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**Learning Style: Virtual Classroom**

**Provider: Cisco**

**Difficulty: Advanced**

**Course Duration: 5 Days**

## **Data Center Unified Computing Design (CS-DCUCD)**



## About this Course:

This course helps engineers from related disciplines to select and craft a scalable, authentic, and smart data center unified computing and virtualization solutions in accord with the Cisco Unified Computing System (UCS) product portfolio.

The Cisco Unified Computing System (UCS) product portfolio as a focal point merges with modernized virtualization solutions such as VMware vSphere, VMware View, Microsoft Hyper-V, Citrix XenServer, Citrix XenDesktop, Red hat Kernel-based Virtual Machine [KVM], etc.; operating systems such as, Microsoft Windows and Linux; applications like database, collaboration; and more.

This course is also a component of the below stated Boot Camps:

CS-CCNP-DC v6.0 CS-CCNP Data Center v6.0: Cisco Certified Network Professional (CCNP) Data Center Boot Camp v6.0 (CS-CCNP-DC v6.0).

A professional Cisco Systems Data Center Technician earns an average of **\$77,670** per year.

## Course Objectives

After the course completion, students should be able to:

- Analyze the data center solution design and design process according to modern data center difficulties faced, data center solution architecture, and its constituents
- Evaluate the needs and performance essentials related to the data center computing solutions
- Make use of the design steps to scale a Cisco UCS solution for the data center requirements in hand
- Assess and create a Cisco UCS solution LAN, SAN, and virtual access layer connectivity
- Identify and craft a Cisco UCS solution server deployment
- Locate the Cisco UCS solution for Unified Communications and Hadoop distributed computing application along with their specifications, and Cisco UCS choices that align well with the needs of the application

## Audience

- The primary audience includes the data center designers, data center administrators, and system engineers

- The secondary-level audience are entitled with designations such as data center engineers and managers

## **Prerequisites**

- Recommended pursuance of the Cisco Certified Network Associate Data Center (CCNA Data Center) certification
- A sound knowledge acquired from the Cisco Nexus product family courses
- A comprehensive learning provided by a Designing Cisco Data Center Unified Fabric (DCUFD) course
- A sound knowledge acquired from the Cisco MDS product family courses
- Learning acquired from the server and desktop virtualization such as VMware vSphere, Microsoft Hyper-V, VMware View, Citrix XenDesktop, and more
- Familiarity with the operating system administration like Linux and Windows

## **Recommended Prerequisite Courses**

- CS-CCNA-Wireless Cisco Certified Network Associate (CCNA) Wireless Training Boot Camp (CS-CCNA-Wireless)
- VMware vSphere: Install, Configure, Manage v6.x (VMW-ICM6)

## **Course Outline:**

### **Module 1: Cisco Data Center Solution Architecture and Components**

- Identifying Data Center Solution
- Recognize elements of data center computing solutions
- Understand the consolidation data center trend
- Understand the virtualization data center trend
- Evaluate business challenges of the contemporary data center solutions
- Evaluate environmental challenges of the contemporary data center solutions
- Evaluate technical challenges of the contemporary data center solutions
- Identifying Data Center Applications
- Recognize data center application examples
- Recognize server virtualization characteristics
- Recognize desktop virtualization characteristics
- Identifying Cloud Computing

- The lesson includes these topics or topic (enabling) objectives:
- Evaluate cloud computing solutions
- Recognize cloud computing deployment models
- Compare cloud computing service categories
- Understand cloud computing aspects
- Identifying Cisco Data Center Architecture and Components
- Evaluate the Cisco Data Center architectural framework
- Evaluate the Cisco Data Center architectural framework Unified Fabric
- Recognize the Cisco Data Center Unified Fabric equipment
- Evaluate the Cisco Data Center architectural framework compute component
- Recognize Cisco Validated Designs

## **Module 2: Assess Data Center Computing Requirements**

- Defining a Cisco Unified Computing System Solution Design
- Describe the design process for the Cisco Unified Computing solution
- Evaluate design process phases
- Recognize the deliverables for the Cisco Unified Computing solution
- Analyzing Computing Solutions Characteristics
- Identify performance characteristics
- Assess server virtualization performance characteristics
- Assess desktop virtualization performance characteristics
- Assess requirements for small VMware vSphere deployment example
- Assess requirements for small Microsoft Hyper-V deployment example
- Assess requirements for VMware View VDI deployment example
- Employing Data Center Analysis Tools
- Evaluate reconnaissance and analysis tools
- Perform existing computing solution analysis with VMware Capacity Planner
- Perform VMware vSphere analysis with VMware Capacity IQ
- Perform existing computing solution analysis with MAP toolkit
- Perform TCO/ROI analysis with Cisco UCS TCO/ROI Advisor

## **Module 3: Size Cisco Unified Computing Solutions**

- Sizing Cisco UCS C-Series Server Solution
- Recognize general Cisco UCS C-series server selection steps
- Select proper hardware components to integrate UCS C-series server with 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 Microsoft Hyper-V environment
- Sizing Cisco UCS B-Series Server Solution
- Recognize general Cisco UCS B-series server selection steps
- Select proper Cisco UCS servers based on the requirements for a given desktop virtualization solution
- Planning Unified Computing Deployment
- Recognize Power Calculator tool
- Propose physical deployment plan

## **Module 4: Design Cisco Unified Computing Solutions**

- Designing Unified Computing Network
- Recognize network operational modes of the Cisco UCS 6200 Series Fabric Interconnects
- Recognize Layer 2 disjoint domains
- Define the network high availability mechanisms for Cisco UCS 6200 Series Fabric Interconnects
- Define the VM-FEX requirements for Cisco UCS
- Designing Unified Computing Storage
- Recognize SAN operational modes of Cisco UCS 6200 Series Fabric Interconnects
- Understand SAN Connectivity
- Define the SAN high availability mechanisms for Cisco UCS 6200 Series Fabric Interconnects
- Recognize SAN Scalability Options
- Designing 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**

- Designing Cisco UCS Server Deployment
- Identify server deployment aspects
- 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 solutions
- 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**

- Unified Communications on Cisco UCS
  - Recognize Unified Communications application
  - Assess Unified Communications performance characteristics
  - Select Cisco UCS hardware for Unified Communications solution
- Distributed Computing on Cisco UCS
  - Recognize distributed computing applications
  - Understand Hadoop architecture
  - Assess Hadoop performance characteristics
  - Design Cisco UCS for Greenplum MR Hadoop solution
  - Appendixes: Creating Cisco UCS Solution BOM
- Creating Cisco UCS Solution BOM
  - Create Cisco UCS C-series server solution BoM with Online Configurator
  - Create Cisco UCS C-series server solution BoM with Netformx

DesignXpert

- Create Cisco UCS B-series server solution BoM with Netformx DesignXpert

## Labs

- Lab 2-1: Analyze the Existing Computing Solution
- Lab 3-1: Design Cisco UCS C-series Solution
- Lab 3-2: Design Cisco UCS B-series Solution
- Lab 3-3: Plan the Physical Deployment
- Lab 4-1: Design Microsoft Hyper-V Deployment on Cisco UCS
- Lab 4-2: Design VMware vSphere Deployment and Integration with Cisco UCS
- Lab 5-1: Design VMware vSphere Deployment on Cisco UCS and Cisco Nexus 1000V

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