FIREFLY

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Understanding Cisco Data Center Foundations

DURATION: 5 DAYS COURSE CODE: DCFNDU FORMAT: LECTURE/LAB

COURSE DESCRIPTION

The Understanding Cisco Data Center Foundations (DCFNDU) v1.1 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®).

WHO SHOULD ATTEND

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

PREREQUISITES

Good understanding of networking protocols

Good understanding of the VMware environment

Basic knowledge of Microsoft Windows operating systems

These are the recommended Cisco courses that may help you meet these prerequisites:

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

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

LEARNING OBJECTIVES

- 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 Cisco Fabric Extender (FEX) 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
- 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 FCo
- Describe data center server connectivity
- Describe Cisco UCS Manager
- Describe the purpose and advantages of APIs
- Describe Cisco ACI
- Describe the basic concepts of cloud
- Describe the basic concepts of cloud computing

COURSE OUTLINE

- Describing the Data Center Network Architectures
  - Cisco Data Center Architecture Overview
  - Three-Tier Network: Core, Aggregation, and Access
- Describing the Cisco Nexus Family and Cisco NX-OS Software
  - Cisco Nexus Data Center Product Overview
  - Cisco NX-OS Software Architecture
- Describing Layer 3 First-Hop Redundancy
  - Default Gateway Redundancy
  - Hot Standby Router 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
- Describing Network Virtualization
  - Overlay Network Protocols
  - Virtual Extensible LAN (VXLAN) Overlay
- Introducing Basic Data Center Storage Concepts
  - Storage Connectivity Options in the Data Center
  - Fibre Channel Storage Networking
- Describing Fibre Channel Communication Between the Initiator Server and the Target Storage
  - Fibre Channel Layered Model
  - Fabric Login (FLOGI) Process
- Describing Fibre Channel Zone Types and Their Uses
  - Fibre Channel Zoning
  - Zoning Configuring
- Describing Cisco NPV Mode and NPV
  - Cisco NPV MOde
  - NPV Mode
- Describing Data Center Ethernet Enhancements
  - IEEE Data Center Bridging
  - Priority Flow Control
- Describing FCoE
  - Cisco Unified Fabric
  - FCoE Architecture
- Describing Cisco UCS Components
  - Physical Cisco UCS Components
  - Cisco Fabric Interconnect Product Overview
- Describing Cisco UCS Manager
  - Cisco UCS Manager Overview
  - Identity and Resource Pools for Hardware Abstraction
- Using APIs
  - Common Programmability Protocols and Methods
  - How to Choose Models and Processes
- Automating the Data Center

COURSE OUTLINE

- Describing Cisco ACI
  - Cisco ACI Overview
  - Multitier Applications in Cisco ACI
- Describing Cloud Computing
  - Cloud Computing Overview
  - Cloud Deployment Models

DISCOVERY LABS

- Explore the Cisco NX-OS CLI
- Explore Topology Discovery
- Configure Hot Standby Router Protocol (HSRP)
- Configure vPCs
- Configure Virtual Routing and Forwarding (VRF)
- Explore the Virtual Device Contexts (VDC) Elements
- Install VMware Elastic Sky X Integrated (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
- Explore Cisco ACI