Introducing Cisco Data Center Technologies (DCICT)

Course ID#: 1575-902-ZZ-W

Hours: 35

Course Content

Course Description:

DCICN and DCICT will introduce the students to the Cisco technologies that are deployed in the Data Center: unified computing, unified fabric, and network services. The introductory level of knowledge that is taught in these courses is targeted for individuals who can perform only the more basic configuration tasks. The course labs will focus on verifying configurations, with selected exercises involving making configuration changes or designing new topologies.

Prerequisites:

Introducing Cisco Data Centers Networking (DCICN) v1.0 or equivalent knowledge

Topics:

Module 1: Cisco Data Center Network Services

Lesson 1: Examining Functional Layers of the Data Center

- Traditional Isolated LAN and SAN Networks
- LAN Core, Aggregation, and Access Layers
- Core and Access Layers in a LAN Collapsed Core Design
- Core and Edge Layers in a Data Center SAN Design
- Collapsed-Core SAN Design

Lesson 2: Reviewing the Cisco Nexus Product Family

- Cisco Nexus Data Center Product Portfolio
- Cisco Nexus 7000 Series Chassis Options
- Cisco Nexus 7000 Series Supervisor Module
- Cisco Nexus 7000 Series Licensing Options
- Cisco Nexus 7000 Series Fabric Modules
- Cisco Nexus 7000 Series I/O Modules
- Cisco Nexus 7000 Series Power Supply Options
- Cisco Nexus 5000 Series Chassis Options
- Cisco Nexus 5010 and 5020 Switches Features
- Cisco Nexus 5010 and 5020 Expansion Modules
- Cisco Nexus 5500 Platform Switches Features
- Cisco Nexus 5500 Platform Switches Expansion Modules
- Cisco Nexus 5000 Switch Series Software Licensing
- Cisco Nexus 2000 Series Fabric Extenders Function in the Cisco Data Center
- Cisco Nexus 2000 Series Fabric Extenders Features

Lesson 3: Reviewing the Cisco MDS Product Family

- Cisco MDS 9000 Series Product Suite
- Cisco MDS 9500 Series Chassis Options
- Cisco MDS 9500 Series Supervisor Modules
- Cisco MDS 9500 Series Licensing Options
- Cisco MDS 9000 Series Switching Modules
- Cisco MDS 9500 Series Power Supply Options
- Cisco MDS 9100 Series Switches
- Cisco MDS 9222i Switch

Lesson 4: Monitoring the Cisco Nexus 7000 and 5000 Series Switches

- Connecting to the Console Port
- Running the Initial Setup Script
- Connecting to the Cisco Nexus 7000 CMP
- Connecting to the Switch Using SSH to Connect to the Management VRF
- Reviewing the ISSU on the Cisco Nexus Switches
- Verifying VLANs
- Examining the Operational Plane
- Reviewing Cisco NX-OS Default Control Plane Policing
- Using Important CLI Commands

Lesson 5: Describing vPCs and Cisco FabricPath in the Data Center

- Virtual Port Channels
- Verifying vPCs
- Cisco FabricPath
- Verifying Cisco FabricPath
- Lesson 6: Using OTV on Cisco Nexus 7000 Series Switches
- OTV on the Cisco Nexus 7000 Series Switches
- Verifying OTV on the Cisco Nexus 7000 Series Switches

Module 2: Cisco Data Center Virtualization

Lesson 1: Virtualizing Network Devices

- Describing VDCs on the Cisco Nexus 7000 Series Switch
- Verifying VDCs on the Cisco Nexus 7000 Series Switch
- Navigating Between VDCs on the Cisco Nexus 7000 Series Switch
- Describing NIV on Cisco Nexus 7000 and 5000 Series Switches

Lesson 2: Virtualizing Storage

- LUN Storage Virtualization
- Storage-System Virtualization

Lesson 3: Virtualizing Server Solutions

- Benefits of Server Virtualization
- Available Data Center Server Virtualization Solutions

Lesson 4: Using the Cisco Nexus 1000V Series Switch

- Limitations of VMware vSwitch
- Advantages of VMware vDS
- How the Cisco Nexus 1000V Series Switch Brings Network Visibility to the VM Level
- How the VSM and VEM Integrate with VMware ESX or ESXi and vCenter

Lesson 5: Verifying Setup and Operation of the Cisco Nexus 1000V Series Switch

- Verify the Initial Configuration and Module Status on the Cisco Nexus 1000V Series Switch
- Verifying the VEM Status on the ESX or ESXi Host
- Validating VM Port Groups

Module 3: Cisco Data Center Storage Networking

Lesson 1: Comparing Storage-Connectivity Options in the Data Center

- Comparing Block- and File-Based Network Storage
- NFS, Fibre Channel, iSCSI, and SCSI
- SCSI Evolution from DAS to SAN

Introducing Cisco Data Center Technologies (DCICT)

