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Designing Cisco Data Center Infrastructure

DURATION: 5 DAYS **COURSE CODE: DCID** **FORMAT: LIVE/VIRTUAL**

COURSE DESCRIPTION

The Designing Cisco Data Center Infrastructure (DCID) v7.0 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. 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 exam, Designing Cisco Data Center Infrastructure (300-610 DCID), which leads to the new CCNP® Data Center and the Cisco Certified Specialist - Data Center Design certifications.

This exam certifies your knowledge of data center infrastructure design including network, compute, storage network, and automation.

After you pass 300-610 DCID:

- You earn the Cisco Certified Specialist - Data Center Design certification

- You will have satisfied the concentration exam requirement for the new CCNP Data Center. To complete your CCNP Data Center certification, pass the Implementing and Operating Cisco Data Center Core Technologies (300-601 DCCOR) exam or its equivalent

This course 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

PREREQUISITES

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 course, you should have completed the following courses 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)

WHO SHOULD 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

LEARNING 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 hyperconverged 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

COURSE OUTLINE

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DISCOVERY LABS

1: Design Virtual Port Channels

2: Design First Hop Redundancy Protocol (FHRP)

3: Design Routing Protocols

4: Design Data Center Topology for a Customer

5: Design Data Center Interconnect Using Cisco OTV

6: Design Your VXLAN Network

7: Create a Cisco FEX Design

8: Design Management and Orchestration in a Cisco UCS Solution

9: Design a Fibre Channel Network

10: Design and Integrate an FCoE Solution

11: Design a Secure SAN

12: Design Cisco UCS Director for Storage Networking

13: Design a Cisco UCS Domain and Fabric Interconnect Cabling

14: Design a Cisco UCS C-Series Server Implementation

15: Design Cisco UCS Fabric Interconnect Network and Storage Connectivity

16: Design System-wide Parameters in a Cisco UCS Solution

17: Design an LDAP Integration with a Cisco UCS Domain

18: Design Pools for Service Profiles in a Cisco UCS Solution

19: Design Network-Specific Adapters and Policies in a Cisco UCS Solution