

Course Code DCFNDU
Duration 5 days

Overview

The Understanding Cisco Data Center Foundations (DCFNDU) v1.0 course helps you prepare for entry-level data center roles. In this course, you will learn the foundational knowledge and skills you need to configure Cisco® data center technologies including: networking, virtualization, storage area networking, and unified computing. You will get an introduction to Cisco Application Centric Infrastructure (Cisco ACI), automation and cloud 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).

Audience

Individuals who want to:

- ▶ Prepare for entry-level job roles in the high-demand area of data center environments.
 - ▶ Prepare for courses that support the Cisco Certified Network Professional Data Center certification exams.
 - ▶ Gain knowledge and hands-on skills through Cisco's unique combination of lessons and hands-on practice using enterprise-grade Cisco learning technologies, data center equipment, and software.
-

Learning Objectives

By actively participating in this course, you will learn about the following:

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



Pre-Requisites

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

Recommended courses:

- ▶ CCNA - Implementing and Administering Cisco Solutions

Course Contents

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 VDCs
- ▶ VDC Types
- ▶ VDC Resource Allocation
- ▶ VDC Management

Describing Machine Virtualization

- ▶ Virtual Machines
- ▶ Hypervisor
- ▶ VM Manager



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

Introducing Basic Data Center Storage Concepts

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

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

- ▶ Fibre Channel Layered Model
- ▶ 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

- ▶ IEEE Data Center Bridging
- ▶ Priority Flow Control
- ▶ Enhanced Transmission Selection
- ▶ 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 IOM Product Overview
- ▶ Cisco UCS Mini
- ▶ Cisco 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

Labs

- Explore the Cisco NX-OS CLI
- Explore Topology Discovery
- Configure HSRP
- Configure the Cisco Nexus 2000 FEX
- Configure vPCs
- Configure vPCs with Cisco FEX
- Configure VRF
- Explore the VDC Elements
- Install VMware ESXi and vCenter
- Configure VSANs
- Validate FLOGI and FCNS
- Configure Zoning
- Configure Unified Ports on a Cisco Nexus Switch and Implement FCoE
- Explore the Cisco UCS Server Environment
- Configure a Cisco UCS Server Profile
- Configure Cisco NX-OS with APIs
- Explore the Cisco UCS Manager XML API Management Information Tree

Exam Details

There are no exams currently aligned to this course.

Further Information

For more information or to book this course, please contact our Course Enquiries Team on **01752 227330** (Option 2) or email us at enquiries@skilltec.co.uk.