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TECHNOLOGY TRAINING & SOLUTIONS
"Training You Can Really Use"

Understanding Cisco® Data Center Fundamentals (DCFUND) v1.0

Duration: 5 Days

Method: Instructor-Led Training (ILT) | Live Online Training

Course Description

In this course, participants will learn the foundational knowledge and skills they need to configure Cisco data centre technologies including networking, virtualization, storage area networking, and unified computing. Participants will get an introduction to Cisco Application Centric Infrastructure (Cisco ACI), automation and cloud computing. They will get hands-on experience with configuring features on the Cisco Nexus Operating System (Cisco NX-OS) and Cisco Unified Computing System (Cisco UCS). This course will help participants prepare for entry-level job roles in the high-demand area of data centre environments. It will also help participants prepare for the courses that support the Cisco Certified Network Professional (CCNP) Data Center certification exams.

Target Audience

This course is intended for:

- Data Center Administrators
- Data Center Engineers
- Server Administrators
- Cisco Integrators and Partners
- Technical Solutions Architects
- (Consulting) Systems Engineers
- Network Administrators/ Engineers/ Designers Managers

Prerequisites

To attend this course, candidates must have:

- Good understanding of networking protocols
- Good understanding of the VMware environment
- Basic knowledge of Microsoft® Windows® operating systems.

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Course Objectives

Upon successful completion of this course, attendees will be able to:

- Describe the foundations of data centre networking.
- Describe Cisco Nexus products and explain the basic Cisco NX-OS functionalities and tools.
- Describe Layer 3 first-hop redundancy.
- Describe Cisco FEX connectivity.
- Describe Ethernet port channels and vPCs.
- Introduce switch virtualization, machine virtualization, and describe network virtualization.
- Compare storage connectivity options in the data centre.
- Describe Fibre Channel communication between the initiator server and the target storage.
- Describe Fibre Channel zone types and their uses.
- Describe NPV and NPIV.
- Describe data centre Ethernet enhancements that provide a lossless fabric.
- Describe FCoE.
- Describe data centre server connectivity.
- Describe Cisco UCS Manager.
- Describe the purpose and advantages of APIs.
- Describe the Cisco ACI.
- Describe the basic concepts of cloud computing.

Course Topics

Module 1: Describing the Data Center Network Architectures

- Cisco Data Center Architecture Overview
- Three-Tier Network: Core, Aggregation, and Access
- Spine-and-Leaf Network
- Two-Tier Storage Network

Module 2: Describing the Cisco Nexus Family and Cisco NX-OS Software

- Cisco Nexus Data Center Product Overview
- Cisco NX-OS Software Architecture
- Cisco NX-OS Software CLI Tools
- Cisco NX-OS Virtual Routing and Forwarding

Module 3: Describing Layer 3 First-Hop Redundancy

- Default Gateway Redundancy
- Hot Standby Router Protocol
- Virtual Router Redundancy Protocol
- Gateway Load Balancing Protocol

Module 4: Describing Cisco FEX

- Server Deployment Models
- Cisco FEX Technology
- Cisco FEX Traffic Forwarding
- Cisco Adapter FEX

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Course Topics *Continued*

Module 5: Describing Port Channels and vPCs

- Ethernet Port Channels
- Virtual Port Channels
- Supported vPC Topologies

Module 6: Describing Switch Virtualization

- Cisco Nexus Switch Basic Components
- Virtual Routing and Forwarding
- Cisco Nexus 7000 VDCs
- VDC Types
- VDC Resource Allocation
- VDC Management

Module 7: Describing Machine Virtualization

- Virtual Machines
- Hypervisor
- VM Manager

Module 8: Describing Network Virtualization

- Overlay Network Protocols
- VXLAN Overlay
- VXLAN BGP EVPN Control Plane
- VXLAN Data Plane
- Cisco Nexus 1000VE Series Virtual Switch
- VMware vSphere Virtual Switches

Module 9: Introducing Basic Data Center Storage Concepts

- Storage Connectivity Options in the Data Center
- Fibre Channel Storage Networking
- VSAN Configuration and Verification

Module 10: Describing Fibre Channel Communication Between the Initiator Server and the Target Storage

- Fibre Channel Layered Model
- FLOGI Process
- Fibre Channel Flow Control

Module 11: Describing Fibre Channel Zone Types and Their Uses

- Fibre Channel Zoning
- Zoning Configuration
- Zoning Management

Module 12: Describing Cisco NPV Mode and NPIV

- Cisco NPV Mode
- NPIV Mode

Module 13: Describing Data Center Ethernet Enhancements

- IEEE Data Center Bridging
- Priority Flow Control
- Enhanced Transmission Selection
- DCBX Protocol
- Congestion Notification

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Course Topics *Continued*

Module 14: Describing FCoE

- Cisco Unified Fabric
- FCoE Architecture
- FCoE Initialization Protocol
- FCoE Adapters

Module 15: Describing Cisco UCS Components

- Physical Cisco UCS Components
- Cisco Fabric Interconnect Product Overview
- Cisco IOM Product Overview
- Cisco UCS Mini
- Cisco IMC Supervisor
- Cisco Intersight

Module 16: Describing Cisco UCS Manager

- Cisco UCS Manager Overview
- Identity and Resource Pools for Hardware Abstraction
- Service Profiles and Service Profile Templates
- Cisco UCS Central Overview
- Cisco HyperFlex Overview

Module 17: Using APIs

- Common Programmability Protocols and Methods
- How to Choose Models and Processes

Module 18: Describing Cisco ACI

- Cisco ACI Overview
- Multitier Applications in Cisco ACI
- Cisco ACI Features
- VXLAN in Cisco ACI
- Unicast Traffic in Cisco ACI
- Multicast Traffic in Cisco ACI
- Cisco ACI Programmability
- Common Programming Tools and Orchestration Options

Module 19: Describing Cloud Computing

- Cloud Computing Overview
- Cloud Deployment Models
- Cloud Computing Services

LABS INCLUDED