IT-DCID - Designing Cisco Data Center Infrastructure

Cisco - CCNP Data Center - Networking

Durata:	Lingue:	Certificazione:
5 Giorni	**Italiano**	**Cisco Certified Network Professional Data Center**

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Descrizione del corso

The Designing Cisco Data Center Infrastructure (DCID) v7.0 course helps you master design and deployment options focused on Cisco® data center solutions and technologies across network, compute, virtualization, storage area networks, automation, and security. You will learn design practices for the Cisco Unified Computing System™ (Cisco UCS®) solution based on Cisco UCS B-Series and C-Series servers, Cisco UCS Manager, and Cisco Unified Fabric. You will also gain design experience with network management technologies including Cisco UCS Manager, Cisco Data Center Network Manager (DCNM), and Cisco UCS Director. You can expect theoretical content as well as design-oriented case studies in the form of activities. This course helps you prepare to take the exam, Designing Cisco Data Center Infrastructure (300-610 DCID), which leads to the new CCNP® Data Center and Cisco Certified Specialist - Data Center Design certifications. **Prerequisites:** Before taking this course, you should understand the following:
• Implement data center networking [local area network (LAN) and storage area network (SAN)]
• Describe data center storage
• Implement data center virtualization
• Implement Cisco Unified Computing System (Cisco UCS)
• Implement data center automation and orchestration with the focus on Cisco Application Centric Infrastructure (ACI) and Cisco UCS Director
• Describe products in the Cisco Data Center Nexus and Multilayer Director Switch (MDS) families
It is recommended, but not required, to have the following skills and knowledge before attending this course:
• Describe data center networking concepts
• Describe data center storage concepts
• Describe data center virtualization
• Describe Cisco UCS
• Describe data center automation and orchestration with a focus on Cisco ACI and Cisco UCS Director
• Identify products in the Cisco data center Nexus and Cisco MDS families
• Describe network fundamentals and build simple LANs, including switching and routing

Programma

Describing High Availability on Layer 2

- Overview of Layer 2 High-Availability Mechanisms

- Virtual Port Channels
- Cisco FabricPath
- Virtual Port Channel+

Designing Layer 3 Connectivity

- First Hop Redundancy Protocols
- Improve Routing Protocol Performance and Security
- Enhance Layer 3 Scalability and Robustness

Designing Data Center Topologies

- Data Center Traffic Flows
- Cabling Challenges
- Access Layer
- Aggregation Layer
- Core Layer
- Spine-and-Leaf Topology
- Redundancy Options

Designing Data Center Interconnects with Cisco OTV

- Cisco OTV Overview
- Cisco OTV Control and Data Planes
- Failure Isolation
- Cisco OTV Features
- Optimize Cisco OTV
- Evaluate Cisco OTV

Describing Locator/ID Separation Protocol

- Locator/ID Separation Protocol
- Location Identifier Separation Protocol (LISP) Virtual Machine (VM) Mobility
- LISP Extended Subnet Mode (ESM) Multihop Mobility
- LISP VPN Virtualization

Describing VXLAN Overlay Networks

- Describe VXLAN Benefits over VLAN
- Layer 2 and Layer 3 VXLAN Overlay
- VXLAN Data Plane

Describing Hardware and Device Virtualization

- Hardware-Based High Availability
- Device Virtualization
- Cisco UCS Hardware Virtualization
- Server Virtualization
- SAN Virtualization
- N-Port ID Virtualization

Describing Cisco FEX Options

- Cisco Adapter FEX
- Access Layer with Cisco FEX
- Cisco FEX Topologies
- Virtualization-Aware Networking
- Single Root I/O Virtualization
- Cisco FEX Evaluation

Describing Basic Data Center Security

- Threat Mitigation
- Attack and Countermeasure Examples
- Secure the Management Plane
- Protect the Control Plane
- RBAC and Authentication, Authorization, and Accounting (AAA)

Describing Advanced Data Center Security

- Cisco TrustSec in Cisco Secure Enclaves Architecture
- Cisco TrustSec Operation
- Firewalling
- Positioning the Firewall Within Data Center Networks
- Cisco Firepower® Portfolio
- Firewall Virtualization
- Design for Threat Mitigation

Describing Management and Orchestration

- Network and License Management
- Cisco UCS Manager
- Cisco UCS Director
- Cisco Intersight
- Cisco DCNM Overview

Describing Storage and RAID Options

- Position DAS in Storage Technologies
- Network-Attached Storage
- Fibre Channel, FCoE, and Internet Small Computer System Interface (iSCSI)
- Evaluate Storage Technologies

Describing Fibre Channel Concepts

- Fibre Channel Connections, Layers, and Addresses
- Fibre Channel Communication
- Virtualization in Fibre Channel SAN

Describing Fibre Channel Topologies

- SAN Parameterization
- SAN Design Options
- Choosing a Fibre Channel Design Solution

Describing FCoE

- FCoE Protocol Characteristics
- FCoE Communication
- Data Center Bridging
- FCoE Initialization Protocol
- FCoE Design Options

Describing Storage Security

- Common SAN Security Features

- Zones
- SAN Security Enhancements
- Cryptography in SAN

Describing SAN Management and Orchestration

- Cisco DCNM for SAN
- Cisco DCNM Analytics and Streaming Telemetry
- Cisco UCS Director in the SAN
- Cisco UCS Director Workflows

Describing Cisco UCS Servers and Use Cases

- Cisco UCS C-Series Servers
- Fabric Interconnects and Blade Chassis
- Cisco UCS B-Series Server Adapter Cards
- Stateless Computing
- Cisco UCS Mini

Describing Fabric Interconnect Connectivity

- Use of Fabric Interconnect Interfaces
- VLANs and VSANs in a Cisco UCS Domain
- Southbound Connections
- Northbound Connections
- Disjoint Layer 2 Networks
- Fabric Interconnect High Availability and Redundancy

Describing Hyperconverged and Integrated Systems

- Hyperconverged and Integrated Systems Overview
- Cisco HyperFlex™ Solution
- Cisco HyperFlex Scalability and Robustness
- Cisco HyperFlex Clusters
- Cluster Capacity and Multiple Clusters on One Cisco UCS Domain
- External Storage and Graphical Processing Units on Cisco HyperFlex
- Cisco HyperFlex Positioning

Describing Cisco UCS Manager Systemwide Parameters

- Cisco UCS Setup and Management
- Cisco UCS Traffic Management

Describing Cisco UCS RBAC

- Roles and Privileges
- Organizations in Cisco UCS Manager
- Locales and Effective Rights
- Authentication, Authorization, and Accounting
- Two-Factor Authentication

Describing Pools for Service Profiles

- Global and Local Pools
- Universally Unique Identifier (UUID) Suffix and Media Access Control (MAC) Address Pools
- World Wide Name (WWN) Pools
- Server and iSCSI Initiator IP Pools

Describing Policies for Service Profiles

- Global vs. Local Policies
- Storage and Basic Input/Output System (BIOS) Policies
- Boot and Scrub Policies
- Intelligent Platform Management Interface (IPMI) and Maintenance Policies

Describing Network-Specific Adapters and Policies

- LAN Connectivity Controls
- SAN Connectivity Controls
- Virtual Access Layer
- Connectivity Enhancements

Describing Templates in Cisco UCS Manager

- Cisco UCS Templates
- Service Profile Templates
- Network Templates

- Designing Data Center Automation

Model-Driven Programmability

- Cisco NX-API Overview
- Programmability Using Python
- Cisco Ansible Module
- Use the Puppet Agent