DESIGNING CISCO DATA CENTER INFRASTRUCTURE (DCID) V6.2

Course Code: 4870

Focus on data center infrastructure design based on Cisco data center solutions and technologies and prepare for the CCNP Data Center certification.

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The DCID - Designing Cisco Data Center Infrastructure v6.2 course focuses on data center infrastructure design based on Cisco solutions and technologies. The course includes theoretical content as well as design-oriented case studies in the form of activities. The course is designed to help students prepare for the Cisco CCNP Data Center certification and for professional-level data center roles.

The course includes information on designing data centers with Cisco components and technologies. It covers network designs with virtualization, Layer 2 and Layer 3 technologies and routing protocols, and data center interconnect design options. Also covered are device virtualization technologies such as virtual data centers and network function virtualization with virtual appliances, including virtual switches, virtual routers, and virtual firewalls. Storage and SAN design is also covered with explanations of Fibre Channel networks and Cisco Unified Fabric. Design practices for the Cisco Unified Computing System (UCS) solution based on Cisco UCS B-Series and C-Series servers, Cisco UCS Manager, and Cisco Unified Fabric are covered as well. You will review Network management technologies including UCS Manager, Cisco Prime Data Center Network Manager (DCNM), and UCS Director.

You'll master the professional-level skills and technologies needed to design data center infrastructure based on Cisco and other industry pervasive technologies.

What You'll Learn

- Describe the Layer 2 forwarding options and protocols used in a data center
- Describe the 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 OTV technology that is used to interconnect data centers
- Design a solution that uses LISP for traffic forwarding
- Describe the hardware redundancy options and virtualize the network, compute, and storage
- Discuss virtual networking in the data center
- Describe solutions using fabric extenders and compare Adapter FEX with VM-FEX
- Describe the Cisco Nexus 1000V solution to extend the hypervisor functionality
- Describe security threats and solutions in the data center
- Describe advanced data center security technologies and best practices
- Describe virtual appliances that are deployed in a data center network
- Describe device management and orchestration in the data center
- Design a data center storage network
- Describe the storage options for the compute and the different RAID levels from a HA and performance perspective
- Describe Fibre Channel concepts and architecture
- Describe Fibre Channel topologies and industry terms
- Describe how Ethernet and Fibre Channel networks converge
- Describe security options in the storage network
- Describe management and automation options for the storage networking infrastructure
- Describe Cisco UCS servers and use cases for various Cisco UCS platforms (B-Series and C-Series)
- Explain the connectivity options in the Fabric Interconnects for southbound and northbound connections
- Describe port personalities and over-subscription models
- Distinguish between the EHV and switching mode, and between the NPV and Fibre Channel switching mode
- Describe split brain and partition in time issue with the Fabric Interconnects for HA.
- Describe the hyper convergence solution and how it integrates systems based on different storage vendors
- Compare storage vendors and evaluate the advantages for each stacked solution
- Describe the different management options for Cisco UCS
- Design the management solution in HA mode and describe integration with the Cisco UCS domain
- Describe a Cisco UCS design using different applications and scenarios
- Describe the system-wide parameters to setup a Cisco UCS domain including

monitoring, QoS, and organizations to build up a management hierarchy in the Cisco UCS domain
- Describe 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 design and best practices for naming conventions
- Describe the different policies you may set in the service profile to achieve and fulfill customer or application requirements
- Describe the Ethernet and Fibre Channel interface policies and additional network technologies
- Describe how to use templates to work more efficiently in Cisco UCS Manager

Who Needs to Attend

- Network Designer
- Network Administrator
- Network Engineer
- Systems Engineer
- Consulting Systems Engineer
- Technical Solutions Architect
- Cisco Integrators/Partners

Prerequisites

It is recommended, but not required, to have the following skills and knowledge before attending this course:

Data center networking concepts
Data center storage concepts
Data center virtualization
Cisco Unified Computing System (Cisco UCS)
Data center automation and orchestration including Cisco ACI and Cisco UCS Director
Cisco Data Center Nexus and Cisco MDS product families
Network fundamentals and building simple LANs including switching and routing

To fully benefit from this course, students attending this training should have completed the following courses or obtained the equivalent level of knowledge:

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CLASSROOM LIVE	$4,644 CAD	5 days

Classroom Live Outline

Module 1: Data Center Network Connectivity Design

- Lesson 1: Describing High Availability on Layer 2
- Lesson 2: Designing Layer 3 Connectivity
- Lesson 3: Designing Data Center Topologies
- Lesson 4: Designing Data Center Interconnects with Cisco OTV
- Lesson 5: Designing a LISP Solution

Module 2: Data Center Infrastructure Design

- Lesson 1: Describing Hardware and Device Virtualization
- Lesson 2: Describing FEX Options
- Lesson 3: Describing Virtual Networking
- Lesson 4: Describing Basic Data Center Security
- Lesson 5: Describing Advanced Data Center Security
- Lesson 6: Describing Virtual Appliances
- Lesson 7: Describing Management and Orchestration

Module 3: Data Center Storage Network Design

- Lesson 1: Describing Storage and RAID Options
- Lesson 2: Describing Fibre Channel Concepts
- Lesson 3: Describing Fibre Channel Topologies
- Lesson 4: Describing FCoE
- Lesson 5: Describing Storage Security
- Lesson 6: Describing SAN Management and Orchestration

Module 4: Data Center Compute Connectivity Design

- Lesson 1: Describing Cisco UCS Servers and Use Cases
- Lesson 2: Describing Fabric Interconnect Connectivity
- Lesson 3: Describing Hyperconverged and Integrated Systems
- Lesson 4: Describing Management Systems

- Lesson 5: Describing Hadoop, SAP Hana, and IoT on Cisco UCS

Module 5: Data Center Compute Resource Parameters Design

- Lesson 1: Describing Cisco UCS Manager System-Wide Parameters
- Lesson 2: Describing Cisco UCS RBAC
- Lesson 3: Describing Pools for Service Profiles
- Lesson 4: Describing Policies for Service Profiles
- Lesson 5: Describing Network-Specific Adapters and Policies
- Lesson 6: Describing Templates in Cisco UCS Manager

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ON-DEMAND	$1,950 CAD

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