Understanding Cisco Data Center Foundations

Duration: 5 Days **Course Code: DCFNDU** **Version: 2.0**

Overview:

The Understanding Cisco Data Center Foundations 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®).
This course does not lead directly to a certification exam, but it does cover foundational knowledge that can help you prepare for several professional-level data center courses and exams.

This course will help you:
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
Earn 25 CE credits toward recertification

Target Audience:

Individuals looking to gain the knowledge and skills required for an entry level role in a Cisco Data Center environment.

Objectives:

- **After completing this course, you should be able to:**
- Describe the foundations of data center networking
- Describe Cisco Nexus products and explain the basic Cisco NX-OS functionalities and tools
- Describe Layer 3 first-hop redundancy
- Describe Ethernet port channels and vPCs
- Introduce switch virtualization
- Introduce machine virtualization
- Describe 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
- Describe NPV and NPIV
- Describe data center Ethernet enhancements that provide a lossless fabric
- Describe FCoE
- Describe data center server connectivity
- Describe Cisco UCS Manager
- Describe the purpose and advantages of APIs
- Describe Cisco ACI
- Describe Nexus Dashboard
- Describe the basic concepts of cloud computing

Prerequisites:

Attendees should meet the following prerequisites:

- Good foundation of networking protocols
- Basic knowledge of computer virtualization
- Basic computer literacy
- Basic knowledge of computer operating systems

Testing and Certification

Recommended as preparation for the following exams:

- There are no exams currently aligned to this course

- Basic internet usage skills
- CCNA - Implementing and Administering Cisco Solutions

Follow-on-Courses:

- DCACI - Implementing Cisco Application Centric Infrastructure
- DCCOR - Implementing and Operating Cisco Data Center Core Technologies
- DCID - Designing Cisco Data Center Infrastructure
- DCIT - Troubleshooting Cisco Data Center Infrastructure

Content:

Describing the Data Center Network Architectures

- Cisco Data Center Architecture Overview
- Three-Tier Network: Core, Aggregation, and Access
- Spine-and-Leaf Network
- Storage Area Networks
- Hypoconverged Storage Systems

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 Port Channels and vPCs

- Ethernet Port Channels
- Virtual Port Channels

Describing Switch Virtualization

- Cisco Nexus Switch Basic Components
- Virtual Routing and Forwarding

Describing Machine Virtualization

- Virtual Machines
- Hypervisor
- Virtual Machine Manager

Describing Network Virtualization

- Overlay Network Protocols
- VXLAN Overlay
- VXLAN BGP EVPN Control Plane
- VXLAN Data Plane
- 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 the Cisco MDS Family

- Cisco MDS Overview

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 Switch Mode
- NPIV Mode

Describing FCoE

- FCoE Architecture

Describing Cisco UCS and UCS-X Components

- Cisco UCS Server Hardware
- Cisco Intersight
- Cisco Compute Hyperconverged with Nutanix

Describing Cisco UCS Manager and Cisco Intersight

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

Automating the Data Center

- Cisco NX-OS Programmability
- Cisco NX-OS Model-Driven Programmability
- Cisco Nexus API
- Python
- Ansible
- HashiCorp Terraform

Describing Cisco Nexus Dashboard

- Cisco Nexus Dashboard Overview
- Cisco Nexus Dashboard Fabric Controller Overview

Describing Cisco ACI

- Cisco ACI Overview
- Cisco ACI Topology and Hardware
- Cisco ACI Policy Model
- Cisco ACI External Connectivity Options
- Cisco ACI and VMM Integration
- Cisco ACI and Layer4-Layer 7 Integration
- Cisco ACI Management and Automation
- Cisco ACI Anywhere

Describing Cloud Computing

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

Labs

- Discovery Lab 1: Explore the Cisco NX-OS CLI
- Discovery Lab 2: Explore Topology Discovery
- Discovery Lab 3: Configure HSRP
- Discovery Lab 4: Configure vPCs
- Discovery Lab 5: Configure VRF
- Discovery Lab 6: Explore CoPP and Spanning Tree on Cisco Nexus Switches
- Discovery Lab 7: Install VMware ESXi and vCenter
- Discovery Lab 8: Configure VSANs
- Discovery Lab 9: Validate FLOGI and FCNS
- Discovery Lab 10: Configure Zoning
- Discovery Lab 11: Review Unified Ports on a Cisco Nexus Switch and Implement FCoE

- Discovery Lab 12: Explore the Cisco UCS Server Environment
- Discovery Lab 13: Configure a Cisco UCS Service Profile
- Discovery Lab 14: Configure Cisco NX-OS with APIs
- Discovery Lab 15: Explore the Cisco UCS Manager XML API Management Information Tree
- Discovery Lab 16: Explore Cisco ACI

Further Information:

For More information, or to book your course, please call us on Head Office Tel.: +974 40316639

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