Course ID#: 1575-902-ZZ-W

Hours: 35

Lesson 2: Describing Fibre Channel Storage Networking

- Fibre Channel SAN Topologies
- Fibre Channel Port Types
- Fibre Channel Addressing
- Fibre Channel Layered Model ◎ FCNS and the FLOGI process
- Fibre Channel Zoning and LUN Masking

Lesson 3: Verifying Fibre Channel Communications on Cisco MDS 9000 Series Multilayer Switches

- Configure a Cisco MDS 9000 Series Multilayer Switch from the CLI Setup Script
- Update the Cisco NX-OS on a Cisco MDS 9000 Series Multilayer Switch
- Update Licensed Features on the Cisco MDS 9000 Series Multilayer Switch
- Verify Initiator and Target Fabric Login
- Verify Fibre Channel Zoning on a Cisco MDS 9000 Series Multilayer Switch
- Collect Technical Support Data on a Cisco MDS 9000 Series Multilayer Switch

Module 4: Cisco Data Center Unified Fabric

Lesson 1: Describing DCB

- Unified Fabric Benefits
- IEEE Standards That Enable FCoE
- Priority Flow Control
- Enhanced Transmission Selection
- DCB Exchange

Lesson 2: Identifying Connectivity Options for FCoE on the Cisco Nexus 5000 Series Switch

- SFP modules
- Cabling Requirements and Distance Limitations for Common SFP and SFP+ Transceivers
- Connecting the Cisco UCS P81E Virtual Interface Card to Cisco Nexus 5500UP Unified
- Fabric Switches
- Connecting the Cisco Nexus 5500UP Unified Fabric Switch to Northbound LAN and SAN
- Fabrics

Lesson 3: Describing Enhanced FCoE Scalability with Cisco Nexus 2232 10GE Fabric

- Extenders
- Scaling the Data Center Virtualized Access Layer with the Cisco Nexus 2232 10GE
- Fabric Extenders
- Cisco Nexus 2232 10GE Fabric Extender-to-Cisco Nexus 5500 Switch Connectivity
- Adapter FEX on the Cisco Nexus 2232 10GE Fabric Extender
- Verifying Adapter FEX on the Cisco Nexus 2232 10GE Fabric Extender

Module 5: Cisco UCS

Lesson 1: Describing the Cisco UCS B-Series Product Family

- Cisco UCS 6100 and 6200 Series Fabric Interconnects
- Cisco UCS 5108 Blade Server Chassis
- Cisco UCS B200 M3 Blade Server
- Cisco UCS B230 M2 Blade Server
- Cisco UCS B250 M2 Extended Memory Blade Server
- Cisco UCS B440 M2 High-Performance Blade Server
- Mezzanine Card Options for Cisco UCS B-Series Blade Servers
- Memory Population Guidelines for Cisco UCS B-Series Blade Servers

Introducing Cisco Data Center Technologies (DCICT)

Course ID#: 1575-902-ZZ-W

Hours: 35

Lesson 2: Describing the Cisco UCS C-Series Product Family

- Cisco UCS C-Series Product Family
- Cisco UCS C200 M2 High-Density Rack Server
- Cisco UCS C210 M2 General-Purpose Rack Server
- Cisco UCS C220 M3 Rack Server
- Cisco UCS C240 M3 Rack Server
- Cisco UCS C250 M2 Extended-Memory Rack Server
- Cisco UCS C260 M2 Rack Server
- Cisco UCS C460 M2 High-Performance Rack Server
- PCIe Adapter Options for Cisco UCS C-Series Rack Servers
- RAID Adapter Options for Cisco UCS C-Series Rack Servers
- Memory Population Guidelines for Cisco UCS C-Series Rack Servers

Lesson 3: Connecting Cisco UCS B-Series Blade Servers

- Chassis-to-Fabric Interconnect Physical Connectivity
- I/O Module Architectures
- Cisco Integrated Management Controller Chip on Cisco UCS B-Series Blade Servers
- Three Basic Port Personalities in the Fabric Interconnect
- Discovery Process

Lesson 4: Setting up an Initial Cisco UCS B-Series Cluster

- Cabling a Cisco UCS Fabric Interconnect Cluster
- Initial Setup Script for the Primary Peer
- Initial Setup Script for the Secondary Peer
- Verifying a Fabric Interconnect Cluster

Lesson 5: Describing Cisco UCS Manager Operations

- Cisco UCS Manager
- Layout of the Cisco UCS Manager GUI
- Navigation Window Tabs
- Device Discovery in Cisco UCS Manager
- Verifying Device Discovery in UCS Manager

Lesson 6: Describing Cisco UCS Manager Pools, Policies, Templates, and Service Profiles

- Benefits of Stateless Computing
- Using Identity Pools in Service Profiles
- Using Service Profile Templates to Enable Rapid Provisioning and Consistent Application of Policy
- Creation of Policies for Service Profiles and Service Profile Templates
- Chassis and Blade Power Capping