CISC-12 - DCID - DESIGNING CISCO DATA CENTER INFRASTRUCTURE V7.1

Categoria: **Cisco**

INFORMAZIONI SUL CORSO

Durata:	Categoria:	Qualifica Istruttore:	Dedicato a:	Produttore:
5 Giorni	Cisco	Cisco Certified Instructor	Professionista IT	Cisco

OBIETTIVI

After completing this courses you should be able to:

- Describe the Layer 2 and Layer 3 forwarding options and protocols used in a data center
- Describe the rack design options, traffic patterns, and data center switching layer access, aggregation, and core
- Describe Locator/ID separation protocol
- Design a solution that uses Virtual Extensible LAN (VXLAN) for traffic forwarding
- Describe the hardware redundancy options; how to virtualize the network, compute, and storage functions; and virtual networking in the data center
- Describe solutions that use fabric extenders and compare Cisco Adapter Fabric Extender (FEX) with single root input/output virtualization (SR-IOV)
- Describe security threats and solutions in the data center
- Describe advanced data center security technologies and best practices
- Describe device management and orchestration in the data center
- Describe the storage options for the compute function and the different Redundant Array of Independent Disks (RAID) levels from a high-availability and performance perspective
- Describe Fibre Channel concepts and architecture
- Describe Fibre Channel topologies and industry terms
- Describe Fibre Channel over Ethernet (FCoE)
- Describe security options in the storage network
- Describe the management and automation options for the storage networking infrastructure
- Describe Cisco UCS servers and use cases for various Cisco UCS platforms
- Explain the connectivity options for fabric interconnects for southbound and northbound connections
- Describe the hyperconverged solution and integrated systems
- Describe the systemwide parameters for setting up a Cisco UCS domain
- Describe role-based access control (RBAC) and integration with directory servers to control access rights on Cisco UCS Manager
- Describe the pools that may be used in service profiles or service profile templates on Cisco UCS Manager
- Describe the different policies in the service profile
- Describe the Ethernet and Fibre Channel interface policies and additional network technologies
- Describe the advantages of templates and the difference between initial and updated templates
- Describe data center automation tools

PREREQUISITI

Attendees should be able to:

- -Implement data center networking (LAN and SAN)
- -Describe data center storage
- -Implement data center virtualizations
- -Implement CiscoUnified Computing System (UCS)
- -Implement data Center automation and orchestration with the focus on Cisco ACI and Cisco UCS Director
- -Describe products in the Cisco Data Center and MDS Families

Recommended prerequisites:

- -CCNA - Implementing and Administering Cisco Solutions
- -DCFNDU - Understanding Cisco Data Center Foundations
- -DCCOR - Implementing and Operating Cisco Data Center Core Technologies

CONTENUTI

High Availability on Layer 2

- -Overview of Layer 2 High-Availability Mechanisms
- -Virtual Port Channels

Layer 3 Connectivity

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

Data Center Topologies

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

Locator/ID Separation Protocol

- -Locator/ID Separation Protocol
- -LISP VM Mobility
- -LISP ESM Multihop Mobility
- -LISP VPN Virtualization

VXLAN Overlay Networks

- -VXLAN Benefits over VLAN
- -Layer 2 and Layer 3 VXLAN Overlay
- -MP-BGP EVPN Control Plane Overview
- -VXLAN Data Plane

Hardware and Device Virtualization

- -Hardware-Based High Availability
- -Device Virtualization

- -Cisco UCS Hardware Virtualization
- -Server Virtualization
- -SAN Virtualization
- -N-Port ID Virtualization

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

Basic Data Center Security

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

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
- -Designing for Threat Mitigation

Management and Orchestration

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

Storage and RAID Options

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

Fibre Channel Concepts

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

Fibre Channel Topologies

- -SAN Parameterization

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

FCoE

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

Storage Security

- -Common SAN Security Features
- -Zones
- -SAN Security Enhancements
- -Cryptography in SAN

SAN Management and Orchestration

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

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

Fabric Interconnect Connectivity

- -Using 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

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

Cisco UCS Manager Systemwide Parameters

- -Cisco UCS Setup and Management
- -Cisco UCS Traffic Management

Cisco UCS RBAC

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

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

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

Network-Specific Adapters and Policies

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

Templates in Cisco UCS Manager

- -Templates in Cisco UCS Manager
- -Service Profile Templates
- -Network Templates

Designing Data Center Automation

- -Model-Driven Programmability
- -Cisco NX-API Overview
- -Programmability Using Python
- -Cisco Ansible Module
- -Cisco Intersight Cloud Orchestration Overview

Practice Activities

- -Design Virtual Port Channels
- -Design First Hop Redundancy Protocol (FHRP)
- -Design Routing Protocols
- -Design Data Center Topology for a Customer
- -Design Your VXLAN Network
- -Create a Cisco FEX Design
- -Design Management and Orchestration in a Cisco UCS Solution
- -Design a Fibre Channel Network
- -Design and Integrate an FCoE Solution
- -Design a Secure SAN

-Design Cisco UCS Director for Storage Networking
-Design a Cisco UCS Domain and Fabric Interconnect Cabling
-Design a Cisco UCS C-Series Server Implementation
-Design a Cisco UCS C-Series Integration with Cisco UCS Domain
-Design a Cisco UCS Mini Solution
-Design a Cisco UCS Fabric Interconnect Network and Storage Connectivity
-Design Systemwide Parameters in a Cisco UCS Solution
-Design an LDAP Integration with a Cisco UCS Domain
-Design Pools for Service Profiles in a Cisco UCS Solution
-Design Network-Specific Adapters and Policies in a Cisco UCS Solution

INFO

Esame: 300-610 - Designing Cisco Data Center Infrastructure
Materiale didattico: Materiale didattico ufficiale Cisco in formato digitale
Costo materiale didattico: incluso nel prezzo del corso a Calendario
Natura del corso: Operativo (previsti lab su PC)