

# DCUFD<sup>®</sup>

## Designing Cisco Data Center Unified Fabric

### MODULE 1: DATA CENTER DESIGN FUNDAMENTALS

#### Lesson 1: Introducing the Data Center

- ✓ Data Center Business Objectives
- ✓ Data Center Drivers
- ✓ Data Center High Availability
- ✓ Data Center Environmental Characteristics
- ✓ Data Center Evolution Drivers
- ✓ Data Center Architecture Business Objectives

#### Lesson 2: Identifying the Cisco Data Center Business Advantage

- ✓ Data Center Environmental Objectives
- ✓ Data Center Thermal Control Model
- ✓ Physical Device Positioning Within the Data Center
- ✓ Benefits of Condensed Computing Environments
- ✓ Green Data Center Characteristics
- ✓ Green Data Center Efficient Resource Utilization
- ✓ Network Design Models Overview
- ✓ Data Center and Campus Networks

#### Lesson 3: Designing Data Center Solutions

- ✓ High-Level Design Steps
- ✓ Design Process Deliverables
- ✓ Data Center Design and Operational Challenges

### MODULE 2: DATA CENTER NETWORK INFRASTRUCTURE

#### Lesson 1: Introducing Cisco Catalyst Series Switches

- ✓ Cisco Catalyst 6500 Series Switches
- ✓ Cisco Catalyst 6500 Virtual Switching System
- ✓ Cisco Catalyst 4948, 4948E, and 4900M Switches
- ✓ Cisco Catalyst 4500 Series Switches for Data Center
- ✓ Cisco Catalyst Blade Switches
- ✓ Data Center Cabling Technologies
- ✓ Cisco Optical Equipment
- ✓ Data Center Design Challenges

#### Lesson 2: Introducing Cisco Nexus Series Switches

- ✓ Cisco Nexus 7000 Series Switches
- ✓ Cisco Nexus 5000 and 5500 Series Switches
- ✓ Cisco Nexus 4000 Series Blade Switches
- ✓ Cisco Nexus 3000 Series Switch
- ✓ Cisco Nexus 2000 Series Fabric Extenders
- ✓ Cisco Nexus 1000V Virtual Switch and Cisco Nexus 1010 VSM VSA
- ✓ Data Center Cabling Technologies
- ✓ Data Center Design Challenges

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### Lesson 3: Introducing Cisco Data Center Security Products

- ✓ Cisco Adaptive Security Appliances
- ✓ Cisco Catalyst 6500 Series Security Service Modules
- ✓ Intrusion Detection Systems and Intrusion Prevention Systems
- ✓ Virtual Security Devices
- ✓ Data Center Design Challenges

### Lesson 4: Introducing Cisco Data Center Application Services Products

- ✓ Cisco ACE
- ✓ Additional Cisco ACE Products
- ✓ Cisco WAAS
- ✓ Data Center Design Challenges

### Lesson 5: Introducing Cisco SAN Products

- ✓ Cisco MDS Switches
- ✓ Cisco MDS Blade Switches
- ✓ Data Center Design Challenges

### Lesson 6: Introducing Cisco Computing, Desktop, and Solution Products

- ✓ Cisco Unified Computing System B-Series Blade Servers and Cisco C-Series Servers
- ✓ Cisco VXi
- ✓ Data Center Design Challenges

### Lesson 7: Introducing Cisco Data Center Network Management

- ✓ Network Management Tools
- ✓ Cisco NAM
- ✓ Cisco Nexus 1010 NAM Virtual Service Blade
- ✓ NetFlow
- ✓ Data Center Design Challenges

## MODULE 3: DATA CENTER NETWORK VIRTUALIZATION PRINCIPLES

### Lesson 1: Introducing Device Virtualization

- ✓ Network Device Virtualization
- ✓ Virtualization using VSS
- ✓ Virtualization using VDCs
- ✓ Device Virtualization using Contexts
- ✓ Link Bundling and Virtualization Mechanisms

### Lesson 2: Introducing Network Virtualization

- ✓ Understanding EHV
- ✓ Understanding VN-Link and VN-Tag
- ✓ Use Case Examples for Link Virtualization

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### Lesson 3: Introducing Fabric Virtualization

- ✓ Storage Access Methods Comparison
- ✓ Fibre Channel Networks
- ✓ Fibre Channel over Ethernet
- ✓ FCoE Initialization Protocol
- ✓ FCoE and FIP Hardware
- ✓ SAN Virtualization NPV and NPIV

### Lesson 4: Identifying Data Center Standards and Trends

- ✓ Data Center Trends
- ✓ Unified Fabric and Lossless Ethernet
- ✓ Layer 2 Multipathing Protocols
- ✓ Data Center Network Components

## MODULE 4: DATA CENTER TOPOLOGIES

### Lesson 1: Designing Data Center Topologies

- ✓ Data Center Topologies
- ✓ Data Center Core Layer
- ✓ Data Center Aggregation and Collapsed Core Layers
- ✓ Data Center Access Layer

### Lesson 2: Designing Data Center Topologies Using FEX

- ✓ Data Center Access and Aggregation Layer Design Using FEXs
- ✓ Server Connectivity Redundancy
- ✓ FEX Attachment Options
- ✓ Unified Fabric Connectivity

### Lesson 3: Designing Data Center Interconnect Solutions

- ✓ DCI Drivers
- ✓ DCI with OTV
- ✓ DCI Using Dark Fiber
- ✓ DCI Using MPLS Technology
- ✓ DCI Using Tunneling Technologies

## MODULE 5: DATA CENTER SERVICES AND SECURITY

### Lesson 1: Designing Data Center IP Services

- ✓ Data Center IP Layer Design
- ✓ Routing Protocol Design
- ✓ Highly Available Designs
- ✓ Route Health Injection
- ✓ IP Services Using FHRP
- ✓ Multitenancy Solutions

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### **Lesson 2: Designing Data Center Application Services**

- ✓ Multitier Application Design
- ✓ Application Services Placement
- ✓ Application Services Using Cisco ACE and Cisco ACE GSS

### **Lesson 3: Designing Data Center Security**

- ✓ Network Infrastructure Security Implementation
- ✓ Network Infrastructure Security Policy

## **MODULE 6: DATA CENTER STANDARDS**

### **Lesson 1: Sizing the Data Center :**

- ✓ Data Center Sizing Examples

**Sono previste esercitazioni pratiche su tutti gli argomenti trattati.**

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