



## **Module 1: Managing Enterprise SANs**

### **Lesson 1: Intelligent Fabric Services**

MDS Intelligent Services Modules  
Fabric-Based Applications  
Data Mobility  
Data Security Services  
I/O Acceleration

### **Lesson 2: SAN Device Virtualization**

MDS 9000 SAN Device Virtualization  
FlexAttach

### **Lesson 3: Data Mobility Manager**

Overview of Data Mobility Manager  
Configuring Data Mobility Manager

### **Lesson 4: Federated Fabric Manager Servers**

Federated Fabric Manager Servers  
Fabric Manager Installation Prerequisites

### **Lesson 5: Management Infrastructure Implementation**

Command Line Interface Commands  
Command Line Interface Variables and Aliases  
Overlay VSANs  
Fabric-Device Management Interface Implementation  
Cisco Discovery Protocol  
CiscoWorks Resource Manager Essentials Implementation

### **Lab 1: SAN Device Virtualization**

### **Lab 2: Data Mobility Manager**

### **Lab 3: Management VSANs**

## **Module 2: Securing the SAN**

### **Lesson 1: Implementing Port and Fabric Security**

Port Security Features  
Port Security Configuration  
Distributing Port Security  
Fabric Binding for Fibre Channel  
DHCHAP Overview  
Configuring FCSP  
Overview of IP ACLs  
Configuring IP ACLs  
TRustSec Link Encryption feature

### **Lesson 2: Storage Media Encryption**

Overview of SME  
Key Management  
Provisioning

### **Lesson 3: Management Security**

Configuring SSH  
AAA Solutions and Services  
Implementing AAA Services  
AAA Service Options  
Distributing AAA Configurations  
Implementing RBAC  
Configuring RBAC and User Accounts  
Distributing RBAC Configurations

### **Lab 4: RBAC and RADIUS**

### **Lab 5: Fabric and Port Security**

### **Lab 6: Fabric Manager Server**



# Implementing Advanced Cisco Storage Networking Solutions

## Course Outline

### Module 3: Tuning SAN Performance

#### Lesson 1: Managing Port Resources

Managing Buffer Credits  
Advanced Interface Parameters  
Port Bandwidth Reservation

#### Lesson 2: I/O Acceleration

Protocol Acceleration Overview  
MDS 9000 I/O Accelerator Package  
Configuring I/O Accelerator  
Verifying IOA Configuration

#### Lesson 3: Monitoring SAN Performance

Fabric Management Server  
Performance Manager  
Traffic Analyzer

#### Lesson 4: Congestion Control and QoS

Virtual Output Queues  
Configuring FCC  
Configuring QoS  
QoS Behavior with Generation-1 and Generation-2 Switching Modules  
Zone-Based QoS

#### Lab 7: I/O Acceleration

#### Lab 8: Performance Monitoring

#### Lab 9: Quality of Service

#### Lab 10: Port Resources

### Module 4: Troubleshooting the SAN

#### Lesson 1: Monitoring SAN Health

RMON  
System Message Logging  
Onboard Failure Logging  
Command Scheduler

#### Lesson 2: Capturing and Analyzing SAN Traffic

SPAN Overview  
RSPAN Overview  
Implementing RSPAN  
Port Analyzer Adapter Configuration  
The Cisco Fabric Analyzer  
Wireshark Overview

#### Lesson 3: Troubleshooting Process

Troubleshooting Process  
Troubleshooting Port States  
Troubleshooting a Flapping Port  
SFP Diagnostics  
Online Health Management System  
Verifying Device Registration  
Troubleshooting FCID Assignment  
E\_Port Isolation  
Verifying VSANs and Zoning  
Domain Manager Issues

#### Lab 11: Challenge Lab

#### Lab 12: RSPAN and the Cisco Fabric Analyzer



Learning Solutions



# Implementing Advanced Cisco Storage Networking Solutions

## Course Outline

### **Module 5: Implementing iSCSI**

#### **Lesson 1: iSCSI Configuration**

- iSCSI Protocol Overview
- iSCSI Naming Schemes
- iSCSI Implementation on IPS Modules
- FC-to-iSCSI Routing Overview
- Overview of iSCSI Configuration Steps
- Verifying the Configuration
- iSCSI Configuration Options

#### **Lesson 2: iSCSI High Availability and Security**

- iSCSI High Availability
- iSCSI Security

#### **Lesson 3: iSCSI Server Load Balancing**

- Configuring iSLB Features and Prerequisites
- Configuring iSLB Initiators and Targets
- Configuring Load Balancing using VRRP

#### **Lab 13: Deploying iSCSI**

#### **Lab 14: Configuring VRRP for iSCSI**

#### **Lab 15: iSCSI Server Load-Balancing (iSLB)**



Learning  
Solutions