Cisco MDS 9000 Configuration and Operations

Length
3 days

Format
Lecture/lab

Track
Support

Version
4.2

Course Description

This 3-day hands-on class gives you the minimum knowledge and skills that you need to deploy the Cisco MDS 9000 Series using NX-OS 4.2 or higher. Course topics include installing and bringing up the switch, configuring Virtual SANs (VSANs), domains, interfaces, and zones, implementing highly resilient Inter-Switch Links (PortChannels), and basic troubleshooting.

In the lab, you will configure the switch from an out-of-the-box state, perform nondisruptive software upgrade, and configure VSANs, domains, interfaces, and zones to implement and manage a working SAN.

Who Should Attend

This course provides technical training for system engineers, network engineers, and field engineers who need to configure and manage MDS 9000 Series switches.

Recommended Prerequisites

Understanding of basic data storage components, protocols, and Fibre Channel SANs is recommended.

Related Training

This course covers a subset of the 5-day *Implementing Cisco Storage Networking Solutions (ICSNS)* course.

MDSCO

Learning Objectives

After you complete this course, you will be able to:

- Identify the components, services, and features of the MDS 9000 platform
- Perform the initial software configuration process
- Configure virtual SANs (VSANs) and dynamic VSANs
- Manage domains
- Configure FC interfaces
- Configure zones and zonesets
- Configure intelligent addressing
- Implement resilient inter-switch links
- Configure traffic routing and load-balancing
- Diagnose and fix common configuration errors

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Learning Solutions

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Course Outline

Lesson 1: MDS 9000 Platform Components and Architecture
- SMB and Enterprise SAN Requirements and Consolidation Methods
- The MDS 9000 Virtual SAN
- The MDS 9000 Platform
- The MDS 9000 Modules
- Crossbar and Supervisor Module Architecture
- MDS Switching Module Architectures
- MDS Switching Module Oversubscription

Lesson 2: Intelligent Fabric Services
- MDS Intelligent Services Modules
- FAIS Overview
- SANTap
- SAN Virtualization
- Protocol Acceleration
- Security
- Cisco MDS 9000 MDS 9000 FICON Support

Lesson 3: Initial Setup, Fabric Manager, CLI
- Performing the Initial Setup
- Cisco Fabric Manager Server
- Cisco Fabric Manager
- The Command Line Interface

Lesson 4: Licensing, Software Upgrade, Troubleshooting the Boot Process
- Software Licensing
- Software Installation and Upgrade Prerequisites
- Software Upgrade Methods
- Troubleshooting the Boot Process

Lesson 5: Configuring Cisco Fabric Services
- Cisco Fabric Services
- Cisco Fabric Services Architecture
- Cisco Fabric Services Implementation
- CFS Distribution over IP
- Call Home Services
- Configuring Call Home
- Customized Alert Group Messages
- Configuring NTP

Lesson 6: Fibre Channel Protocol Addressing
- Fibre Channel Layers
- Fibre Channel Addressing
- World Wide Names
- Fibre Channel Routing
- The Registered State Change Notification Process

Lesson 7: VSAN Configuration and Domain Management
- VSAN Overview
- Creating VSANs
- Domain ID Assignment
- The Fabric Configuration Server
- Configuring the Principal Switch priority
- FCID Assignment
- N-Port Virtualizer and N_Port Identifier Virtualization
- Dynamic Port VSAN Membership

Lesson 8: Configuring Interfaces
- Configuring Fibre Channel Interfaces
- Trunk Mode Configuration
- Port Bandwidth Reservation

Lesson 9: FSPF and PortChannels
- Implementing Traffic Engineering
- Configuring Load Balancing
- PortChannel Overview
- Creating PortChannels
- The PortChannel Protocol
- Modifying PortChannel Links

Lesson 10: Implementing Zones
- Zoning Overview
- Creating Zones and Zonesets
- Verifying Zone Configuration
- Configuring Zoneset Distribution
- Recovering from Zone Merge Failures
- Managing Zonesets
- Enhanced Zoning Features
- Recommended Practices for Zoning

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Course Outline

Lesson 11: Basic Troubleshooting

- Troubleshooting Methodology
- Verify Power
- Monitoring Ports
- Verifying Fabric Registration
- Cisco Fabric Manager Tools
- Using FC Ping and FC Trace
- Monitoring Processes and CPUs
- FCIP Troubleshooting
- Troubleshooting Network Connectivity
- Verify FCIP Configuration
- SPAN / RSPAN Overview

Course Labs

Lab 1: MDS 9000 Initial Setup
Lab 2: Troubleshooting the Boot Process
Lab 3: Configuring CFS and Call Home
Lab 4: Configuring VSANs
Lab 5: Configuring Interfaces and Port Tracking
Lab 6: Configuring Device Aliases and Zoning
Lab 7: Configuring PortChannels and FSPF
Lab 8: Challenge Lab (Optional)