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Learning Style: Virtual Classroom

Technology: 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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