DCFNDU

Understanding Cisco Data Center Foundations

40 horas | Data Center | Cisco

Cisco Continuing Education Credits

25 CE Credits

INTRODUÇÃO

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).

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.

This course does not lead directly to a certification exam, but it does cover foundational knowledge that can help you prepare for several CCNP and other professional-level data center courses and exams:

• Course Implementing and Operating Cisco Data Center Core Technologies (DCCOR)/Exam 350-601;

• Course Designing Cisco Data Center Infrastructure (DCID)/ Exam 350-610;

• Course Troubleshooting Cisco Data Center Infrastructure (DCIT)/Exam 350-615;

• Course Implementing Cisco Application Centric Infrastructure (DCACI)/Exam 350-620;

• Course Introducing Cisco NX-OS Switches and Fabrics in the Data Center (DCINX);

• Course Configuring Cisco Nexus Switches (DCCNX).

OBJETIVO DO CURSO

After taking 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 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 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 the basic concepts of cloud computing.

PÚBLICO-ALVO

Professionals interested in implementing, configuring, operating and management Cisco Data Center solutions.

This course also helps prepare student to take CCNP® Data Center exams and training.

PRÉ-REQUISITOS

To fully benefit from this course, you should have the following knowledge and skills:

• Good understanding of networking protocols;

• Good understanding of the VMware environment;

• Basic knowledge of Microsoft Windows operating systems.

CONTEÚDO PROGRAMÁTICO

Course Introduction

Course Outline

Course Goals & Objectives

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 Trafic 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 Trafic in Cisco ACI

Multicast Trafic in Cisco ACI

Cisco ACI Programmability

Common Programming Tools and Orchestration Options

Describing Cloud Computing

Cloud Computing Overview

Cloud Deployment Models

Cloud Computing Services

Lab Outline

Lab 1: Explore the Cisco NX-OS CLI

Lab 2: Explore Topology Discovery

Lab 3: Configure HSRP

Lab 4: Configure the Cisco Nexus 2000 FEX

Lab 5: Configure vPCs

Lab 6: Configure vPCs with Cisco FEX

Lab 7: Configure VRF

Lab 8: Explore the VDC Elements

Lab 9: Install VMware ESXi and vCenter

Lab 10: Configure VSANs

Lab 11: Validate FLOGI and FCNS

Lab 12: Configure Zoning

Lab 13: Configure Unified Ports on a Cisco Nexus Switch and Implement FCoE

Lab 14: Explore the Cisco UCS Server Environment

Lab 15: Configure a Cisco UCS Server Profile

Lab 16: Configure Cisco NX-OS with APIs

Lab 17: Explore the Cisco UCS Manager XML API Management Information Tree