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**Learning Style: On Demand**

**Provider: Cisco**

**Difficulty: Intermediate**

**Course Duration: 40 Hours**

## Understanding Cisco Data Center Foundations (DCFNDU) V1.0 - On Demand



### Course Information

#### About this course:

This course will prepare you for entry-level data center roles.

The course will teach you the foundational knowledge and skills you need to configure Cisco data center technologies, including SAN networking, virtualization, networking and unified computing. You will get hands-on experience with configuring features on Cisco Nexus® Operating System (Cisco NX-OS) and Cisco Unified Computing System™ (Cisco UCS®). You will also get an introduction to Cisco Application Centric Infrastructure (Cisco ACI™), cloud computing and automation.

## **Course Objective:**

You will be equipped with following skills after taking this course:

- Describe the foundations of data center networking
- Describe Cisco UCS Manager
- Describe the purpose and advantages of application programming interfaces (APIs)
- Describe Cisco ACI
- Describe the basic concepts of cloud computing
- Describe Cisco Nexus products and explain the basic Cisco NX-OS functionalities and tools
- Describe Layer 3 first-hop redundancy
- Describe Cisco Fabric Extender (FEX) connectivity
- Describe N-Port Virtualization (NPV) and N-Port Identifier Virtualization (NPIV)
- Describe data center Ethernet enhancements that provide a lossless fabric
- Describe Fibre Channel over Ethernet (FCoE)
- Describe data center server connectivity
- Describe Ethernet port channels and virtual port channel (vPCs)
- Introduce switch virtualization, machine virtualization, and network virtualization
- Compare storage connectivity options in the data center
- Describe Fibre Channel communication between the initiator server and the target storage
- Describe Fibre Channel zone types and their uses

## **Audience:**

- Server administrators
- Network managers
- Cisco integrators and partners
- Data center administrators
- Data center engineers
- Systems engineers

## **Prerequisite:**

You should have the following knowledge and skills to fully benefit from this course:

- Good understanding of the VMware environment

- Basic knowledge of Microsoft Windows operating systems
- Good understanding of networking protocols

These Cisco courses are recommended to help you meet these prerequisites:

- Introducing Cisco Data Center Networking (DCICN)
- Introducing Cisco Data Center Technologies (DCICT)
- Implementing and Administering Cisco Solutions (CCNA)

## **Course Outline:**

### **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

### **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

### **Describing Layer 3 First-Hop Redundancy**

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

### **Describing Cisco FEX**

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

### **Describing Port Channels and VPCs**

Ethernet Port Channels  
Virtual Port Channels  
Supported VPC Topologies

### **Describing Switch Virtualization**

Cisco Nexus Switch Basic Components  
Virtual Routing and Forwarding  
Cisco Nexus 7000 Virtual Device Contexts (VDCs)

VDC Types  
VDC Resource Allocation  
VDC Management

## **Describing Machine Virtualization**

Virtual Machines  
Hypervisor  
VM Manager

## **Describing Network Virtualization**

Overlay Network Protocols  
Virtual Extensible LAN (VXLAN) Overlay  
VXLAN Border Gateway Protocol (BGP) Ethernet VPN (EVPN) Control Plane  
VXLAN Data Plane  
Cisco Nexus 1000VE Series Virtual Switch  
VMware vSphere Virtual Switches

## **Introducing Basic Data Center Storage Concepts**

Storage Connectivity Options in the Data Center  
Fibre Channel Storage Networking  
Virtual Storage Area Network (VSAN) Configuration and Verification

## **Describing Fibre Channel Communication Between the Initiator Server and the Target Storage**

Fibre Channel Layered Model  
Fabric Login (FLOGI) Process  
Fibre Channel Flow Control

## **Describing Fibre Channel Zone Types and Their Uses**

Fibre Channel Zoning  
Zoning Configuration  
Zoning Management

## **Describing Cisco NPV Mode and NPIV**

Cisco NPV Mode  
NPIV Mode

## **Describing Data Center Ethernet Enhancements**

Institute of Electrical and Electronic Engineers (IEEE) Data Center Bridging  
Priority Flow Control  
Enhanced Transmission Selection  
Data Center Bridging Exchange (DCBX) Protocol

Congestion Notification

## **Describing FCoE**

Cisco Unified Fabric  
FCoE Architecture  
FCoE Initialization Protocol  
FCoE Adapters

## **Describing Cisco UCS Components**

Physical Cisco UCS Components  
Cisco Fabric Interconnect Product Overview  
Cisco I/O Module (IOM) Product Overview  
Cisco UCS Mini  
Cisco Integrated Management Controller (IMC) Supervisor  
Cisco Intersight™

## **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

## **Using APIs**

Common Programmability Protocols and Methods  
How to Choose Models and Processes

## **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

## **Describing Cloud Computing**

Cloud Computing Overview  
Cloud Deployment Models  
Cloud Computing Services

## **Credly Badge:**



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- Display your hard work and validate your expertise
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