Implementing Cisco Data Center Infrastructure (DCII) - Duration **5 days**

About this Course

Implementing Cisco Data Center Infrastructure (DCII) v6.0 is a five-day instructor-led course that provides you with the skills necessary to implement LAN, SAN and Data Center Unified Fabric using Cisco MDS switches, Cisco Nexus switches and Cisco Nexus 2000 Series Fabric Extenders (FEXs). This course provides rich, hands-on experience of implementing Cisco data center infrastructure.

Who should attend

- Data Center Designers
- Data Center Administrators
- System Engineers
- Data Center Engineers
- Data Center Managers

Class Prerequisites

Prior to attending this course, you should have attended the following classes or obtained equivalent level of knowledge:

- Introducing Cisco Data Center Networking (DCICN)
- Introducing Cisco Data Center Technologies (DCICT)
- Interconnecting Cisco Network Devices: Accelerated (CCNAX) OR Interconnecting Cisco Network Devices Part 1 (ICND1) and Interconnecting Cisco Network Devices Part 2 (ICND2)

You should have the following knowledge and skills have before attending this course:

- Describe data center networking concepts
- Describe data center storage concepts
- Describe data center virtualization
- Describe Cisco Unified Computing System
- Describe data center automation and orchestration with the focus on Cisco ACI and UCS Director
- Identify products in the Cisco Data Center Nexus and MDS families

What You Will Learn

Upon completion of this course, you will be able to:

- Configure RSTP, MST, and port channels and implement Cisco FabricPath, OTV, VXLAN, and LISP
- Configure first-hop redundancy, routing, and multicast in the data center
- Configure user management and implement system security features on Nexus switches
- Perform basic Fibre Channel configuration, manage Fibre Channel domains, and implement Fibre Channel port security and binding
- Configure FCoE
- Configure distributed device aliases, zoning, NPV, and FCIP
- Configure system management and infrastructure monitoring

Outline: Implementing Cisco Data Center Infrastructure (DCII)

Module 1: Data Center Protocols

- Spanning tree protocol
  - Rapid PVST
  - MST
  - STP
- Port channels
- Virtual port channels (vPC)
- Fabric extenders (FEX)
- FabricPath implementation
- Dynamic fabric automation (DFA)
- Overlay transport virtualization (OTV)
- VXLAN
- LISP

Module 2: Layer 3 Switching Features in the Data Center

- First-hop redundancy
  - FHRP
  - HSRP
  - VRRP
  - GLBP
- Routing protocols on Nexus devices
  - OSPFv2
  - IS-IS
  - BGP
  - OSPFv3
- IP Multicast
- IGMP and MLD configuration

Module 3: Data Center Infrastructure Security

- User accounts
- User roles
- SSH on NX-OS
- AAA framework
- Keychain authentication
- DHCP
- IP source guard
- ARP
- Port security
- MAC addressing

Module 4: Data Center Infrastructure Storage Fabric

- Fibre channel
  - Interfaces
  - Registration
- FCID format
- FLOGI and FCNS
- VSAN
- SAN port channels
- Manage FC domains
- Fibre channel port security
- Port security vs. fabric binding

Module 5: FCoE Unified Fabric

- FCoE
  - Overview
  - Benefits
  - Bridging standards
  - Elements and ports
  - Initialization protocol
  - Topology
- FCoE configuration
- FCoE verification

Module 6: Data Center Infrastructure Storage Services

- Device alias overview
- Alias modes
- Distribution of device alias
- Zoning
  - Overview
  - Enforcement
  - Full and active
  - Merge failures
  - Enhanced

    - Smart
    - Recommended practices
- NPIV and NPV
- Fibre channel over IP (FCIP)
    - Configuration
    - Verification
    - Port channels
    - FSPF
    - VRRP
    - Inter-VSAN routing

Module 7: Data Center Infrastructure Maintenance, Management, and Operations

- Cisco fabric services
- NTP and PTP
- Cisco ISSU
- EPLDs
- GIR (maintenance mode)
- Monitoring and programmability
    - Syslog
    - SMNP
    - NetFlow
    - SPAN
    - RSPAN
    - ERSPAN

Labs:

- Lab 1: Configure Layer 2 Switching
- Lab 2: Configure Port Channels
- Lab 3: Configure FEX
- Lab 4: Configure Cisco FabricPath
- Lab 5: Configure OTV
- Lab 6: Configure VXLAN
- Lab 7: Configure VRRP
- Lab 8: Configure OSPF
- Lab 9: Configure User Management Security Features
- Lab 10: Configure System Security Features
- Lab 11: Configure Fibre Channel
- Lab 12: Manage Domains and Configure Persistent FCIDs
- Lab 13: Configure Fabric Binding and Port Security
- Lab 14: Configure FCoE
- Lab 15: Configure Device Aliases
- Lab 16: Configure Zoning
- Lab 17: Configure NPV
- Lab 18: Configure System Management
- Lab 19: Implement Infrastructure Monitoring