



Data Center Unified Computing Design v5 (DCUCD)

Course ID#: 1575-933-ZZ-W

Hours: 28

Course Content

Course Description:

The Designing Cisco Data Center Unified Computing (DCUCD) v5.0 course enables engineers to choose and design scalable, reliable, and intelligent data center unified computing and virtualization solutions, based on the Cisco Unified Computing System (UCS) product portfolio as a centerpiece, integrated with contemporary virtualization solutions (for example, VMware vSphere, VMware View, Microsoft Hyper-V, Citrix XenServer, Citrix XenDesktop, Red Hat Kernel-Based Virtual Machine [KVM], and so on), operating systems (for example, Microsoft Windows and Linux), and applications (database, collaboration, and so on).

The course describes the data center unified computing and virtualization solutions based on the Cisco data center unified computing product portfolio, explains how to evaluate existing data center computing solutions and determine the requirements, and design Cisco data center unified computing solutions.

Prerequisites:

The knowledge and skills recommended are as follows:

- CCNA Data Center certification
- Knowledge that is covered in the Cisco Nexus product family courses
- Knowledge that is covered in the Designing Cisco Data Center Unified Fabric (DCUFD) course
- Knowledge that is covered in the Cisco MDS product family courses
- Knowledge of server and desktop virtualization (for example, VMware vSphere, Microsoft Hyper-V, VMware View, Citrix XenDesktop, and so on)
- Operating system administration familiarity (for example, Linux and Windows)

Topics:

Module 1: Cisco Data Center Solution Architecture and Components

Lesson 1: Identifying Data Center Solutions

- Recognize the elements of data center computing solutions
- Identify consolidation as a relevant data center trend
- Identify virtualization as a relevant data center trend

- Evaluate the business challenges of the contemporary data center solutions
- Evaluate the environmental challenges of the contemporary data center solutions
- Describe the technical challenges of the contemporary data center solutions



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Lesson 2: Identifying Data Center Applications

- Describe common data center applications
- Describe server virtualization characteristics
- Describe desktop virtualization characteristics

Lesson 3: Identifying Cloud Computing

- Evaluate the cloud computing solution, terms, and general characteristics
- Recognize cloud computing deployment models
- Compare cloud computing service delivery categories, the responsibilities demarcation, and their applicability
- Recognize the aspects of cloud computing services and solutions

Lesson 4: Identifying Cisco Data Center Architecture and Components

- Describe the Cisco Data Center architectural framework
- Describe the Cisco Data Center architectural framework unified fabric component
- Describe the Cisco Data Center network equipment
- Describe the Cisco Data Center architectural framework compute component
- Describe Cisco Validated Designs

Module 2: Assess Data Center Computing Requirements

Lesson 1: Defining a Cisco Unified Computing System Solution Design

- Describe the design process for the Cisco UCS solution
- Evaluate the design process phases for the Cisco UCS solution
- Assess the deliverables of the Cisco UCS solution

Lesson 2: Analyzing Computing Solutions Characteristics

- Identify performance characteristics
- Assess server virtualization performance characteristics
- Assess desktop virtualization performance characteristics
- Assess small VMware vSphere deployment requirements
- Assess small Hyper-V deployment requirements
- Assess VMware VDI deployment requirements

Lesson 3: Employing Data Center Analysis Tools

- Evaluate reconnaissance and analysis tools
- Discuss general steps of running an analysis with the selected tool
- Perform existing computing solution analysis with VMware Capacity Planner
- Perform VMware vSphere analysis with VMware CapacityIQ
- Perform existing computing solution analysis with Microsoft Assessment and Planning Toolkit
- Evaluate the Cisco UCS TCO/ROI Advisor tool

Module 3: Size Cisco Unified Computing Solutions

Lesson 1: Sizing the Cisco UCS C-Series Server Solution

- Recognize general steps for Cisco UCS C-Series server selection
- Identify the requirements of Cisco UCS C-Series integration with Cisco UCS Manager
- Select proper Cisco UCS C-Series server hardware based on the requirements for a given small VMware vSphere environment
- Select proper Cisco UCS C-Series server hardware based on the requirements for a given small Hyper-V vSphere environment



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Lesson 2: Sizing the Cisco UCS B-Series Server Solution

- Recognize the general Cisco UCS B-Series server hardware sizing aspects
- Describe an example of gathering requirements for a given VMware View desktop virtualization solution

Lesson 3: Planning Unified Computing Deployment

- Recognize the Cisco Power Calculator tool
- Propose a physical deployment plan

Module 4: Design Cisco Unified Computing Solutions

Lesson 1: Designing the Unified Computing Network

- Recognize the network operational modes of the Cisco UCS 6200 Series Fabric
- Interconnects
- Understand Cisco UCS network connectivity
- Recognize Layer 2 disjoint domain concepts and implications
- Define the network high-availability mechanisms for Cisco UCS network connectivity
- Define the VM-FEX requirements for the Cisco UCS B- and C-Series

Lesson 2: Designing Unified Computing Storage

- Recognize SAN operational modes of Cisco UCS 6200 Series Fabric Interconnects
- Understand SAN connectivity design aspects
- Define the SAN high-availability mechanisms for Cisco UCS 6200 Series Fabric
- Interconnects

Lesson 3: Designing the Virtual Access Layer

- Identify and describe the Cisco Nexus 1000V
- Identify and describe Cisco Nexus 1000V integration with VMware vCenter

Module 5: Design Cisco Unified Computing Solutions Server Deployment

Lesson 1: Designing Cisco UCS Server Deployment

- Identify the aspects of the server deployment
- Define the common naming convention for given solutions
- Define the UUID addressing for given solutions
- Define the MAC addressing for given solutions
- Define the WWN addressing for given solutions
- Define the common policies for hosts of a given solution

Lesson 2: Designing Unified Computing Management

- Define the Cisco UCS management access
- Define the organizational hierarchy within Cisco UCS configuration
- Define the remote management connectivity characteristics

Module 6: Cisco Unified Computing Solution Applications

Lesson 1: Designing Cisco Unified Communications on Cisco UCS

- Recognize Cisco Unified Communications solutions
- Assess Cisco Unified Communications characteristics
- Describe the two options for deploying Cisco Unified Communications on Cisco UCS

Lesson 2: Designing Distributed Computing on Cisco UCS (topics on page 4)



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- Recognize distributed computing solutions and applications
- Understand general Hadoop architecture
- Assess general Hadoop performance characteristics
- Design Cisco UCS for the Greenplum MR Hadoop solution