#)
- [Implementing Cisco Data Center Core Technologies (DCCOR)](#)

Outline

- Describing High Availability on Layer 2
- Designing Layer 3 Connectivity
- Designing Data Center Topologies
- Designing Data Center Interconnects with Cisco OTV
- Describing Locator/ID Separation Protocol
- Describing VXLAN Overlay Networks
- Describing Hardware and Device Virtualization
- Describing Cisco FEX Options
- Describing Basic Data Center Security
- Describing Advanced Data Center Security
- Describing Management and Orchestration
- Describing Storage and RAID Options
- Describing Fibre Channel Concepts
- Describing Fibre Channel Topologies
- Describing FCoE
- Describing Storage Security
- Describing SAN Management and Orchestration
- Describing Cisco UCS Servers and Use Cases
- Describing Fabric Interconnect Connectivity
- Describing Hyperconverged and Integrated Systems
- Describing Cisco UCS Manager Systemwide Parameters
- Describing Cisco UCS RBAC
- Describing Pools for Service Profiles
- Describing Policies for Service Profiles
- Describing Network-Specific Adapters and Policies
- Describing Templates in Cisco UCS Manager
- Designing Data Center Automation

Lab Outline

- High Availability on Layer 2
- Designing Layer 3 Connectivity
- Designing Data Center Topologies

- Locator/ID Separation Protocol
- VXLAN Overlay Networks
- Hardware and Device Virtualization
- Cisco FEX Options
- Basic Data Center Security
- Advanced Data Center Security
- Management and Orchestration
- Storage and RAID Options
- Fibre Channel Topologies
- Fibre Channel Topologies
- FCoE
- Storage Security
- SAN Management and Orchestration
- Cisco UCS Servers and Use Cases
- Fabric Interconnect Connectivity
- Hyperconverged and Integrated Systems
- Cisco UCS Manager Systemwide Parameters
- Cisco UCS RBAC
- Pools for Service Profiles
- Policies for Service Profiles
- Network-Specific Adapters and Policies
- Templates in Cisco UCS Manager
- Designing Data Center Automation

What to expect on the exam

Designing Cisco Data Center Infrastructure (300-610 DCID) v1.1 is a 90-minute exam associated with the Cisco Certified Specialist – Data Center Design certification and satisfies the concentration exam requirement for the CCNP Data Center certification.

This exam tests your knowledge of data center infrastructure design, including:

- Network
- Compute
- Storage network
- Automation

Links

- Cisco U. Learning Path
- Cisco Learning Network Store
- Cisco Learning Locator