

CCIE Data Center

Course Details:- Objective

- After taking this course, you should be able to.
- Implement routing and switching protocols in Data Centre environment.
- Implement overlay networks in data Centre.
- Introduce high-level Cisco Application Centric Infrastructure (Cisco ACI) concepts and Cisco Virtual Machine manager (VMM) domain integration.
- Describe Cisco Cloud Service and deployment models.
- Implement Fibre Channel fabric.
- Implement Fibre Channel over Ethernet (FCOE) unified fabric.
- Implement security features in data Centre.
- Implement software management and infrastructure monitoring.
- Implement Cisco UCS Fabric Interconnect and Server abstraction.
- Implement SAN connectivity for Cisco Unified Computing System (Cisco UCS).
- Describe Cisco HyperFlex infrastructure concepts and benefits.
- Implement Cisco automation and scripting tools in data Centre.
- Evaluate automation and orchestration technologies.

Course Outline: Theory

- Implementing Data Centre Switching Protocols:**
 - Spanning Tree Protocol
 - Port Channels Overview
 - Virtual Port Channels Overview
- Implementing First-Hop Redundancy Protocols:**
 - Hot Standby Router Protocol (HSRP) Overview
 - Virtual Router Redundancy Protocol (VRRP) Overview
 - First Hop Redundancy Protocol (FHRP) for IPv6
- Implementing Routing in Data Centre:**
 - Open Shortest Path First (OSPF) v2 and Open Settlement Protocol (OSP) v3
 - Border Gateway Protocol
- Implementing Multicast in Data Centre:**
 - IP Multicast in Data Centre Networks
 - Internet Group Management Protocol (IGMP) and Multicast Listener Discovery (MLD)
 - Multicast Distribution Trees and Routing Protocols
 - IP Multicast on Cisco Nexus Switches

Implementing Data Centre Overlay Protocols:

- Cisco Overlay Transport Virtualization
- Virtual Extensible LAN

Implementing Network Infrastructure Security:

- User Accounts and Role Based Access Control (RBAC)
- Authentication, Authorization, and Accounting (AAA) and SSH on Cisco NX-OS
- Keychain Authentication
- First Hop Security
- Media Access Control Security
- Control Plane Policing

Describing Cisco Application-Centric Infrastructure:

- Cisco ACI Overview, Initialization, and Discovery
- Cisco ACI Management
- Cisco ACI Fabric Access Policies

Describing Cisco ACI Building Blocks and VMM Domain Integration:

- Tenant-Based Components
- Cisco ACI Endpoints and Endpoint Groups (EPG)
- Controlling Traffic Flow with Contracts
- Virtual Switches and Cisco ACI VMM Domains
- VMM Domain EPG Association
- Cisco ACI Integration with Hypervisor Solutions

Describing Packet Flow in Data Centre Network:

- Data Centre Traffic Flows
- Packet Flow in Cisco Nexus Switches
- Packet Flow in Cisco ACI Fabric

Describing Cisco Cloud Service and Deployment Models:

- Cloud Architectures
- Cloud Deployment Models

Describing Data Centre Network Infrastructure Management, Maintenance, and Operations

- Time Synchronisation
- Network Configuration Management
- Software Updates
- Network Infrastructure Monitoring

Explaining Cisco Network Assurance Concepts:

- Need for Network Assurance
- Cisco Streaming Telemetry Overview

Implementing Fibre Channel Fabric:

- Fibre Channel Basics
- Virtual Storage Area Network (VSAN) Overview
- SAN Port Channels Overview
- Fibre Channel Domain Configuration Process

Implementing Storage Infrastructure Services:

- Distributed Device Aliases
- Zoning
- N-Port Identifier Virtualization (NPIV) and N-Port Virtualization (NPV)
- Fibre Channel over IP
- Network Access Server (NAS) Concepts
- Storage Area Network (SAN) Design Options

Implementing FCoE Unified Fabric:

- Fibre Channel over Ethernet
- Describing FCOE
- FCOE Topology Options
- FCOE Implementation

Implementing Storage Infrastructure Security:

- User Accounts and RBAC
- Authentication, Authorization, and Accounting
- Fibre Channel Port Security and Fabric Binding

Describing Data Centre Storage Infrastructure Maintenance and Operations:

- Time Synchronization
- Software Installation and Upgrade
- Storage Infrastructure Monitoring

Describing Cisco UCS Server Form Factors:

- Cisco UCS B-Series Blade Servers
- Cisco UCS C-Series Rack Servers

Implementing Cisco Unified Computing Network Connectivity:

- Cisco UCS Fabric Interconnect
- Cisco UCS B-Series Connectivity
- Cisco UCS C-Series Integration

Implementing Cisco Unified Computing Server Abstraction:

- Identity Abstraction
- Service Profile Templates

Implementing Cisco Unified Computing SAN Connectivity:

- iSCSI Overview
- Fibre Channel Overview
- Implement FCOE

Implementing Unified Computing Security:

- User Accounts and RBAC
- Options for Authentication
- Key Management

Introducing Cisco HyperFlex Systems:

- Hyper converged and Integrated Systems Overview
- Cisco HyperFlex Solution
- Cisco HyperFlex Scalability and Robustness